

THE PAST AND THE FUTURE OF CIVILIZATIONS

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Foreword: To the foreign reader

Much is written about contemporary Russia abroad these days. The deep crisis the country has plunged into is familiar not only to experts, but throughout wider groups of global society. Readers abroad, however, know little of the rich abundance and variety of concepts and theories currently being developed within Russian science. Desperate to find a way out of the disaster that threatens this great nation and eager to make sense of the transformations, which have overtaken the entire world, Russian theoreticians are now coming up with many ideas and hypotheses of great scientific daring. Russian scientific thought has taken an active part in creating a new picture of the world, a new way of looking at its past and future, a new scientific paradigm that will prevail in the next century and reveal new perspectives for the human race.

The Russian school of cyclicism is one of the most promising movements in modern scientific thought. Its basic characteristics were laid down in the twenties and thirties by the world-famous Russian scientists Nikolai Kondratieff, Pitirim Sorokin, Vladimir Vernadskiy, Alexander Chizhevsky, Alexander Bogdanov, Nikolai Berdyayev and many others. Their ideas were taken up in the works of Josef Schumpeter, Arnold Toynbee, Fernand Braudel, Arthur Schlesinger and other major Western scholars.

The cyclo-genetic approach to understanding the problems of the past, present and future of both nature and society has been advanced by a certain number of scientists from Moscow, St. Petersburg, Novosibirsk, Minsk and Stavropol. Interdisciplinary discussions are held on a regular basis, including at Kondratieff Conferences conducted every three years. Russian and foreign scientists who have the most success in developing this trend in science are awarded medals in the name of N. D. Kondratieff.

The author of the monograph, which is now brought to the attention of the Western reader, is Professor Yuri Yakovets, one of the leading representatives of the Russian school of cyclicism. While emphasizing the cyclogenetic approach, Professor Yakovets has come up with some very original ideas and hypotheses in his field and has published a number of books translated into foreign languages.

This work is a generalization of a sort. It deals with those world civilizations, which illustrate the major steps in the gradual progress of mankind as a unified entity, starting with the neolithic revolution. Every element in society, every country and every civilization must go through the phases of origin, formation, maturity, and crisis — the latter stage resulting either in transition to a new stage of development or, on the other hand, in collapse, decay and dereliction. No development begins from anything. The hereditary genotype of a society is preserved and transmitted to future generations; critical situations turn up a great variety of mutations, from which the most useful are selected to enrich the genotype, thus aiding adaptation to changes in the environment.

In viewing this self-development, the author manages to avoid exaggerating either the material or the spiritual aspects. The human being is a biosocial creature, whose social and predominantly spiritual self grows stronger at every step in its development, gradually advancing in its ability to undertake new initiatives. Still, this does not imply the self-formation of the spirit in isolation from the material world. A civilization, or a stage in the formation of a civilization, becomes a reality when it brings about a thorough transformation of all levels in the pyramid of society, and when an adequate technological basis is formed, together with a new structure in economic, social and political relations. Human life and history thus demonstrate a marked dualism. ,

The book deals mainly with the past, with the history of the world and local civilizations (or, to be more precise, it deals with the philosophy of history, with history's regularities), but its goal is to look into the future, to predict changes in the priority of world civilizations within the framework of the emerging historical supercycle. At the same time, it undertakes a thorough review of the post-industrial civilization, which is currently in the stage of formation — a formation, which, the author believes, will take a period of about half a century. Of course, this is only one of many historical possibilities and some of the author's opinions are controversial, but his position and his view of the future nevertheless undoubtedly deserve consideration.

It is, of course, true that a book which has been through two editions in Russia is intended mainly for a Russian audience, and it is very natural that Professor Yakovets' foremost concern is with the history and future of Russia. However, the historical trends of Russian civilization are unfolded in the book against a global background and to the rhythm of changes in world civilizations. The future of Russia today cannot be conceived apart from the global context. But at the same time, the choice that Russia makes may have a considerable effect on the future destinies of the world community. The book goes far in delineating the essential contradictions of a world subject to painful changes, and at the same time endows the reader with an optimistic view of history, while demonstrating real ways in which to overcome contemporary crises and deadlocks.

There is one more characteristic of this book that I would like to emphasize. This book is by no means a tedious treatise filled with explanations of commonplace truths and familiar arguments, but a well-written, colorful text which provokes thought and stimulates the desire to speculate — and sometimes to argue against the author's opinions.

I had great pleasure in reading this remarkable book, which I now recommend to Western readers.

Mikhail Gorbachev

PREFACE

The subject of this book is not just economics. It may be related to a number of disciplines such as history, philosophy, social genetics, the theory of cyclical dynamics, and macrolevel modeling. Its subject is the logic of the historical process.

There is no need to demonstrate to the reader how complete, thorough and penetrating in its treatment of details is Professor Yakovets' account of every epoch in the history of mankind, as he unveils all aspects of the historical process — creation and development of the family, of knowledge and skills, the dynamics of interests and motivations, improvements of tools of labor and products, energy resources and ecological crises, social, political and legal developments, etc. Although called a textbook in the introduction, this book is essentially an encyclopedia housing the whole of historical knowledge. It needs to be read rather than summarized.

In spite of the apprehensions it voices, it would be appropriate to describe Professor Yakovets' book as optimistic. It is not merely a matter of the author's position, but due to the nature of the subject itself. The history of world civilizations makes us believe that mankind is able, after all, to cope with all the troubles and messes which have fallen to its lot.

This conclusion is validated by the abundant historical material given by Professor Yakovets, and in this respect book may indeed be called a textbook, in as much as it arms the intelligent reader with a true knowledge of the past and a scientifically based faith in the future, i.e. with exactly what we largely need.

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INTRODUCTION: A NEW WAY OF LOOKING AT THE PAST AND FUTURE OF MANKIND.

Time to re-evaluate our heritage. People today may have equal reason to consider themselves as both lucky and unlucky: we are living, working or studying in a transitional period in the history of the whole world, when the trajectory of social developments is being drastically transfigured, and when the change is increasing over the life of every nation and every person. This is a time when every family and every person stands before a great choice, a time for painful reevaluations and time for challenging experiments.

From past generations we inherit cultural treasures, which we supplement, with our own experience. This embraces the knowledge of the principles of social and natural developments (science); the emotional gift to perceive the environment (culture); the code of human relationships (morals); ideals and motives determining human activities (ideology, religion); methods and shapes in which intellectual heritage descends from one generation to another (education). Critical periods are marked by re-appraisal of intellectual heritage, which comprises changes in the scientific paradigm, renovation of the cultural and ethical values, formation of the new ideals to take place of the old ideals, which have collapsed, and revolutionary changes in education. This is a very painful, agonizing and lingering process, accompanied by the collapse of many conventional stereotypes in behavior and thought, accompanied by the stupendous expansion of alternative views, a sudden revival of entirely abandoned and scarcely remembered opinions, with a reanimation of mysticism and sorcery, with the appearance of new Messiahs prophesying Heaven on earth for their adherents. The half-insane gain the haloes of the saints.

Is there, then, any way to choose the right path to the future and to avoid making a fatal error? Is it possible to discern the truth at this motley fair of tempting and gaudy ideas? It is the history that can serve as a reliable compass in the pursuit of this target. History is not just a way of describing occurrences in the past and actions taken by exceptional persons or by the people under their influence, however colorful, on the virtue of literary gift of a chronicler, might this description be. The historical

knowledge involves generalization and comprehension of past experience, every grain of which has been bought at a very high price. Despite the fact that many events which occur in the present seem to be unique, it is always possible to discover certain, and at times even considerable resemblance with what has already been experienced by people who lived in the past and found the way to overcome similar crises. All what is needed is to learn the lessons of history, and to add to what is already known one's own experience. From this point of view, every person is a disciple of history, no matter him being diligent or negligent one.

One widely known paradox voiced by Hegel states that history and experience demonstrate that nations and governments have always proved their total inability to discern any sort of lesson from the history; nor have they ever been guided with any precept or instruction they could have learnt from it. (52. P. 74) Much as it sounds fine, nevertheless, it is not true. Men search sense in the past in order to be sure to avoid mistakes in the present and to take the best alternative option leading to the future. At the same time it should be admitted that there are huge differences in understanding, and equally, in concerns and objectives of various individuals and social groups. Sometimes they oppose one another; and that is why historical trend actually takes shape of a resultant force formed as a sum of deviating vectors. What is more, this trend has winding, zigzag shapes. Internal springs of long-term fluctuations (crises and expansion phases constantly following each other) are normally concealed not only from an ordinary citizen, but for an expert historian, as well. Even so, many investigations on historical trends eventually wrestle their way.

But assembling truths to be discovered in such a way fails to be a permanent or: an unceasing process. At the turning-points of history conventional views on the courses of historical developments more often than not fail to account for astonishing changes in life of individuals and nations, to foresee their further destiny with reasonable degree of certainty, to propose an efficient way to overcome crisis. This is a time when re-appraisal of values and revision of scientific legacy inevitably come up. One group of scholars draw a panicky conclusion, as a general posture, saying that the ways of history can never be predicted or explained, which virtually means putting an end to history. Others

persevere in keeping stubbornly to the futile and demolished veracities, as they look forward to give a reverse motion to the wheel of history. However, time is . irreversible, and anyone who broods on bringing back the years, which have come away, is doomed to a failure. And there are still others who are restlessly trying to understand the nature of changes that have come to dominate over the world, and to discern the truths of science which have proved valid (including ones which were put forward before long to be pushed aside by the contemporaries) from those that ought to be dismissed as soon as possible. They are eager to find out which of new generalisations, conclusions and principles should complement to the treasury of historical knowledge. That is the most efficient and beneficial way a science thought could choose; and this is the way we will take in our attempt to deliberate upon the current turning period in human history and the history of Russia. The eminent Russian philosopher Nikolai Berdyayev noted that 'the catastrophic points in history are really auspicious for creating a new philosophy of history' (6, p. 6). So let us make full use of this auspicious opportunity.

What is this book about? Writing textbooks usually pursues the purpose of shaping a certain quantity of well-known, indisputable opinions in a coherent and adopted form to summarise structural and dynamical principles of such a field of the outer world that serves as a chosen subject. Normally textbooks are specialised up to a certain level, (i.e. textbooks for schoolchildren, for students, for studying adults), and from this point of view they are representative of the most available and the most comfortable form of handing over the legacy of scientific and practical wisdom to generations to come next. While using these sort of textbooks, emphasis should be mainly placed on learning and keeping in mind a general system of common truths.

There is also another sort of textbooks. At turning points of history a sum of knowledge and practical wisdom which have been accumulated for years is doomed to depreciation. Many textbooks are getting obsolete, becoming unapt to account for rapidly changing conditions. The field of knowledge is suddenly a tricky ground. Everyone may find it necessary to study a-new. And this goal calls for a new type of textbooks.

First, this new type of textbooks is adjusted for truths of science which are essentially new, for truth struggling its way to be more adequate for a new reality and altering conditions. They certainly risk, at that: new system is on its way to become formulated, it is still shifty, as some of the hypotheses may prove to be wrong in the future, or given a more accurate definition. However, we are not in the position to linger. Growing functional ignorance, and professional incompetence along with it, make it ultimately necessary to design a new generation of textbooks which would be able to help millions of people to think over the oncoming changes and to adapt to them in a more efficient way.

Secondly, this type of textbooks focuses upon a creative quest for new knowledge, rather than merely put the wide-spread facts into the readers' heads.

They may incite the reader to speculate, make a student plunge into an austere over-estimation of his own acquired wisdom. This can well result into discovery of the new patterns of history, so that he may finally find himself capable of foreseeing the future due to the better understanding of the past and the present.

Next, in view that the need to study and to study a-new is commonly accepted, textbooks of the new type should address a wide range of individuals studying at different levels of gradual education, rather than to be too much specialised at their first output. It is not until new ideas have been examined by life that more specialised textbooks will be needed.

And finally, since own instruments and technical devices of education undergo radical changes during turning periods, new textbooks should utilize the most powerful technology for training process. In the age of information revolution this implies using computers, video, television, multimedia resources, Internet.

This book was written to be just that sort of a textbook. How does it differ from traditional textbooks?

First. This textbook is by no means a listing of events of the past in some systemised order. It is more an attempt to deliver history of sense, to discover common and specific features in the dynamics of material and mental worlds, in their economics, politics, and international relations. It is assumed that the reader has already been acquainted with the major events

of the national and global histories, and that taking in the inner logic of these events is the only thing needed.

History as a science is multi-structured. It implies studying the progress of mankind as unified continuity (global history), at gradual developmental stages (ancient history or mediaeval history), in particular regions, in various forms of human activity, such as histories of economics, arts, wars, etc. And there is the utmost level in the pyramid of historical knowledge, on which philosophy of history surpasses. This book is a textbook on the philosophy of history, the most abstract science from its historical kin. It is aimed at the wakening of reader's attention, and turning it to undercurrent springs and sources of historical activity, to discovery of their roots. Thus the reader is expected to trace logical trend in historical development. Perhaps he will want to argue against some of opinions and hypotheses about to be stated, to come up with one's own point of looks on the lessons of history, and at the same time to test them through historical materials.

The way of approaching history which the reader is encouraged to take involves viewing history as a sum of knowledge aiding to disclose patterns and trends in the development of world and local civilizations, to form better idea of the processes underlying upswings and downswings in destinies of many nations, of the deep historical sources responsible for some dramatic events today, and to foresee their mutations in a long perspective. Thus, study of the past becomes instrumental in overcoming deadlock that scientific understanding has recently come to face. Historical knowledge affects public view and sketch horizons for future developments. Here the following position, voiced by Fernand Braudel, may be worth citing: 'I wish professionals in social sciences did not treat history merely as a source of understanding and research applicable singularly to the past. Is it too much to say that the present, in its better part, is overtaken by the power of the past determined to survive? Does not the past, through its regularities, its differences and resemblances, produce a key for any serious attempt to disclose the present?'» (9, v. 3, p. 11) So let's seize the opportunity to use this very key.

Second. The textbook employs the theory of cyclical dynamics and social genetics, together with the concept of historical cycles with

different terms of duration. These cycles range from Kondratieff's semi-centennial cycles to the centuries-old civilizational cycles and millennial super-cycles. This theory disburdens the traditional articulation of the past, the present and the future into five social and economic formations, endowed with the infinitely removed starting point (i.e. the primitive communal system) and the interminable culmination (i.e. the communist era). It is assumed that the starting point of history sets in the neolithic civilization. History as presented in this book is a periodical, to an increasing rhythm, alternation of world civilizations with changing epicenters, and uneven undulatory development of local civilizations. This trend is believed to continue in the future. Through this look, the late 20th and the beginning of the 21st century form a transitional epoch lasting from industrial towards post-industrial civilization. This time brought about something, which is most typical for any transitional period, i.e. spasm of contradictions, chaos, agonizing delivery of a new society.

Elements of new approach to the dynamics of historical developments have been brought out a long time ago by N. D. Kondratieff, A. L. Chizhevsky, A. Toynbee, F. Braudel, N. A. Berdyaev and P. Sorokin. Due to the recent predominance of utilitarian and ideological doctrines, the new approach, however, failed to reach acclaim, or to produce any effect on the educational standards in teaching global and Russian history. Since then the old dogmata deteriorated, releasing ample opportunity of adopting new paradigms of historical development.

Third. The textbook's goal is to overcome the approach, which grants priority to the development of productive forces and to class struggle. We share the principle that social dynamics are always guided by the development of human being, always aligned with the development of his spiritual world, i.e. science, culture, and education. This process embodies in means of labor and natural objects transformed by human toil and mind and in economic and social relations. The interdisciplinary approach like this permits to avoid one-side shifts in assertions, and promotes the multi-dimensional view at historical developments and phenomena.

Fourth. In as far as the global progress constitutes a single entity comprising various peoples' destinies which act together, it is suggested to overcome artificial gap in the study of dynamics of the world and of local

civilisations. In treating history as pulsation of world civilizations, the emphasis is placed on its overall rhythm and characteristic features, as much as on the specific dynamics of local civilization, on their interactions and inter-absorption. This approach will help avoid either extreme: whether it be ignoring common principles and trends of human development in its move from one historical stage towards another one as a unified multiplex entity, or in making attempts to directly copy the hand and the historical experience of some other countries without due account of the peculiarities of their dynamics and historical destinies.

And fifth. The historical studies and textbooks usually present description of the past in their dealing with events that have already taken place. This book contains a chapter devoted specifically to the future — to the formation of post-industrial civilization and to the destiny of local civilizations in the 21st Century. Of course, this is just another version, just a personal look. But this approach is designed to stimulate speculation over the lessons of history in order to predict possible outcomes in the future developments of the society, to mobilize will and energy for the implementation of a positive scenario, and to overcome the global crisis of today.

Is there any way of knowing the future of mankind? Being introduced to our awareness for the very first time, human history, or even the history of a single country, appears as a welter of innumerable events. There is little hope, it seems, to sort out this chaotic conglomeration, or to foresee, with a sufficient degree of accuracy, further changes of elements which history combines.

That history is full of surprises is a common place, but as it has reached the late 20th Century, it has become quite favorable to unexpected turning points which have set off sharp changes so many nations have experienced. The rate of these changes is constantly accelerating. Partitions which some apparently powerful and stable federal states have undergone, the unpredictable totality of these crises, unprecedented expansion of unemployment, violent international conflicts, local wars and deterioration in the living conditions of millions of people, has social scientists and historians at a loss, let alone common citizens. What is the

enigma of this dramatic unrest? Was it possible to predict these sudden upheavals?

According to one view, activities of people, pursuing, as they are, their egoistic goals, are in principle unaccountable. Here is what Sergey Bulgakov wrote in the beginning of the 20th Century: 'Any historical individual is something absolutely new and completely unforeseeable in history. Sharply contrasted with natural sciences which deal with a certain quantity of elements and certain natural forces, history deal with a uncertain number of ever-emerging and ever-collapsing elements'. (10. P. 273). Hence, every member of society have nothing else to do but to keep to his own business and to set hopes upon a lucky chance, with no end amazing about history's inexhaustible caprices.

Path of history, destiny of every nation and every person, other scientists deem, are determined beforehand by the divine providence or inexorable fate. The score of every nation, and of every person's life is composed long in advance, to the effect that the mankind's lot is nothing but a meek obedience to divine predestinations allowing no deviation from religious dogmata. Astrology represents a version of this extreme determinism; that or another combination of heavenly bodies at the moment of one's birth or death is crucial in delineating one's behavior and character, and predestinates a pattern and a time of any occurrence or historical event. Either approach despite the apparent difference separating their basic arguments rests on a very similar principle: individual is unable to struggle forces of history, he is merely a chip floundering in its turbulent waves. Such suggestion virtually implies that Man should give up efforts of penetrating the mysteries of historical being, surrender his mind and will to the course of historical developments and their results, no matter if determined by the divine providence or some sort of cosmic influences.

The German philosopher Immanuel Kant supposed that the deeds of men are motivated by nature's regularities, and that 'human history in its entirety can be well regarded as the implementation of a secret plan designed by nature, with view to create the ideal political system, the single state in which nature can fully develop all inclinations it had granted to mankind'. (51. P. 65) In this interpretation, it is nature that turns

up the subject of history and its authentic creative force, while a human being is forced to follow obediently to its laws and 'secret plans'.

Marxism gives a more thorough interpretation of historical determinism. Georgy Plekhanov has exemplified an implacable fighter against the dualism, which recognized the spirit and the matter as the isolate, separate substances. 'Social patterns are designed in any given period by the condition of productive forces. Once the conditions of productive forces have been given, hence social patterns are given, as much as psychology type. Meanwhile the development of productive forces themselves is restricted by patterns of their surroundings.' (42. P. 192 — 193, 234).

As much as Marxism perceives history as the resultant force of various factors lying out of individual's sphere, it is possessed of a logic of a sort, and a coherent look. But this approach treats individual and society as objects, not as active subjects, of historical process. Humans and society are directed by some very plain regularities of the material world. And it is a product of the latter that human being, his conscienceness and psychology, are recognized to be. Human freedom of choice, as well as a success of personal historical activity, amounts to as much as a degree in realizing of and keeping to the objectively destined trajectory of historical progress. Treated like this, individual can play quite a limited part in history, while the crucial significance is ascribed to the masses and classes which are concerned with their own material interests and thus realize trends in the development of productive forces. What a bitter kind of fate Marxism bids fair for a creatively inclined person! He or she are reduced to a shadow, a screw to inexorably rotating historical machine every move of which is objectively predestinated by the surroundings, by the development of soulless productive forces.

Meanwhile, a monistic approach like this will always face defiance on a part of the active human nature. To dismiss it, the following arguments should be employed.

First, the fact that human beings are indeed products of the developing matter, and consequently cannot exist without and apart of the material world, and are forced to act and live with a constant regard for its regularities, does not rob his or her ability to conceive the world which

surrounds them, and to transfigure it according to their ideals and concerns. Thereby, man becomes the active subject, the creator of history, and history, in its turn, becomes the resultant force of many people's yearnings or deliberate acts. There is no history apart of the human consciousness.

Secondly, with every new step of historical development men increase their impact on natural surroundings, forming their own artificial surroundings and acquiring living and developmental standards adequate to their ambitions. This is true not only in regard of the material world alone, i.e. of means of production (which themselves are produced by men), consumer goods, energy sources, etc., but also of the historical legacy, cities, roads, works of art, books, scientific traditions, and religious beliefs. As he comes through adaptation to these artificial surroundings, starting from his childhood, and perceives them as his own historical treasure, man reserves or changes them to the degree of his abilities and strength, leaving his own, more or less marked trace in history.

Third, unlike the dynamics of the material world, rigidly predestinated by a whole number of objective regularities, the social developments allow for an individual freedom in making choice among several options. This freedom is restrained by conditions of outer space, historical heritage, and personal and social conflicts pursuing opposite interests and goals. Opportunities are few and far between during relatively stable periods, within inert developments, so that range of options looks like a folded fan. But this fan thrust open wide during turning periods, when the trajectory of historical dynamics begins to change, bringing about shifting towards the new stage, towards the civilization coming next. But while opportunities in making deliberate choice increase enormously, risk of failure grows, too, — a risk of making a bad choice, of losing the fight against alien social forces and individual wills. These periods are inevitably marked with the rising role of historical persons, that is of politicians, troop commanders, scientists, preachers, all those who realize a vast variety of alternatives, carrying the masses of people along with themselves to a certain goal.

The third point of view implies that the future of society is as much predictable as it is not. Freedom of choice, diversity of human activities,

conflictness of men's ambitions, fanciful acts they so often commit, are overlapped with effect produced by regularities ruling over social environment, thus enabling us to predict further trends in social development. In this point we are taking an inevitably closer step towards dualism, so sternly rejected by materialists. Human being is dualistic in itself, duplicity being essentially his nature. Human is a biosocial creature, housing two entangling and opposite selves. One is inherited from nature, or the material world, while the other, acquired during the course of social development and being deliberately worked out, gives a certain space for freedom of choice and purposeful activity. As they conflict, these two selves make up an internal spring of historical developments, serving both the premise and the measure of what single individuals and whole nations may achieve. The proportion of biological and social, the latter being a heritage left by the past and supplemented by will and labor of generations, change recurrently in a life cycle of any individual, any ethnos, and whole mankind. Men do create their history, but only within a scope of the 'fan' of alternatives, which are predestinated by regularities of natural and social development. The amplifier the awareness and the understanding of these regularities is, the closer man stands to the conscious and efficient choice which would enable him to discern desirable alternatives and eventually reach his purposes. The fact that social conditions sustain material changes usually serve as a mere indication that regularities and patterns with which they comply have changed themselves. And this is a third answer to be given for the immense enigma of history.

The eminent Russian scholar Nikolay Kondratieff highlighted three types of these patterns, identifying static, dynamic, and genetic types. (30. P. 221, 242, 275.)

The patterns of *statics* reveal structure, or inner and outer interrelations of a studied subject in the state of rest or steady equilibrium! motion. Every individual, every social class or nation exist in an inherited environment, forming strict proportions with other elements of society and incorporated within the settled framework of labor division. In order to function normally, the society needs clear proportions of people employed in material reproduction and those in spiritual one, of manual and

intellectual workers. Every sector needs a certain level of working skills and capital capacity, as well as appropriate production conditions. Disproportions entail crisis of social system.

The patterns of *social dynamics* come into view once the equilibrium has been broken, and proportions of elements and interelement links which constitute the system has been subject to radical shifts. Then, the critical change in motion trajectory is coming about. The uniformly evolutionary developments thus give way to the spasmodical revolutionary forms of dynamics. The understanding of these patterns is instrumental in discovering the essence and pre-conditions of crises which cause recurrent unrest in the life of society and its elements. It will also permit to take the most efficient, and the least wasteful, way out from these crises. Study of patterns of social dynamics aims at perceiving a certain order in what has seemed a turbulent and chaotic whirligig of social economic systems and their elements, in the kaleidoscope packed with events suddenly changing places, in recurrent outbursts of contradictions coming over from one country to another.

The patterns of sociodynamics are of the following groups. The first ones account for succession of changes in a certain social system, and for its undulatory fluctuations (such as the succession of crisis, depression, recovery, growth, sustained development, and once again crisis; or alteration of phases in a life cycle — origin, formation, rising, maturity, decrepitude, and dying). Other patterns indicate the resonance in which cycles of different length — long-term, middle-term, and short-term — interact along the vertical dimension. The third group of patterns express the way of interaction between systems of social development, either directly and indirectly related, — these of economics, research, technology, ecology, politics, culture and history, and so on. The emphasis of the fourth group is more specifically on regulating the stages and mechanisms of turning periods, breakpoints in social dynamics; taking in these type of patterns may be helpful for sizing up nature of a crisis and ways to overcome it in a more rigorous way.

The patterns of *social genetics* reflect the hereditary, mutation and selection mechanisms in dynamics of social systems. The initial concepts of social dynamics were laid down by Pitirim Sorokin and Nikolay

Kondratieff. Genetics is assumed to be the top of understanding, since the patterns it studies refer to the inner springs of self-development.

What are these genetic patterns? How much space, if any, do they leave for human freedom of choice, for human and social self-reliant activities? They are, in the first place, the patterns of *heredity*, something which preserves and transmits to future generations kernels of social genotype. These kernels contain a major substance — the essence of the human race. From the very first steps of their lives men inherit knowledge, skills, material wealth, spiritual values, technology, and political system. It is completely up to their choice whether they will own their heritage in such way as to preserve and enrich it, or will doom it to a nonsensical waste. Men cannot choose their heritage, but they are free in using it in best way they find.

The patterns of *mutation* demonstrate the limits to which hereditary invariant is changeable, and ways of how it can be enriched, or supplemented, by individual experience and handed down to future generations. Life of every man is changing all the time. Some of these changes are mere occurrences that fail to settle in a hereditary kernel, while others bring about a unfolding of possibilities laid down in the genotype of a social body with keeping to phases of a life cycle. The third ones convey reaction to essential shifts in environmental conditions, thus aiding adaptation. They win their place in the genotype, and can be handed down. Explosions of mutations and modifications are usually observed during transitional periods, at the time when a previous social system has exhausted all its potential, and a new system is coming to life. A vast majority of mutations soon proves useless or even harmful, and in this capacity is dismissed. But there are still some of these that manage to consolidate, as they join a hereditary kernel. That is the time when space for both individual freedom and free choice of the society expands so substantially that it becomes possible to review new approaches and to effect their evaluation and consolidation. Transitional period turns up an austere ordeal for human mind and ingenuity, testing his or her ability to give an adequate response to the challenge from the outer world.

The role of the human understanding and free choice becomes even more evident through the process of *selection*, evaluating and

consolidating progressive novelties in life of society. Since man has projected from the animal world, the implication is about the artificial selection and not the natural one. Yet even the artificial selection can be of two origins, — either resulted from a conscious and deliberate choice based upon certain criteria, or, on the other hand, from the blind whim of primordial social forces. Every new form of social and economic life must undergo a rigid trial, a viability test, before it becomes firmly established in its own field of human activity. It is man himself who acts as a chief examiner showing preference to either novelty, introducing them instead obsolete and inefficient elements.

Therefore, the fact that there *are* objective patterns regulating social and economic statics, dynamics, and genetics does not eliminate the free choice that every human, every society enjoy, nor does it deprive them of the responsibility for making a *reasonable and sensible* choice. It is always possible to give different response to the same challenge. A wrong response can aggravate crisis, induce a grave illness, and at times to entail lethal outcome for that or another social system.

Study of history, the understanding of the patterns which underlie social progress aid efficiency to the human activity, and through this to states, international bodies, and social movements. This knowledge is most important in passing well-considered decisions, and anticipating their potential consequences. History, much as any other science, serves as a tool of understanding and transforming the world. It affords anticipation on the consequences in which our thoughts and deeds result.

The introduced book is the translation made from the second edition called *The history of civilizations* (Vladar, Moscow, 1997), with a few amendments and abridgments. This edition has also been supplemented by the paper presented to the X Interdisciplinary conference 'The Way to the Partnership of Local Civilizations', held in May 1998.

In revising the book for the English edition, I have profited from valuable comments on the previous Russian editions made by my fellow-workers in the field of the cyclical theory, and I tender them my grateful acknowledgement. I would also like to thank my translators, Vladimir Wolfson and Natalya Chernyak, who have added much light and color to the original text. My big thanks are due to Miss Olga Shevchenko and Mr.

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CHAPTER ONE

THE THEORY OF HISTORICAL PROCESS

We shall precede our journey through the stages and crises of the past epochs with a short theoretical essay, in order to make full sense of what the philosophy of history is, — what we are guided by when periodizing historical epochs, what we mean by the terms 'world civilization' and 'local civilization', and how change in civilization come about.

1.1 Study of regularities of historical process.

The origins of the historical science. The sources of history go back to the dawn of mankind. Ever since the human conscience formed, there has been an urgent need to record major events and then transmit the lessons of life to future generations, — thus helping to preserve, and add to, the social genotype. Oral traditions deriving from real events have interlaced with myths and legends. These traditions have sometimes been put down in a literary form.

After the written language appeared, historical information was engraved on clay tables, on the walls of temples and pyramids, and on papyrus scrolls. This in such a way as to win a favor of priests and rulers.

The historical science, along with many others branches in knowledge, was commenced in Ancient Greece by the works of the first professional historian — Herodotus (A. D. 481— 425), whom Cicero called 'the father of history', and was continued by Thucydides (A. D. 460 — 390), and later on by Polithyus (A. D. 205 — 125); in Ancient Rome this science was developed by Titus Libyus, Tacitus, Plutarch and many others. Then treatises in many volumes came into being (*The Global History* by Polithyus was housed into 40 volumes), whose authors were guided by the wish to explain the events of the past, rather than by making a mere description of them. Their objectives were to reveal the inner logic and principles in the historical process, to make history instructive and useful for their contemporaries. The latter posture was articulated by Titus Libyus (B. C. 59 — A. D. 17). 'The reason why searching through the far away ages gains so much profit and reaps so much benefit, is that one can

observe there all sorts of instructive specimens taken in the framework of the magnificent whole, and it is the past where one should find what is to be imitated, and so much what is to avoided.' (23. P. 70) Then the time was ripe for the idea that the way the human history moves forward is due to some cyclical rotation, recurrence of the same stages, — the Chinese historian Ssu-ma Ch'ien (B. C. 145 — 86) maintained a look at the social history as the exclusive circle in his *Essays on History*.

The second major step to be taken in the formation of historical science was at the late 1st — beginning of the 2nd millennium AD. During this period religious view in history enjoyed complete domination. History was regarded as the realization of divine will. The Arab scholar Al-Beiruni (973 — 1050), one of the brightest historians of his time, created the theory of big historical cycles. Ibn Khaldun (1332 — 1406), the distinguished Arab scholar from Tunisia, contributed most significantly to the historical knowledge of his period by writing the treatise *The book of the object-lessons*, where he sets forth the philosophy of history, reflecting on the idea of historical cycles.

Later on? In the Enlightenment, the conception of the historical rotation was taken up by French scholar Vico. The Renaissance and Enlightenment produced scores of brilliant historians who possessed of an enormous historical material and set themselves the task of interpreting it not from religious grounds, but out of principles of historical development. It will probably be enough to mention the names of Bolin, Macchiavelli, Bruni, Gratius, Voltaire, Russo, Montesque, Condorcet, Karamzin, and Pogodin.

It is interesting that the first attempts to establish the genetical approach to history were made as long ago as at the end of the 18th Century — the German en-lightener Iohann Gottfried Herder (1744 — 1803) wrote in his work *The Ideas upon the Philosophy of History*. 'All human self in humanity is related with all circumstances of man existence; his upbringing is tied through the spiritual genesis with his parents, his teachers, and his friends, — it originates from the nation as a whole, and further so from the nation's ancestors... The upbringing of the human race is a genetic process as much as an organic one. It is, indeed, the genetic process due to the descending tradition; it is organic one due to the

adaptation and appliance of what has been descended.' (53, P. 51, 52). Herder refers to the 'Zones' — the tremendous transitions in the history of the earth and space, the epochs of a cosmic scale, inserted between uprisings and revolutions. (Ibid. P. 55). Herder insisted on these turning points making auspicious effect. 'We humans need these upheavals in the way smooth water needs waves to prevent the lake from becoming a marsh. The genius of humanity is constantly renewing its appearances, re-flourishing and once again recovering in life within nations, generations, and tribes'. (Ibid. P. 56).

A real upheaval that staggered the historical science came over in the mid-19th Century. It was determined by desire to reveal the regularities of historical progress, to shift wide the frames of this discipline, and to form closer links between history, philosophy, political economics, and archeology. The formation of a new look at the patterns of history originated from the works of G. W. F. Hegel, K. Marx, L. Morgan, F. Engels, A. Thierry, F. Guizot, A. Kant, G. Spencer, S. Solovyov, and N. Chernyhevsky. Much as these thinkers' concepts and approaches are diverse, it can still be said that it was the first time that in which the history of philosophy came into existence as a nomographical science.

One of the creators of the contemporary philosophy, George Willhelm Fri-driech Hegel (1770 — 1831) identified three kinds of historiography: the original, or the descriptive, history handed down by ancient historians, the reflective history providing an exposition of long-term developments of a country or mankind, and coupled with generalizations, abstractions, or critical analysis on works on historical science; the philosophical history which aid our ascertainment of the fact that reason is dominating over and throughout, and that the global historical development was moving forward consciously, with reason as its substance, infinite power, and absolute ultimate objective. (53. P. 70 — 77). The global history as seen by Hegel is 'the indication of the divine and absolute unfolding of the spirit in its utmost images', 'the expression of such a row of successions on the virtue of which the process of spirit substantiates its truths and achieves self-awareness. (Ibid., P. 78.) Since Nature is conspicuous for eternal rotation, 'only through changes in the spiritual life would the new come to reality.' (Ibid.) History commences

from a time when reasonableness begins to substantiate in the world, when law and state are coming into being' (Ibid. P. 83.)

The apotheosis of reason, treating it as an absolute power to guide the unfolding of global history which is to firmly establish itself in the enlightened state immensely enhances the significance of subjective factor in history, but at the same time objectivizes it by taking it beyond subjective aspirations of individuals, tearing it off the material and economic conditions under which society develops. Spirit grows to be the self-domination of the course historical development, a negation of negation, since 'the change which is a ruin, is at the same time the origins of a new life' — in transformed species. (Ibid. P. 94).

On the verges of the 19th — 20th Centuries the historical materialism (the Marxist historical school) brought forward the sociological thesis that the social dynamics is set in motion primarily due to the developing of productive forces.

The fact that Marxism contributed immensely to investment in historical process by putting analysis on a more objective base, in close connection with growth of productive forces and with economic relations should never be underestimated. Karl Marx offers a brilliant illustration of such approach in his review on the stages of industrial revolution and original capital accumulation. The same remark must be referred to Engels' essays on first steps of human society and on history of science, and Lenin's papers on trade and business developments in Russian rural communities. Marx's contribution to the philosophy of history was appreciated by the leader of the French historical school Fernand Braudel: The secret of Marx's genius, of power pertaining to his thought, is revealed from the fact that he was the first theoretician to design the real social models based in long-term historical perspective'. (52, P. 139) However, these models, as demonstrated by years which have passed by after that, set back the spiritual factors of historical progress, while exaggerating role of social conflicts. In the long run they have been entirely vulgarised by pseudo-Marxists to approach the ideological visions by which totalitarian regimes were obsessed. The philosophy of history in the Stalinist interpretation, as presented in his notorious *A Brief Course on the History of RCP (b)*, contains the utmost of this vulgarization. These

developments affected strongly historical thought not only in the USSR itself, but in many other countries, too.

The cyclical approach to historical process. However, a new approach to history was gaining strength. It was based on viewing history as a rotation of cycles of historical development, motivated by major changes in culture and science. Many minds approved the idea that cultural and historical types of local civilizations would be coming through the similar phases. Nikolay Yakovlevich Danilevsky was perhaps the first scholar to materialize this idea. His work *Russia and Europe: the look at the cultural and politic relations of the Slavs to the German-Roman world identifies* 11 aforementioned types of civilizations.

After Oswald Spengler's *Sunset of Europe* was first published in May 1918, a wide acclaim was won by the theory of analogous-structure, i.e. coming through the same strages, cycles in the development of different civilization. He discovered much likeness between stages of formation of the Indian (Egyptian), ancient, Arab, and Western cultures, as he brought them together in his diagrams. It is Spengler to whom we owe the idea of the polycyclicism of historical process. 'Every culture, every earlier stage, every rise and decline, any of culture's essential levels and periods hold their pre-determined continuity, always equal, always recurring regularly to the effect of a symbol, — he writes. — What is the meaning of the 50-years periods standing out so notably against the rhythmic formation of political, spiritual, and creative development? Or, for that matter, what is the true meaning of three hundred years of baroque, Gothic, great mathematics, Attic plastic arts, mosaic arts, counterpoint, Galileo's mechanics? What is the meaning of the ideal continuity of life for every culture ammounting to as much as millennium?' (57. P. 55) Spengler denied, though, anything that stages of global history might have in common, considering a life cycle of every cultural historical type as something isolated and self-dominating.

Nikolay Berdyayev was among those who pointed out the existence of a phasic life cycle in every nation's destiny. 'Destinies of all nations, societies, and cultures in history, taken together, demonstrate that all of them come through the same different periods — these of origins, childhood, maturing, golden age, and then these of the old age,

decrepitude, fading, and finally, death. All great national cultures were subject to this process of perpetual decrepitude and dying.' (6, p. 151).

The most thorough research in the theory of rotation ever since had come to be was undertaken in the works of the well-known British historian Arnold Toynbee who identified in his 12-volume *Study of History* 21 exclusive civilizations, *each of them developing through the stages of genesis, growth, decay, and, finally, destruction*, to make way to a successor. The emergence of earlier civilization dates back, by Toynbee's reckoning, as far as 6 thousand years. Besides, he identified 4 'links' connecting three cultural generations each. These links constitute parallel, though sometimes intercrossing and development: Minoan — Helladic — Western? Minoan — Helladic — Orthodox, Minoan — Syrian — Islamic; Sumer — Hindu — Hinduist. The civilizations were dynamic, evolutionary-type structures with different destinies, — fourteen of them collapsed, as they had turned their pace backwards. (50. P. 86, 87). While human activity is determined, in its better part, by nature's patterns and cycles, by historical heritage, by an environment, both social and natural, and thereby historical processes are regular motions that attain much the same character in recurrent analogous situations, it will always remain the human prerogative that a certain freedom of choice, and hence the responsibility before future generations, will make man to design a variety of alternatives. 'We humans are endowed with a free choice, and we are not to transfer the weight of responsibility on God or Nature. We should take it to our own. That is for us to decide'. (51. P. 40). And if there is any reason for us to study history, it is to be able to solve its riddles and puzzles. 'And although some of these puzzles do not seem to be readily solved, in fact they are just telling us, quite openly, something what we should have known better. They are telling us that our future depends upon ourselves. We are not just hostages of the inexorable fate.' (Ibid., P. 41).

Toynbee's ideas were taken over and developed by Lev Gumilyov in his numerous writings on history and ethnology. In his vast research into the life cycles of about 40 individual ethnoses Gumilyov deduced a curve of ethnogenesis which lasts for 1, 500 years and includes the following successive phases: incubation (the period when a new ethnos is formed); 'passionary' rise; acmatic phase; fracture (rupture); inertia; obscuration;

degeneration; dereliction. The phases are identified by number and effectiveness of passionaries — vigorous, unresigned persons. Yet the very emergence of those is invariably drawn from the clots of cosmic energy, whereupon original source of historical progress is set exterior to man. (18. P. 328).

There is still another way of looking at history as the cyclical dynamics of society. It is associated with the names of Alexander Chizhevsky, Nikolay Kondratieff, Pitirim Sorokin, and Josef Schumpeter.

In the March 1918 Alexander Chizhevsky his Ph. D. Theses on the global history, called *The Research of Periodical Alternation in the Global Historical Development*. It contained argument for the cyclicism to which historical dynamics is given, due to fluctuations of the solar activity. In 1924 he published the essay *Physical Factors of Historical Progress*.

Kondratieffs theory, — big cycles of economic situation, — was first brought out in a detailed exposition in 1925. The work treats the undulating dynamics in the capitalist markets. (29. P. 47, 55, 156, 157). The long-term fluctuations of economic situation are paralleled with technical progress and innovations, with manufacturing technique and political life. The periods of the 'raising' waves provide a deal more of social unrest and transformation, such as wars and revolutions, than the 'lowering' ones do. Since that, it is not just economics that these fluctuations comprise, but rather the entire range of the oscillatory and undulatory movements indicating the course of historical progress. The understanding of the regularities of cyclical dynamics enhances competence in predicting crises. It affords anticipating general trends which may entail either growth or decrease of the national economy, and other trends, as those existing in price variations, or structural changes in economy. It can forecast the ripening of revolutionary movements and international dislocations. The theory of cycles was cited as an effective tool for social and economic foresight.

Kondratieffs basic views were statistically validated and then developed by the great Austrian-American economist Josef Schumpeter, whose fundamental 2-volume work *Economic Cycles* came out in 1939. Having brought out the correlation existing between development of short-term, middle-term and long-term undulate fluctuations in economic

dynamics, Schumpeter assigns the nature of these fluctuations to waves of innovations comprising, in his view, apart of inventions in engineering and technical improvements, changes in requirements, demand, fashion, organizational forms, i. e, main factors of historical progress.

The fundamental study of cyclical social dynamics, covering over 2 milleniums, was undertaken by Pitirim Sorokin in his 4-volume *Social and Cultural Dynamics* (1937 – 1941). The main of sociocultural dynamics in Sorokin's concept is a partition of some dominant cultural supersystem. Speaking of cultural crises, he prognosticated as follows: 'not only will wars and revolutions survive, but they will reach an immense magnitude in the 20th Century, growing to be more inexorable and timorous than ever. Democracies are falling into decay, yielding ground to tyranny in all its species, while cultural creativity is fading away and dying'. In Sorokin's opinion, the contemporary crisis have simultaneously affected all major institutions of the Western culture and society, for this is the crisis of art, science, philosophy, religion, law, morals, style of life and ethics, any form of social, political and economic life. 'The crisis is to be found in the breakup of basic forms of the Western culture and society in the last four centuries.' (48, P. 427, 429).

Pitirim Sorokin outlined the perspective of transition towards a new integral social and cultural order. (47)

Karl Jaspers (1883 — 1969), the distinguished German historian and philosopher, brought out perhaps the most remarkable research of the philosophy of history ever since the World War II in his *Sources of History and Its Goal*. While dating the beginnings of historical time back to 3, 000 B. C., Jaspers emphasized upon 'the axial time' — the period when a creature whom we use to mean by the term 'contemporary man', together with all his intellectual capacity, originated. 'This axis should be referred perhaps to a period of time about 500 B. C., — indeed, to the spiritual process which came about between 800 and 200 B. C.. It was the time that launched the most radical turn ever known in history. The type of man which appeared during this period is the same type we know of today. For the sake of brevity we will identify this time as 'the axial time'. It is in this epoch that main elements of conscienceness which saturate our thinking today emerged, the global religions set, — same ones that

exercise influence upon the human life today. The transit to universalism is vividly seen in every direction. All these changes in the human existence perhaps deserve to be called 'spiritualization': an original edifice of life begins to stagger, and the peace of polarities makes way to the unrest today 'reason' and 'person'. The axial time seems to shed light on the whole history of mankind, doing that in such a way as to afford making out something which looks very much like the structure of global history. What have come into being since then, what have been created and thought over during this time, is what mankind has been living up to till the present'. (6. P. 32 — 35, 37, 39.) Through this guidance Jaspers designed a new scheme of history, dividing prehistory and history into periods.

A significant stage in developing the philosophy of history is associated with the French historical school 'Annales' headed by Marc Bloque and Lucien Fevre. They hold peculiar concern with the quantitative part of history, conducting studies of demographic statistics and cyclical alteration in prices. Their analyses fully demonstrated a connection that major historical events constitute with cyclical crises of foodstuff and recurrent demographic recessions. They also unveiled various types of cycles in the business trend of Europe, these of centuries-old, centennial, decennial, annual, and seasonnal fluctuations within one year. These discoveries contributed substantially to promoting interdisciplinary researches into the patterns of historical process.

The most resultant direction in these researches is manifest in the works of the outstanding French post-war historian Fernand Braudel, and most particularly in his 3-volume *The Material Civilization, Economics, and Capitalism. The 15th — 18th Centuries*, published originally in Russian translation in 1986 — 1992.

In his treatment of the spacial aspect of historical process, Braudel distinguishes the global economy that embraces the entire earth population, and the world-economy, an economically independent part of the globe, representing, due to some internal relations and trade, a certain organic unity. This fully corresponds with the understanding of the global and local civilizations about to be offered in this book. The world-economy is distinctively delineated space with a pole of big city in its

core, and neighboring and distant outlying districts. Hence the space of the world-economy stands out as a sum of hierarchized individual economies of different wealth and potential that keeps the whole complex functioning. 'The history of the world is a cortege, a procession, a co-existence of production methods that we are inclined to deal with in a certain order, in conjunction with successive stages of history. Indeed, these production methods are coupled to each other. The most advanced ones depend on those that are behind all and vice versa, hence progress is always the opposite side of a feeble development'. The oscillations of historical progress unfold throughout time in the same manner in which they unfold throughout space. They set the tunes of the economic conjuncture to which conform market conditions, political and demographic situations, self-identity and collective thought, crime, art schools that succeed each other, trends in literature and vogue. Apart of seasonal fluctuations, there are cycles of various length to be observed: three-four years cycles, cycles of 6-8 years long; inter-cycles, or inter-decadal cycles 6-8 years long; semi-centennial Kondratieff's cycles; centennial trend 150-300 years long. The most significant conclusion to which Braudel have come up is perhaps that deep waves of history show the tendency to slow reduction. (9. V. 3. P. 14, 18, 65, 67, 72 — 73).

Interest to the historical regularities of cyclical development was evidently regaining grounds throughout the last third of the 20th Century, on the eve of the culmination in the trajectory of historical dynamics and the overall global crisis. Thus came a period of pursuit for what have caused the global crisis to be burst upon the economy and ecology at the beginning of seventies. The social scientists once again turned their attention towards Schumpeter — Kondratieff theories of long-term fluctuations. The beginning of this turn was originated by *A Technological Stalemate — Innovations Overcoming Depression*. (1975), a book by H. Mensch. There was a flow of monographs and articles dealing with concept of 'long waves' in economy and social development. Hot discussions over these issues were held at the international scientific conferences (Italy, 1984; Weimar, 1985; Montpellier, 1987; Novosibirsk, 1988) conducted by the International Research Institute of the Applied Systemic Analyses, and at the International Science Conference devoted to

Kondratieff 100-anniversary (Moscow, St.Petersburg, 1992). The latter conference set definitions on the basic principle of the theory of recurrent changes in civilizations in Russia and throughout the world, and the formation of post-industrial civilization.

The II International Kondratieff conference (Saint-Petersburg, March 1995) put forward hypotheses on historical supercycles which embrace the totality of kindred global civilizations, and on the phases of historical process. Discussions were held on the transformation of society in the transitional period — a predecessor of the postindustrial civilization. The III International Kondratieff conference (Kostroma, May 1998) highlighted the problems of social cultural dynamics and the future of local civilizations.

Every major turn in history provokes a large amount of published writings indicating the thinkers' intense efforts aimed to find solution for issues to be raised presently. Thus have appeared a large series of works dealing with the problems of the long-wave and cyclical social dynamics. Those worth mentioning are the monographs by van Dujn (1983), A. Kleiknecht (1987), A. I. Anchishkin (1986), V.V. Vassilyeva, I. P. Yakovlev and I. N. Barygin (1992). Some works on cyclical social dynamics belong to the author of this textbook. (59 — 69, 71).

I. M. Diakonoff's monograph *The Course of History from the Ancient Man to Our Epoch* (1994) marked an important stage in creating the new look at philosophy of history. Criticising the traditional theory of social and economic formations (22. P. 6 — 8) in his adventurous journey of a philosophical discourse over historical progress, I. M. Diakonoff comes up with his own idea about succession of phases in historical development. Phases are separated by transitional periods of various duration — 'the phasic transits', (Ibid., P. 14). Eight phases are given identity, all of them complying with the principles of the exponential acceleration; the primordial phase (dating from the emergence of *Homo Sapiens* till the Neolithic age — about 30 thousand years); the primitive communal phase (about 7 thousand years); earlier antiquity; imperial antiquity (about 1,5 thousand years); Middle Ages (about thousand years); the stability and absolutism of post-mediaeval period (about 300 years); the capitalist phase (little more than 100 years)? And the current

post-capitalist period to be succeeded by the new ninth less intense at the turn of nineties, the deep crisis in Russia has presented a new stimulus for studies of periodicizing cyclical social dynamics. There is no accident, in that: critical epochs force re-appraisal of the theoretical legacy, together with an intense quest for new ideas and hypotheses to account for a current split in history and to give the trustworthy highlights for coming through the crisis and anticipating the future. This is explained not only by the logic of developments in science which is cyclically structured itself, in what it moves from the rise towards the crisis, and then to the new crisis as it gains from the cluster of 'wild ideas', but in so much by the powerful need for nations and leaders to make full sense of what have caused the current tragic period in history, to choose the right path in order to overcome both the national or the global crisis, and to transfer to a new coil of historical progress.

It follows from this that the historical science, so much as other complexes of social disciplines, has undergone the harsh crisis. In fact, it has faced the onset of radical change and re-appraisal of scientific truths to result into a new picture of the past, to alter the regularities and stages of cyclical dynamics and genetics of mankind. To the extent available in society overtaken by dashing changes, and to our representations about this society, this textbook is designed to anticipate some of the regularities which will pertain to this new view of looking at the past.

If there is any discipline that has been suffered the most severe setback in the course of the crisis in social science, it is unquestionably the philosophy of history. This setback has much to do with the collapse of paradigm and general crisis of scientific outlook. One can observe an increasing number of articles announcing history nonsensical, and that it is unable to offer the guidelines to suite the whole of mankind. The American historian Francis Fukuyama announced in his scandalous paper that the victory the Western liberal democracy has won over fascism and contemporary Marxism heralds 'the end of history proper, finalizing ideological evolution of mankind and universalizing the liberal democracy of the West as an ultimate system of rule'. (53, P. 291). Above all, this declaration is just an open recognition of the crisis in which the Western philosophy of history stands. It is obviously prepared to surrender before

the new turn in global history and before the unrest and renewal in thought which this turn stimulates. To recognize 'the end of history' is to terminate the struggle for existence, which is something Fukuyama himself is forced to admit: 'The end of history is sad. Fight for acceptance, endeavor to risk life for a purely abstract idea, ideological war involving courage and commitment are going to be replaced by economic growth, innumerable technical problems, ecological safety, and satisfying of most sophisticated demands. Philosophy and art do not pertain to post-history. Instead there is a museum of human history to be perfectly encompassed by care.' Fortunately, a stark prognosis like this will never come true. The history can have no end, not until mankind becomes extinct from the Earth. And as much inevitably science crises recurs, along with radical shifts in understanding and penetrating into regularities of social development.

The pyramid of the historical sciences. Taking advantage of this brief reference to the past of historical thought will make it easier to tackle again the problem of giving definition to the subject of historical science. Without any claim for accuracy and precision, let me define it as a study in some regulated order of the past of nations, people, all mankind, variety of social activities. This study brings out regularities and tendencies guiding historical development in order to understand the present and to have better grounds for anticipating the future (which virtually goes beyond history proper, constituting subject for another science — prognostics). Since society is a multi-dimensional unity, the historical science involves a set of kindred branches, on the whole representing the pyramid of a sort. (F. 1). One side of this pyramid comprises the history of countries and nations, or, more generally, the history of continents (Europe, Asia, Africa, America), and the global history that deals with main periods in the human development. Its other side embraces the history of peculiar trends in the human activity, such as science, technology, economy, politics, state and legal systems, wars, culture, education, ethics, religion, etc. A number of disciplines concentrating on specific methods of historical understanding – such as historiography, ethnography, archeography, source study, historical statistics, modelling of the historical processes, etc., constitutes the third side, while on the pyramid's apex, above all other disciplines, rests the theory of historical

progress, its general trends and patterns, methodology of historical study, etc.

Any historical discipline is linked with kindred social sciences. National history is related with geography. History of peculiar trends of activities is always coupled with correspondent disciplines of knowledge. The methods of historical investigation are in close contact with the theory of statistics. The philosophy of history, the subject of this textbook, is intensely related to philosophy proper, political economy, sociology, and the theories of cyclical dynamics and socio-genetics.

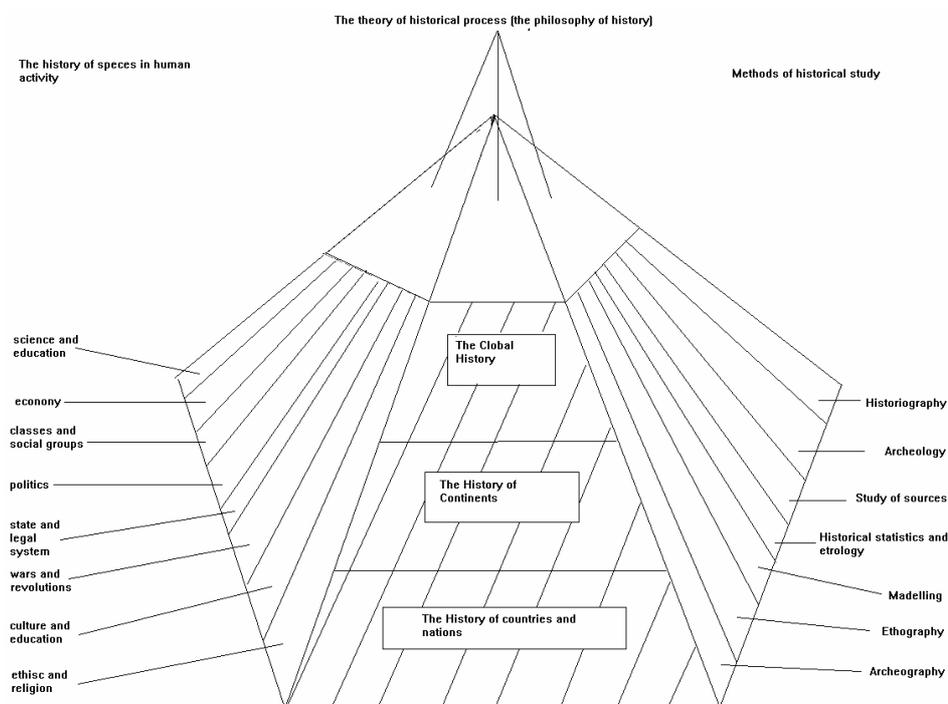


Figure 1. The pyramid of historical sciences

1.2 Criteria for peridiocisation of history.

Classifications of historical stages. Many ways may be employed for periodicization of history and to classify stages of history in some system. Archeologists set distinction between epochs with regard to the type of basic materials used in making labor implements — hence they identify the Stone Age (to which they refer paleolithic, mesolithic, and neolithic), succeeded by the Brazen-Stone, the Bronze Age, and the Iron Age. Some evidences are observable in the contemporary age indicating the transition going on from the epoch of iron and its derivative components (steel and alloys) towards the age of composites, ceramics, and artificial materials. Whatever this sort of classification were lucid, obvious and fit in use, it fails to respond whether can or cannot basic materials be applicable as a matter of distinction into diverse social dynamics.

Lewis Henry Morgan, and Friedrich Engels after him, identified the three major stages in history: savagery (natural appropriation), barbarism (agriculture and cattle rearing), and civilization (raise of industry). In doing so, they took into consideration the aggregate of family, social and economic relations. The history of class society was divided into slave-owning system, feudalism, and capitalism.

Karl Marx, and a long row of Marxist historians that followed him, has based their classification of history on the forms of property, which, as they succeed each other, determine development of the classes and state. This criterion served as a chief principle in designing the conception of successive social and economic formation. The continuous period when social appropriation in its primordial form dominated was followed by the epochs marked with the domination of private property that took successive forms of slave-owning, feudalism, and capitalism, and with the growing economic independence of manufacturer (the slave was succeeded by the serf, and the latter gave way to the free waged that of socialist form coming first, and eventually to communist one to which no succession whatever is presupposed, inasmuch it manifests the ultimate point of the process. Since forms of property determine relations of production, and the human spirit and culture are looked at as a fragile 'superstructure'— in fact, an additional storey, — over this basis, and since productive forces, including human labor force proper and means of

production through which it operates, make up the base of social dynamics, hence the conception of 'three-storeyed' social dynamics has coherence of a sort. The internal springs regulating transit from one epoch to another are concealed in productive forces, but the leading criteria of identity is at any rate based on the forms of property over means of production and human labor.

The Marxist approach to periodicization of history was universally prevalent and accepted throughout social sciences and most of the textbooks on history during the 20th Century. In the end of the century, this concordant edifice, however, has revealed several cracks. It has somehow become evident that public property, — most particularly, in its state-owned, socialist, form, — is by no means the utmost, let alone the last one, stage in the development of appropriation, nor is it so in the development of means of production. For the public property alienates man from working conditions and labor results, diminishes his initiative and personal concern, reducing the worker to a screw role at the gigantic machine of state bureaucracy, to an employee obedient to the will of its ever-expanding organization. The time was ripe for the Renaissance of private property, individual appropriation, small businesses, and market competition. The process of detatization — denationalisation — has currently' got underway. As the totalitarian regimes have ruined everywhere, the society sets itself free from the excessive and imposing guardianship exercised by the state bureaucracy. This can less stand for the return of capitalism than for just a new turn in historical spiral. A new society is emerging, one that was once called post-industrial. Nevertheless, it is unlikely to be the last or ultimate one to be expected.

Besides, forms of appropriation proper? As much as successive modes of production and tools, are no causes but consequences of progress. They express stages in human understanding and human taming of the world. As new approaches and theories are put forward, and old ones, formerly dismissed and abandoned, are given the second birth, doubt and criticism are increasing about the patterns that Marxism offers for periodicization of social history and its future.

Ariadne's thread in the maze of historical events. Attempts to find a guiding thread — *Ariadne's thread* — in the maze of historical entangles

and theories that explain them will lead us back to the question from which we started moving — what is, then, this something in the human nature that discriminate man and society from the environment? Which of the human properties pertains to the very essence of humanity, enabling man to fulfil his historical function?

That man is a *biosocial* creature is unquestionably accepted. In his genetical kernel initial, if contrary, selves of human are fused in the unbroken unity. The biological self relates man with the environmental, natural and material world, all the way to its top — the live nature, with its essential patterns of cyclical dynamics and genetics, mutation, selection, succession of generations.

Distinctions become more obvious where the human mind is concerned, in the abundancy of its functions. Then how do these functions indicate themselves? First indication is capacity to realize (which starts off from being empirical first, then moving to be more abstract) the essences of phenomena and processes, in other words, structural principles and dynamical patterns of the world around and man himself, — the capacity that furthermore comes to be both the contents of the multi-branch ramified fork of sciences and groundwork for deliberate use of knowledges and practical wisdom accumulated through the link of generations. The practical results are always testifying to or against the validity of what is known, mending, adding, and encriching the accumulated sum of human understanding. The artificial nature man has been creating throughout milleniums of his history virtually embodies materialization of human thought, reason and understanding. This is true as being applied not only to natural materials transformed by man's efforts, or to technical systems developed, or accumulated technologicak resources, production buildings, palaces, temples, roads, channels, works of art, but also to commodity, money, exchanges, banks, forms of property, market institutions, social and political structures, official bodies and poltical structures.

Karl Marx himself was among those who recognized the primacy of human knowledge. 'Nature does not build engines, locomotives, and railroads, eclectic telegraph... All these are the products of human labor, the natural material transformed to be the organ of human will that is

reigning in nature, or the organ of human activities in nature. All these are *the attributes of human mind, produced by means of human labor*, the substantiated strength of knowledge. The growth of stock capital illustrates the extent to which... the conditions of social organic developments are controlled by, and transformed to fit overall intelligence'. (34. Vol. 46, part 2, P. 215) This acknowledgement, however, was not published in German language until 1939, and its first appearance in Russian happened as long ago as in 1969. Periodicizing history on Marxist terms was approached with quite another quotation from Marx: 'Modes of production of the material life guide the course of social, political and cultural developments. It is not consciousness of men that determines their being, but, on the contrary, it is social being that determines their consciousness. On due stages of their development material productive forces face antagonism of existing relations of production... Initiated by the change in economic basis, sooner or later comes about the overturn in the enormous whole of superstructure. (Ibid., Vol. 13. P. 7). This certainly places privilege with reproduction of material goods, leaving spirituality to play a passive and obedient role.

The second way for human mind, intelligence to manifest itself is to evaluate the external world and the outcome of one's own individual activity through *aesthetical* terms. This implies the awareness of harmony and beauty, exercising influence upon the multiple forms of art and culture in the narrow sense of the word (in the broader sense the word 'culture' embraces all results of human activity, including science and products of labor). The aesthetical manner of understanding the world, profoundly intuitive and unwelcome to science logic, originates the majority of arts. Aesthetical emotions are quite important while carrying out religious rites and folk ceremonies, they enrich the interior world of man. Harmony is one of nature's essential qualities, and that of all living creatures, to which pallet of plants and flowers, plumage of birds serve as a remarkable illustration. Aesthetical awareness, appraising and appreciating the beauty, together with everlasting yearning and pursuit for it, is the property that solely a rational creature is able to enjoy.

Third, human mind reveals itself through *ethical* systems, codes of moral beliefs with which men control their behavior while contacting

other people. No one will doubt the fact that rules of behavior, some of them quite sophisticated, do also exist in ant-hill, beehive, wolf pack or birds flock; these are survival traits preserved due to the work of instincts and conditioned reflexes to help animal species in their ferocious struggle for their genus to be continued. However, human being is the only living creature to be aware of oneself, to disconnect, to discriminate oneself, one's own specific peculiarity and self-value from the others of his kind, from milieu. Human being is also characterised for his being able to perceive personal responsibility before other people who in their turn must comply with the same patterns lest the mutual contacts should be impossible. Thus it is moral rules that stand as regularities of the human behavior.

Every person must come all the way through the self-awareness to conceive one's own individuality, to learn moral rules, behavioral standards in family and society, which finally culminates in approving ethics of mutual assistance. These rules and standards gave birth to the rules of law some 5, 000 years ago, together with a peculiar pattern designed to maintain and provide their observance, — the state. Like many others products of human mind, these inventions have been grabbed by a certain part of society to claim their being self-dominant and primary, thus imposing rules of behavior on majority.

The fourth property that separates man from the rest of animal world is his capacity of having ideals and setting purposes, generalized in ideology, — a system of outlook attributing objectives and reasons in human multiple activities, determining manner of people's treating each other, making them join political parties, social groups, and science communities, as well as those of collectors, bear admirers and whatever. Religious tenets, in their specific way, adopt the system of values upon which ideology is usually based. Self-restraint, risking life and sacrifice are the merits frequently displayed by man while pursuing his ideals.

And finally, the world of spiritual values includes *education*, — methods to hand down accumulated number of knowledge, experience, aesthetical appraisals, ethical rules, ideals and purposes to future generations. Handing down experience is among animal features, too, — she-bear gives lessons to bear-cub during first two years of the latter's life,

and birds have their training periods last for a few weeks or months. These traits are based on instincts. It is quite different with humans: a period of study takes about 1.5 — 2 decades, starting from initial knowledge acquired through a family, and finalizing at one's graduating school, college or university. Yet adding to and renewing one's experience and knowledge is lasting throughout one's life. Education has developed to an independent social institution, a specific industry, but in the same time it has come to be a way to reproduce elements of the spiritual world, and to force gradual ascending of mankind to the summits of culture and intellect. For all that, a part of human experience, skills, knowledges, rules is always lost, 'washed off out of its turning obsolete and needless, with the spiritual development simultaneously acquiring rapid acceleration, as it comes to a more complex and diverse state, absorbing experience of new generations.

Logics of historical process. The rich and contradictory world, both cultural and material, created by man, is changing all the while and forming *the logic of historical process*. What are, then, the criteria to be set for periodicizing hisi-tory, for distinguishing and identifying its phases and stages?

Apparently no easy answer can be given to this question, at any rate not that one that could be deduced from above speculations. This question often entails another one — what is primary — the being or the conscience, the matter or the spirit? Answering it set the distinction between a variety of philosophical school and ideological dogmatm throught the centuries, provoking them to argue ferociously against each other. There are two polar options given. First: the entire world, including man and his destiny, are the creations of the absolute and external spirit, God, or any other supreme subject. Everything is predestinated by the divine providence. Then it is idealism. The second extreme answer is that the matter and the being is prior, man just reflecting changes that occur in the external world, following them, transfiguring them more or less efficiently as he pursues his goals, of which roots, again, ought to be traced in the being. Then it is materialism. The extremes meet; in both cases man stands for the object, and not the subject of historical process; hence, the criteria for its periodicizing are set outside man.

It is of course true, as far as sources of human origin involved, that human mind, and so much with it man himself in the aggregate of elements laid in his hereditary kernel, is a result, an outcome, an ultimate consequence of the developing matter which indeed is primary, in this very sense. There can be no consciousness apart or without brain, and brain is the aggregate of neurons arranged in exceptionally complicated manner. Nevertheless, after he is torn away off umbilical cord of mother-nature that gave him birth, man gains a destiny of his own, for since now and on he falls under the regularities of social statics, dynamics and genetics, not exactly in a manner of compliance or obedience, but trying to understand them and taking use of them. Since then it is only a trait that separates man from the rest of the world that matters and becomes essential, primary, — and that is a capacity to understand the external world and himself, to act out of his own concerns and representations of whatever it were that regulates this world.

It is however worth reminding that a degree of understanding, aesthathical values, ethical ideas, educational levels are different with many people and their groups, — their interests often have little in common, and thus the course of historical progress is usually a thorny and winding path.

That is how Roman historian Gaius Sallust Krisp described (in the 1st Century B. C.) a conflict in the yearnings of spirit and flesh: 'All our substance is divided into body and spirit. The spirit usually rules, the body serves and obeys; we share possession of the spirit with dogs, and that of the body we share with beasts.' (23, P. 35) The spiritual and corporal selves can never exist separately. But they do develop independently, each according to the patterns of its own, though still linked together through the succession of phases in human life. Human appearance, the physiological patterns of humans as biological species have sustained quite insignificant changes. But how much dignity, how many merits the spiritual world of humans have gained so far, and especially the world of his knowledge, skills, methods of transferring it through education! The articles of the material world, those created by modern man and used in manufacture and life, have come a substantial distance from the primitive tools of labor and unfastidious home appointments existing in ancient Athenes, Egypt or Rome to grow both in number and in quality.

What *the principal historical tendency* (that often can be spoken of as the most general regularity in human development) reveals is that as long as man moves off the sources of Homo Sapiens, the spirituality grows to be increasingly important in society and determining its dynamics. The amount of the *material* wealth resulted from man's transforming natural objects is growing just as quick as that; yet they represent the materialized strength of human knowledge, or, to put it another way, the results of spiritual development in its extended reproduction. But the progress of society never forms a direct, or an exponential line. Ascending to the next stage in dynamics of the spiritual reproduction always is shapen in zigzags, and once at a time the entire layers of cultural legacy vanish. But these zigzags, these deviations from the main traffic fail to overshadow the general upward tendency of the human spirituality, and in particular of its scientific impart. It fails to overshadow the development of spirituality exercising growing influence upon human life and human dynamics, — the process that however does not loose ties connecting the spirit with the material being and the environment.

All wealth belonging to the material and spiritual world of man has resulted from his own labor, his own development. It is not something granted by a will of any divine or other-planet being. Courage and understanding are both essential to gave up hopes about any sort of supreme interference and blaming them for one's own failures, errors, tragedies. History is the chronicle of self-development of society, including its victories and defeats, successes and troubles, — of a hard movement up the steps of historical progress. It is in one's own sense and experience, in one's own commitment and will, in the development of the spiritual and the material worlds which were created by the human mind, that man has to see the causes and stages of historical progress, of rises and falls in the history of peoples and all mankind.

A new approach to criteria for periodicization of history. First of all, it is necessary to dispose of one wide-held view about the logic of historical progress, one that proposes formation of every new stage in the development of material productive forces be recognized as an initial incentive to stir transit towards next historical epoch, which formation

covers means of production (tools and objects of labor, power sources, technologies, and natural processes involved to production), and indicates the achieved level of human sense, understanding, skills, and human purposeful energy. Man is assumed to be the most important productive force, and deemed as a set of demands, skills, ambitions, will. Demands, which are as yet unresponded, force man to mobilize his sense in working hard to transfigure the environment. They make him wish to acquire new knowledge and to realize the necessity to be active. A spasmodic increase of consumer demand, typical for every new generation, passes a powerful impulse for most complete response to be given, taking advantage of radical transformations in the material and the spiritual reproduction, forms of property, and social and political systems.

Relations of production though undeniably play quite an important role in society, fail to serve as single and crucial criteria for periodicizing historical epochs. Modes to appropriate means and results of production, as well as their succession, do not depend upon how much they satisfy ever-growing human demand. Changes that made the real differences in history of mankind have taken place only because people managed to realize how urgently they had been in need for them, thus effecting them deliberately, as far as their understanding was. Therefore, transformation in consciousness preceded transformations that occurred in the spiritual reproduction, forms of property, and social and political systems.

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Periodicizing history on a basis of successive forms of property is far from being perfect. We stand in need of new approaches in this discipline.

The approach to be discussed below gives primacy to spiritual and social factors in humanity's moving through epochs, to human deliberate demands which both induce men to take in new knowledges and skills, to transform the environment, to carry out manufacture and trade in material goods and services, to alternate ways in which to appropriate means and results of production, to alter forms of social and political relations, rules and regulations of law. It is, however, an unsteady movement, with crises alternating breakthroughs, with periods of relatively smooth and evolutionary development succeeded by those that put certain countries in the foreground of history. An immense flight of human spirit is just the value due to which leaders gain honor, turbulent work of intellect being their real power. This work does not go to slack down unless it has affected all regions of society.

On its reaching the top of every level, society plunges into relapse. Technological systems and economic patterns, which have exhausted their potential, are no longer able to satisfy growing demand. Elites in power attempt to settle these contradictions by taking use of the outer sources or by conquering alien territories, which only maintains militarism, forcing young workers distract from productive labor, as their majority never is back for work at plants and factories. This only deepens premises of crisis and stimulates stagnation. Sooner or later crisis bursts upon society, inevitably destroying and evaporating part of social productive forces, and causing degradation in its technology and morals. But at the same time seeds are ripening for a new growth, expecting their time to corn up.

1.3. Historical cycles.

The concept of historical cycles. All natural and social developments are characterized for cyclicism, all of them being regularly-uneven, all coming through similar phases. In Ancient Hellas, where the concept of historical cycles began, these cycles were approached as a rotation, a motion along *an exclusive* circle, recurring to the starting points. But later on viewing historical cycle as a spiral became predominant, to the effect that analogous, but yet different phases re-iterate in their onward movement, indicating the wave-like progressive march of history. The latter sense is that in which we use the word 'cycle' throughout these pages.

The theory of cycles counts dozens of volumes in various regions. The existence of demographical, economic, scientific, technical, inventional, innovational cycles, and those in politics, culture, education, etc., is now readily recognized. Each of these refers to uneven dynamics characteristic of variety of social life, each makes itself felt by means of a specific rhythmic system, and interacts with cycles in adjacent spheres. As our investigation goes, we shall deal with the cycles in social history (historical cycles), which are the resultants of dynamics in different areas of social life.

Historical cycles refer to the rhythmical re-iteration of historical process of mankind as unified entity, as well as of single continents, countries, nations, ethno-. ses, and regions. What we are trying to discuss here is not some sides in a life of somehow selected objects or subjects of historical development, but their combined interaction which originates the new quality, — the rate (rhythm) of social development, — which in its turn puts impact on any of the specific cyclical processes mentioned above. In the same time historical cycles themselves are closely affected by natural processes causing the death of many a local civilizations or altered their destiny dramatically.

Every nation, and so much every man, enjoys its own unique destiny and his own unique way of living. We do not propose to ourselves the task to clear up and to describe original atmosphere or soecific traits in development of either country. Our tendency is rather to reveal similar stages in the cyclical dynamics and genetics of different nations, and to

place with a certainty a position that Russia holds in the uneven cyclical development of mankind.

Regularities of cyclical dynamics and genetics. For having this untrivial problem solved we ought to find definitions for *some regularities of cyclical dynamics and genetics applied to global history*, in a way of mere hypothesis, without meaning them to be full or complete.

1. The course of historical process is an uneven, undulate-helical motion. History of every nation and of all mankind carries relatively slow, inert, predictable periods which go on as if sluggishly, when important historical events are quite uncommon to happen, and even so they are not potent of radical changes. These periods alternate with periods of crisis and revolutions, when time is pulsing rapidly, and historical destinies are turning and breaking unexpectedly. The rythmical system of these rises and falls, the pulse of history are to be observed throughout entire global history.

A period of time from origins of any social or political system to its collapse (or radical transformation) is known as its *life cycle*. Its anatomy, its internal structure includes a subsequence of phases that take after each other: conception in depths of an old system — a concealed and latent development; then birth, coming into existence, with efforts made to sustain forces in order to struggle against obsolete and retreating system; maturity, demonstrating all essentials of a system; decrepitude that disseminates conflicts, as a system enters crises to struggle against its successor that has already sprung into being, eager to get its own place under the sun; and finally, a lingering process of agony and dereliction shaping in a number of transformed particles apparent at margins of an emerging system. This description covers the idea of typical system that is able occassionally to modulate its fluctuations or change its form.

By the term *historical cycle* we mean a period of time which begins at the birth of a new historical system and stretches up through successive phases till next critical point breaking as a subsequent system emerges, irrespective the fact that many relicts of the obsolete system might be staying alive for the next few cycles (primitive tribes were occassionally discovered in debris of Amazon at the mid-20th Century). A historical

cycle is two phases shorter than a life cycle on the virtue of coincidence between final and initial phase of adjoining periods at time of transition.

2. *History is polycyclical*: historical cycles of different depth and duration are interwaved through their interaction, so that a phase of a cycle with greater duration is overlaid by several minor cycles in such a way that phases pertaining to the superior cycle affect the duration and the amplitude of fluctuation of those pertaining to minor cycles, thus abling to cause their deformation, in particular during transitional periods.

3. Between two adjacent historical cycles always lies *a transitional period*, permeated by the double atmosphere of an oncoming crisis and obsolete system dying irreversibly. A new system springs out with much pain and anguish, and the historical process continues chaotically and disorderly, as it happens whenever the whole is less than the sum of components, the aggregate, for the latter is very much engaged in a heavy strife to oppose new influences and to overcome a crisis. It is through these periods that empires undergo partition, wars outbreakes, conditions and standards of living deteriorate, production efficiency falls off, and elements of decay in morals, culture, ideology become evident. Yet haos is gradually originating a new kind of order that express the content of a cycle following it upon, and that's so far as the transitional period finalizes.

These periods bear a vivid evidence as much as of a retreating, as of a coming epoch, of their antagonism; they bear a burden of instability, of the brisk and impetuous manner in which history changes faces, and of the fact that the past can still recur to shift epicenter of historical progress elsewhere.

These periods may be of different duration, they may number several months, as in the case of short-term cycles, or several years (medium and long-term cycles), or several decades and even centuries, as in the case of civilizational

4. The cyclical approach permits to develop a new way of looking at *the historical time*, — the continuity measured by number of historical events during any given unit of calendar time. The way in which historical time runs is not one and the same for different phases of cycles. First slowing down at phases of maturity and stagnation, it is becoming

exceedingly fast later during crisis and revolutionary uprisings, with dynamics of system falling to instability, and when one contingent occurrence suffices to change drastically trajectory of motion (within a possible fan of alternatives). It is in these periods that the historic persons obtain a critical weight. Unlike metronome, clock, or watch, the pendulum of history slows down its motion at one moment, and gears up at another, the cyclical time being either compressed, or stretched out and lingering in response.

There can be no question about historical progress being much given to acceleration of perfectly natural origin. Accordingly, a life cycle of every new civilization is shorter than that of a previous one. The same is true about phases of cycles and transitional periods. Ascertaining the quantitative measure, index or rate of acceleration, grows to be an important goal. Reaching it will provide historians and forecasting analysts with an instrument to measure rhythms of historical progress in the past and future.

Yet it is equally important to resist a vulgarizing arithmetic approach, a quest for an exact ratio. Social regularities figure as tendencies most of time, not as a strict mathematical formula. It should be remembered that regularities of social developments, unlike these of natural ones, do themselves undergo changes if conditions for their realisation become essentially different.

5. The inscreasing rhythms of global history make it necessary to indicate *geographic epicenters* for the historical time to be counted out. Every local civilization, every nation keeps to their own historical time, to the unique trajectory of motion, now slowing up, now accelerating this internal rhythm, first falling behind, then catching up with the chronometer of global history which indicates data as to give reference to the current period of historical time. Since the leader of historical 4. The cyclical approach permits to develop a new way of looking at *the historical time*, — the continuity measured by number of historical events during any given unit of calendar time. The way in which historical time runs is not one and the same for different phases of cycles. First slowing down at phases of maturity and stagnation, it is becoming exceedingly fast later during crisis and revolutionary uprisings, with dynamics of system falling

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6. The study of historical cycles would never fail to be superficial and restrained without elucidating *the regularities of historical genetics* responsible for processes of heredity, mutation and selection in national and all-human development. A bio-social genotype belonging to individual or community crystallizes into a hereditary invariant, — the genotype that represents their social essence and is transferred to generations and civilizations to come. This genotype expresses the most important features and the whole unity of major elements out of which society cannot exist, as it carries content of heredity (likeness and variety of individuals and collectives, a certain level of knowledge and skills, technological and economic mode of production, patterns of legal, state, social, national, political relationship, and the forms of spiritual life).

Social genotype, never changing, as it is, about its basic characteristics throughout millenniums, is recurrently joined by, or enriched with experience of peoples and generations. This is instrumental for accumulating social potential and for putting up with sharp changes in the environment. The onset of crisis, revolutionary unrests, and inter-cycle transit bring about an enormous surge of mutations, with an increasing growth of deviations from hereditary genotype and prevailing stereotypes in thought and behavior. A purposeful, and, even more often, a spontaneous selection, results in dismissing a vast majority of deviations, and yet some of them manage to stand the test and thus become firmly established in social genotype, adding to the treasury of historic experience. Stage by stage social requirements expand and accumulate, together with human knowledge, skills, modes of society, political order, elements of science, culture, education and morals, so that structure of social genotype, amount of legacy handed down through generations and civilizations are constantly supplemented.

7. Historical cycles constantly *interact* with adjoining cycles, especially with those involved into natural developments. Climate conditions and natural resources characteristic of either region or continent create a formal background, setting environmental scene in which historical cycles spring up and develop. For example, civilizations of Ancient Egypt, Mesopotamia, and India sprang up in the valleys traversed by the long rivers, where it was possible to establish an irrigate system of

agriculture. Occasionally, salinization or flood of irrigated lands, brought death to local civilizations. The count of historical time begins two thousand years later on the territory of modern European Russia than in the Mediterranean area, because the glacier had been there for a longer period, delaying rise in temperature. Climate conditions in Amazon jungles, basins of Volga and Rhine are different than those in the North Russia or Alaska, which created a good deal of distinction between local historical cycles at these territories.

Historical experience, combined with understanding of regularities of cyclical dynamics and genetics, affords and promotes *historical forecasting* — the ability to predict course and pace of historical cycles, alteration of their phases, to soften critical, transitional phases, and to reduce their duration, to contribute to the formation of a new society. But achieving this goal will require from history to stop being a descriptive science expounding historical facts. Instead it should elevate to the status of an abstract knowledge which deals with the regularities of historical process and instructs people by the force of scientific forecasting. This will certainly enable them to avoid a lot of troubles and obstacles on the path of historical progress (without entertaining any sort of illusion as to 'straighten' historical curve, or to overcome the cyclical character of social dynamics, which would only create a frightening possibility of recurrent crisis and upheavals).

Types of historical cycles. *What types of historical cycles are there to be identified, with due account of the theoretical grounds observed above and with the reference to various classificatory principles?*

In the spatial aspect it is necessary to identify cycles pertaining to the historical spiral, without adding any substantial touch to the destinies of a country, a nation, or mankind.

2. *Media-term cycles* (10 — 20 years), related to the successive periods of activity of human generations, renovations of machinery, changes in political order, formation and promotion of the international institutions, etc. Each generation of politics, businessmen, scientists with their own way of looking at the world, their own concepts, with the ambition of establishing their ideals, and to leave something worthy for a new generation. Therefore, with cycles of this kind, the changes go further

than with short-term cycles; yet the national genotype, to say nothing of that of mankind, does not change substantially.

The unique study on media-term cycles was undertaken by a great Russian scholar Alexander Chizhevsky. In his book, published in 1924 (55), he finalizes the statistic research over the history of more than 50 states and nations throughout all continents for the period from 500 B. C. to 1914 (that is, for total of 2, 414 years). The mass events having historic significance were assumed to be a unit of measure of counting out, more precise, two points of them, — the years of origin and culmination. The investigation made it possible to discover a cyclical fluctuation of a number of historical events (historiometrical cycles) with the average period of 11 years. 'A universal cycle of historical events recurs exactly 9 times in each century... Thus it may be assumed that each cycle of the global activity of mankind in history, war and social affairs amounts to arithmetic mean of 11 years.' (55. P. 27) Next, the definite distinctions about four periods in the cyclical structure are identified; a period of minimal excitability (3 years) averages 5 % of historical events; 20 % fall on a period of growing excitability (2 years); on a period of culminative excitability (3 years) — 60 %; and on a period of decline (3 years) — 15 %. (Ibid., P. 29).

Chizhevsky is quite positive about relating the media-term historiometrical cycles with cyclical fluctuations of solar activity. 'The number of historic events which proceed simultaneously in different locations on Earth gradually increases as long as approaches culmination of solar activity, reaching its utmost value during epochs of culmination, and falls off as it begins dropping to minimum. This affords to hold every cycle of historic events of the global historical process to be *universal*. (Ibid., P. 27). The scholar seems to ascribe such a synchronism to a direct promotion of solar activity which affects intensity of mental processes, degree of their excitability, aggressiveness, preparedness to follow their leaders, bringing out ideas which attract the masses. Even the belt which links the places of origin of ancient civilizations fits the latitudes where this influence is supreme. 'If we trace conditions in which civilizations originated and developed, it will be quite easy to see that the distinguished centers of mental life of mankind first root in places of optimum

temperature. The latter allegation is equally true for the following types of culture: Chinese, Babylonian, Egyptian, Indian, Ancient, and Arabian.' (Ibid., P. 21).

Chizhevsky proposed that politics and states could make practical use of the regularity of historical process which he discovered for the forecasting the future. He demonstrates the example of such use: 'It should be expected that the maximum of solar activity would be achieved on 1927-29... and since then some events of major historic importance very likely will follow, due to a certain course of developments in the social and political fields, and effect another insertions into geographical map'. (Ibid., P. 69) As we know today, soon after then a global economic crisis bursted out, with the supervening formation of totalitarian regimes in the USSR, and later in Germany.

There can be little doubt that natural cycles, including the solar ones, undergo the influence of the life activity of and the activity of the masses. Yet this influence can scarcely be as direct as this, since it is mediated through impact of a multiplicity of economic, social and political developments, and is realized through specific dynamics of local civilizations. While the duration of the historical cycles shows a tendency to a gradual reduction, there is no such tendency about the solar cycles. In fact, the solar cycles fluctuate within considerable ranges (from 7 and 16 years), with long-term cycles and extralong-cycles superposing middle-term ones. However, it is necessary to study the impact which the environmental fluctuations produce on the cyclical course of historical progress, and daring attempt by a distinguished Russian scientist to undertake a larger statistic investigation on this issue deserves to be welcomed and continued.

3. *The long-term, semisentennial* (if viewing the contemporary epoch) history cycles coincide with the Kondratieffs 'long waves' in treating of economic and technological progress, and are connected with substantial shifts in the inner levels of society, with transition to a new technological basis, accompanied by changes in economic, social, politic life, which together manifest the civilization's graduation to a new developmental stage.

It is approved method of the science literature to count out *the long-term (Kondratieff's) cycles* — the long waves of economic development — starting from industrial revolution, from the end of the XVII Century. However, Braudel moves this point away for another two centuries — to the XV Century. American scientists J. Modelski and W. Thompson attribute the appearance of the long-term cycles (the same Kondratieff's 'long waves') to the formation of the market economy in China since 930: 'The evolutional potential of market economy in the view of global perspectives involves not only it ever becoming increasingly complicated and growing more specialized against the background of extreme urbanization, but also innovational waves constantly succeeding one another which added a new wind to economy by the famous inventions — paper, money, financial system, firearms, and compass, which afforded opportunity for oceans journeys. But so far as inventions themselves have come into being, hence innovations which originate in them are expected to spring up not one by one but by clusters, groups, giving impulse to the early waves of Kondratieff. Thus it can be supposed that the waves of Kondratieff, though in a very rudimentary shape, originated in China on the verges of the 1st and 2nd millenniums A. D., to move on later by Silk Road to Italy, and to gather speed in 15th Century, reaching maturity with establishing ocean trade which was dominated by Belgium and Netherlands. The long waves of industrial development which were examined by N. D. Kondratieff were the later form of the process which had get under way long before in the other part of the world.' (37. P. 54 — 55). The authors identified as much as 20 Kondratieff as waves within a period of more than 1, 100 years, counting out from 930 the beginning of the first one, and that of the last two ones respectively from 1973 and 2026. The average duration of these cycles amounts to 58 years, with a fluctuation range 48 — 80 years.

However, the market economy is known to spring up about 5, 000 years ago, and innovation waves (such as mastering bow and arrows, agriculture, trade and handicraft, wooden and then iron plough, etc.) date back even to a still earlier period. In viewing of the aggregate of developments underlying the long-term historical cycles the date of their origin should be moved back still further for another two or three

thousands years, to the very beginning of history. The duration of the first cycles amounted to a few centuries. The history of every civilization comprises a succession of stages (phases); these are stages of origin, spreading, maturity, decrepitude, and decline, — each of which is a long-term historical cycle, finalizing in the transitional period. Here are, for instance, the periods which historians identify within the history of ancient Egypt: Early Kingdom (since about 3, 000 B. C.), Ancient Kingdom (from 2, 778 B. C.), Middle Kingdom (from 2, 160 B. C.), New Kingdom (1, 580 B. C.), Late Kingdom (from 950 B. C.). Analogous to these are the periods identified in the history of Ancient, Mediaeval, and other civilizations. Yet the most vivid manifestations of the Kondratieff's long waves was observed in the industrial society. There can be no doubt that such long-term fluctuations, (their duration showing a gradual trend to reduction), will continue in the future development of mankind. Long-term cycles demonstrate their specific qualities, the specific durability in a history of every country, setting about the specific pace of historical dynamics. Periodicizing history of civilization is carried out with a view of their epicenters, indicating the model time for the development of mankind.

4. Next group includes *super-long multi-centennial civilizational cycles*, representatives of a higher level of the cyclical social dynamics, which express the rhythms as to which civilizations success, and manifest the radical transformations in society.

Spengler was among the first to conceive the idea that along with 50-year periodicization to the rhythm of political, spiritual and artistic developments there are the 300-year periods in the dynamics of art and science. Braudel, in the union with Cameron, supported the existence of centennial tendency ranging from 150 to 350 years, arguing that no cyclical duration longer than this one is possible. (9. V. 3, P. 22).

The author's approach towards the content and the stages of multi-centennial cycles will made itself clear below, while observing rhythm of changes of global civilizations.

5. Some of the historians state an opinion about the existence, save for the life cycle of whole mankind, of the longest form of the cyclical social dynamics, — *millennial cycles*. Oswald Spengler mentioned it by

the way of emphasizing the term of living durability ideal for every culture. Arnold Toynbie, Lev Gumilyov held the similar looks in the matter. Yet the most thorough investigation on this subject was accomplished by an illustrious American futurologist Owin Toffler. He identified three waves in the history of mankind. The first one commenced 8-9 thousands years ago, starting with the neolithic revolution, which gave origin to the agricultural civilization. The second wave — the industrial civilization — sprang out in the course of industrial revolution: three hundred years ago there was an explosion bringing about percussive waves which came around the globe, ruining old societies and bringing to life entirely new civilizations. The industrial revolution was just such an explosion. From out the late XX Century 'the third wave' is emerging, offering a type of civilization in many respects different from that of traditional industrial society. 'The third wave' brings along a new way of life, established upon resumable sources of supply and a new institution, to be called 'an electronic cottage', on the radically transformed schools and corporations of the future. (67) Quite a number of the tendencies pointed out by Toffler has made themselves clear during the years which passed after the publication of his book. But the transit course towards a new civilization proved to be yet more painful and lengthy that the futurologist fancied.

The author's approach to the supreme level of perodicization has much in common with that of Terrier's, though they somewhat differ in what they deal with setting structures and limits to transitional periods. I offer the concept of millennial cycle (to be called a *historical supercycle*), comprising several multacentennial supercycle which share common inner grounds (kindred civilizations). The point of counting out also dates back to the emerging of the neolithic revolution. The first supercycle embraces neolithic, early-class, and classical civilizations — the first three stages in the formation of human society. The second supercycle starts developing from the middle of the first millennium A. D. and lasts for 1, 500 years, embracing mediaeval, pre-industrial, and industrial civilizations. These were the stages of origin, formation, and triumph of industrial society. Starting from the XX Century, commenced the transitional stage towards the next supercycle, which is most likely to include the post-industrial and

the two following civilizations (three multacentennial history cycles) and will last for about half-millennium, unless some tragic contingency (thermonuclear or environmental disaster or such) ruins this possibility. At the moment there is too little data for such remote developments to be judged from anyway, and we can only refer to the rhythm to historical progress, which has been revealed previously. Let the historians of the future have a chance to identify the substance and the tendencies of society in which they will live!

1.4. Civilizations: concepts and structure.

The concept of civilization. The term 'civilization' was brought into use in a comparatively recent time, about two centuries ago, by French enlighteners to name civil society in which liberty, justice, and legality reign in a triumphant social order. But soon later on the rushfully approved notion acquired quite a different meaning. Thus American anthropologist Lewis H. Morgan, followed by a communist theoretician Friedrich Engels, defined civilization as a stage in social development that succeeded savagery and barbarism and was characterized for bringing social order in a more stable system, together with origin of classes, state, private property. Spengler used this term in a negative sense, as 'civilization', in his view, amounted to a phase of decline of historical and cultural type and its decay. Toynbie approached to local civilizations as various cultural historical systems, regarding them as dynamical patterns of evolutionary type. Referring to developed democratic countries as 'civilized world' came to be an appropriate fashion these days, to set them apart from totalitarian regimes and dictatorships.

Without joining or arguing against any of the positions mentioned above and many other ways of understanding of the term 'civilization', for everyone is free in using terms of which one thinks as appropriate, provided he is positive about their alleged meaning, it would be a right thing to mention the way in which the notion 'civilization' is utilized in this textbook, and in which it was already used in the previous works of the author of this book: *The Formation of the Post-industrial Civilization* (1992), *'At the Beginnings of a New Civilization'* (1993), *Succeeding Civilizations, Its Rhythm and Historical Destinies of Russia* (1994), *'The History of Civilizations'* (1997), *The history of civilization* (1995, 1997).

World and local civilizations. As it is used in this textbook, this term has two meanings: the world and local civilizations. *The world civilization* is the stage in the development of mankind which reveals a characteristic standard of consumption, capacities, knowledge, human skills and interests, technological and economic modes of production, social and political order, the level of spiritual reproduction; in fact this term implies a superlong (multicentennial) historical cycle. The succession

of world civilization expresses the oncoming movement of historical progress, self-development of mankind.

Some historians contravene the suitability of the term 'world civilization' as such. Thus, L. I. Semennikova argues that 'speaking about civilization as a whole entity is untimely if possible. It is more the dream of the intellectual elite of highly developed countries than something existing in reality. 'The universal civilization' stands as an appropriate concept in the sole sense that there certainly is a community of rational beings existing on the globe, which develops due to the natural and social patterns and share common interests. But the human community is not a homogeneous entity, and globality as an approach will not profit a researcher with the true understanding of its history. The concept of the uniform world civilization contrasts the plurality of progress, and flags once again the ideology of unified development'. (46. P. 83, 84).

The cited passage, however, reveals nothing new: the same was stated by Spengler, and, to some extent, by Toynbee. The globality of history is denied in this approach, the history appearing rather as a sum of isolated processes passing within local civilizations. The further step is dismissal of interference of their dynamics in the framework of historical rhythms to mankind as a unified entity. Coming across revelations like that is all the more surprising in the end of the XX Century, considering the fact that the nations of the Earth share common historical destiny is universally recognized. Apart from this, continuing this discourse will inevitably effect in denying the idea of local civilization, and in particular Russian civilization, because there is nothing homogeneous about this kind, consisting of different nations, regions, cities, villages, each of which keeps to its own specific history rhythms. It is equally unreasonable to ignore these specific features, or to deny the common character of historical dynamics with local and world civilizations.

Local civilizations indicate cultural, historical, ethnic, religious, and economic together with geographical characteristics of different countries or a group of countries, ethnoses, related and fused by the common destiny, revealing and interpreting rhythms of historical progress, sometimes appearing in its epicenter, sometimes moving far away from it. Every local civilization has its rhythm, its own hand, more or less

synchronized with that of global civilizations. The most complete cataloguization ever known was undertaken by Arnold Toynbee in his many-volumed work *A Study of History* (1934 — 1961), which basic contents was published in Russian in 1991 under the title 'Comprehension of History'. (50) His theory of rotation of civilizations in basic premises runs as follows While studying the structure of mankind during last thousand years, Toynbee discovered five living civilizations:

Western society, brought together by Western Christianity; Orthodox, or Byzantine, society, located in South-East Europe and Russia; Moslem society, spread from the North Africa and the Near East up to the Great Wall of China;

Hindu society in the tropic subcontinental India; Far East society in the subtropic and moderate area of South East Asia.

Carrying out researches in the pre-history of these societies lead Toynbee to the conclusion that all these are civilizations of the third generation, and there-*i* upon each one was proceeded by the civilizations of the second and first generation. There was total of 37 civilizations marked upon the maps of the Old and New World, 21 of them being thoroughly studied and described during 6, 000 years of human history. Unlike their predecessors, primitive societies, which enjoyed a comparatively short living period, and were localized on a limited territory and existed in quite a poor numbers, life of civilizations is more continuous, they cover vaster territories, and people are commonly involved into civilizations in great numbers.' (50. P. 80).

Civilizations are being in constant development, each living its own life cycle. These are no statical structures, but rather dynamical entities of evolutionary type. (Ibid. P. 87). Each development goes through the certain phases — *genesis, rise, rupture and decay. The causes of the genesis of civilization ought to be found* neither in racial, nor in environmental senses, but in response to the challenge, in reaction to the crisis which overtakes whole society.

Territorial expansion results into martialization of social life, militarism, 'which is the most common and wide-spread cause of fractures in civilizational body for as long as four or five millenniums. Militarism cracks civilizations, dragging local states into fratricidal strife. By this

process all the social fabric turns to be a fuel for all-devouring Molech. (Ibid., p. 222). Social decay breeds favorable conditions for geographical expansion. 'While sustaining decline society aims at delaying an hour and a day of its death by utilizing all vital power for material projects on an enormous scale, which is nothing less than endeavor to deceive agonizing consciousness doomed for a dying by its own incompetence and destiny'. (Ibid., P. 224).

Toynbee conducts a thorough analyses on the decay of civilizations, thus contributing a deal to the understanding the contents of the transitional period. He notes that 'establishing power over milieu sets off the process of decay and breakup, and not that of growth. It is manifest in unleashing domestic warfares. Succession of wars causes a fracture to bring about breakup as it becomes stronger.' (Ibid., P. 335). Social flaws grow on, resulting into social split, a vertical one, when 'society breaks up into a group of local states, which causes bloody wars to be burst out.' (Ibid. P. 336), and a horizontal one, when society breaks up into groups of three kinds: prevalent minority unwilling to abandon its dominating position, and creating a universal state in order to uphold it; inner proletariat which originates a catholic church, and external proletariat which forms mobil martial detachments delivering blows to a dying civilization. The struggle between these three forces brings about decay of civilization. 'History of every civilization bears a touch of decay... Decline which is to begin at the moment of rupture, is followed by recovery which is to coincide with creation of universal state. However, this process, in its own turn, ends up with rupture manifesting a new decline which is not to be followed by recovery, but result into ultimate decay.' (Ibid., P. 477). The process of decay may involve also major influences from outside, called by Toynbee 'the external proletariat', which is able to undermine quite often the borders of stagnating world.

The value of the Toynbee concept is in creation of the unfolded picture, embracing the life cycles of local civilizations, and the mechanisms of their succession. But this succession itself owes much to the rhythms of world civilizations which constitute a symphony of human progress and synchronize the stages of life cycles of local civilizations.

Local civilization differentiate increasingly with the history culminating to the turning points which lay the borders between supercycle. Quite a number of civilizations find themselves within the stages of decay and split. This circumstance afforded the American Professor S. Huntington a ground for suggestion made in his monograph 'The Clash of civilizations and the Remaking of World Order'. The next warfare will be a war of civilizations. Too stark a prognosis, perhaps, especially considering that this clash may be fatal. However, the specific traits of local civilizations should be taken into account, with a search for a wider partnership.

World civilizations and social economic formations. There is one notion which is very much related with the 'world civilization', — *a social economic formation*. It has been widely used in both science works and textbooks to signify main and objectively conditioned stages in the history of society. Then why did it become necessary to refuse from the accepted category and to resort for a new notion to obtain such a ambiguous meaning in addition?

The first reason was due to a need of avoiding a vulgar sociologism and determinism, superiority of the material world to the spirituality. These are the basic principles in which the concept of social economic formation root. Our approach attributes prevalence to a human being, including his requirements, knowledges, skills, culture, ideology, to all what is usually referred as 'social consciousness' and what distinguishes human from rest of the world. Of course man is unable to break off his ties with the world. The development of the productive forces is one of the key factors of historical progress, together with the dynamics of the spiritual world, and a human being with his requirements and abilities, knowledge and skill, desire and will is regarded as the most important element of these forces.

Secondly, the rigid five-member system of succeeding social economic formations is essentially anti-historical. Its goal was to lay in Procrustean bed the complex and controversial rhythm of historical progress, in spite of its marked individuality revealed in destinies of many countries and nations. At all this the origin of history — the primitive communal system — turned up to be indefinitely durable, for substantially

different phases in the pre-history and first stages in the history of mankind were ignored. The last communist formation in fact signified the end of the history, as it was released from contradictions basically assumed to be the driving forces of historical progress. Like the Christian Eden, it would have been an infinitely boring and monotonous society, though science fiction authors such as Ivan Efremov (in his 'The nebula of Andromeda') tried to color it with tragedies of human understanding when confronting the unknown. The life disproved this illustrious Utopia, the ideals of communism sustaining a tremendous failure in the late 20th Century, though they will rebirth in the future in a modified shape, since the yearning towards complete equality, associated with abundance, will preserve and resume forever).

Counting out the history from the neolithic revolution, with consideration given to the transitional stage that preceded it, — the mesolith, the concept of succeeding world civilizations provides an accurate delineation of the beginning of historical process. Subsequently, it offers an articulation of the main stages of history which is more thorough in details than a corresponding Marxist paradigm. More important, it is based on the position that the rhythm of changes of civilizations, together with its essential motive forces and contradictions, will keep up as long as the human society exists. There is no reason to be pessimistic about the latter term, though a chance still preserves that some cosmic, ecological, or nuclear disaster will make an end to the humanity at one moment, or throw mankind back away for several cycles.

As it has been already mentioned, Professor Diakonoff holds similar looks (22). He starts the count-out of historical time from the appearance of the modern man, Homo Sapiens, not from the neolithic revolution. This adds a large first phase — almost 30, 000 years. Besides, the term 'a phase of historical process', which is virtually identical to 'a phase of life cycle of mankind', is used instead of 'civilizations'. There are also some differences in estimating duration and contents of some phases and world civilizations. This is an appropriate approach, which does not actually contrast that which is revealed in this book. Future researches and experience will submit evidence in either favor, or provide with a new and

more convincing explanation of logic and periodicization of historical progress.

Structure and dynamics of civilization. Let us take a closer and detailed look at the structure and dynamics of the chosen subject — civilization.

It is possible to conceive this *structure* as a truncated pyramid, divided on five levels along its vertical, each level, in its turn, including a row of elements mutually adding each another. (Figure 2).

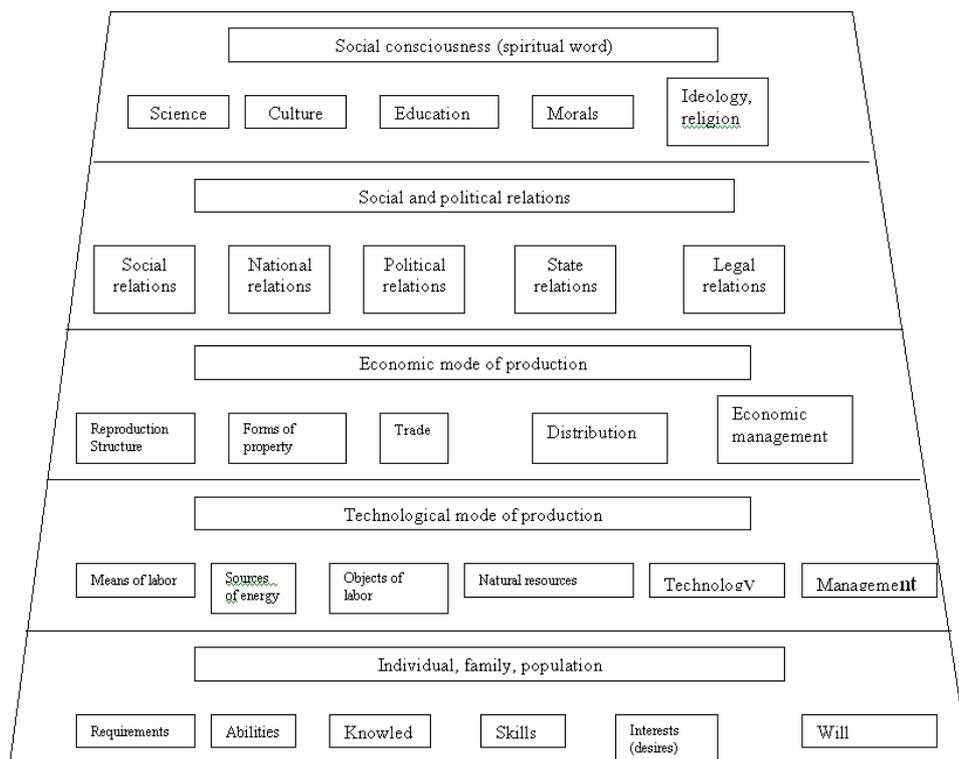


Figure 2. The pyramid of civilization (the structure of society)

1. This pyramid leans against human being as its base; more precisely, it leans against *family*, — the primary cell of society and its molecule, — which, in its turn, consists of unadvisable atoms, family members, who realize mutually supplementing functions; yet there are families consisting of only one member, obliged to do many, though not completely all functions. If there is any structure where biosocial genotype of human being is preserved to be reproduced later, it is family. The succession of generations goes on with formation and satisfaction of vital demands, with acquiring basic experience and skills, which later are supplemented and developed by educational system. Family lays ground

for basic interests and will of individual. It is an initial and final point of social reproduction. Self-perseverance of family sets barriers detaining destructive tendencies during crisis and breaks of transitional periods, and is instrumental to overcome social unrest. The destruction of family would eventually effect the degradation and extinction of atomized society.

The aggregate of families equals to population, which develops according the demographical patterns. Population has a critical influence upon the total amount and the structure of social demands. A whole number of population, the pace of its growth, and its density produce a substantial impact on the level of social development and contradictions accumulating within it.

The history of civilization began at the neolithic period with formation of a monogamic family as a social and economic entity. It was a big family, which included several generations of the closest relatives. Every civilization brought changes to the functions and structure of family, and to the task it fulfilled in the material and spiritual reproduction. The history of family within the framework of succession of civilizations is yet to be written. At any rate, family always stayed a basic cell of society, as long as the latter came to the existence. As it passes a hereditary invariant through succeeding generations, it absorbs those mutations (useful innovations) which have come through durability test and proved to be beneficial.

The family is a major reproductive cell of society, since it deals with the reproduction of human being who is not the main productive force of society, as much as the sense and the supreme objective of social reproduction. Housekeeping attracts 30-40 % of useful labor input in society, (the figure raising beyond this rate during crises). Subsidiary small-holding provides part of foodstuffs consumed by family, and housekeeping involves a main percent of personal services (cooking, child care, cleaning, repairs, sometimes clothes manufacture, etc.)

But the concept of family anyway does not house completely the whole ground of civilization, or society. It is in a larger extent the question of individual, of personality, owning a distinctive spirituality and coming through various stages of its vital cycle. In such a way man absorbs informational and energetic flows from his family and society, and sends

them back in transfigured state. Though each person obtains individuality, it nevertheless serves as an atom and a mirror of society. There is no society without man, but to say that there is no man without society is valid, too. The history of society amounts to the history of multiplicity of human beings: their destinies, their deliberate or unconscious acts. The history of civilizations, the stages in social dynamics amount to the permanent and contradictory process of partnership and confrontation, in which lots of people participate. It is through their thought, their deeds that the historical patterns make themselves clear, the historical genotype is preserved and enriched, and the motion of society from one historical stage towards another is effected. While single man may obtain many faces, being prone to change and sometimes enigmatic and inexplicable in his ambitions and behavior, it is precisely from the sporadic acts of single men, constituting partnership and confrontation of the millions and billions, that the course of historical progress results.

2. The next stage of the pyramid of civilization is *the technological mode of production*, which expresses the aggregate of technologies, principles and forms of production organization, means of production, together with natural productive forces. Archeologists and historians draw the line between the first stages of formation of human society due to the basic materials utilized for the production of labor instruments (stone, bronze iron). Man's muscular strength, later changed for that of animals, served as the main source of power. The organization of labor rested in the most primitive forms, man being almost completely compliant to the nature. But in a gradual step man was creating his own world of tools which was getting increasingly complicated. Appearance of machinery and complex technical devices effected transferring first energetic, and then managing and controlling functions, to invented contrivances and to systems of programmed control. Next step was division of labor, in successive modes of implant, intersectional, and regional. Production in the frames of enterprise, region, country, and global economy gradually acquired the signs of integrity.

As one civilization takes place of another, technological order, utilized set of production means, together with forms in which they are organized, are subject to a consequent change. The technological

revolution comes over. Yet in the frames of certain mode of production, too, substantial processes take place, resulting in the change of *technological orders*. Since these patterns are based on the common principles and power sources of technical systems, they require certain forms of organization, which are corresponding to these systems. For instance, the industrial mode of production, initiated by the industrial revolution, includes five technological patterns. The first one owes much to the technique taken after manufacturing mode of production; the second, the third, and the fourth ones express the successive stages by which industrial mode of production self-development developed itself; the contemporary, the fifth one, prevailing in the developed countries in the late 20th Century, is the transitional shape on the way to the post-industrial technological mode of production, and as such contains the embryos, the initial elements of the latter, which will come to be self-developmental only in the next century.

Every technological order, in its own right, includes a series of interrelated equipment and *technical generations*, succeeding one another with a basic turn of one decade, as it articulates some major invention or basic innovation. Change in generations of data-processing, laser, cosmic, and rocket equipment, provides a good illustration for this. Each generation constitutes a stage of the unfolding of technological cycle of a superior level, this cycle realizing a common technological principle in a variety of models and modifications.

Adjoining technological orders of production (together with technological patterns and generations of equipment) constitute a common space, transitional period of different duration, thus ensuring perpetuity of technical progress. At the same time, establishing each new generation of technique, technological pattern and mode of production manifest a next step of technical progress, a technological revolution of some scale.

Transitional generation of technique, as much as technological orders, if based on the antagonistic technological principles, confronting each other, are less effective. The most effective ones are the generations and frames, which are in the middle of technological principle of a superior level, and thus express phase of its maturity, full realization of its potential.

Stages of technical development manifest advance on the path of understating, since they could be regarded as materialized knowledge and technological skills, and, in their own right, reveal new spaces for developing his productive capacities.

3. On the next level of the social pyramid rests *economic mode of production*, a pattern of economic (productive) relations. Its basic elements are: structure of reproduction; principles on which means of production and its outcome pass into possession (forms of appropriation); ways of distributing manufactured goods between those who participate in reproduction and members of society; modes of exchange — ways in which manufactured goods circulate in society; forms of economic management — regulating and motivating mechanism, which stimulate a single worker (and enterprises) to enhance his productive efficiency.

Each civilization establishes its own manner in which different elements of reproduction and sectors correspond between themselves, its own pattern of economic relations. The neolithic civilization was based on communal ownership, equalizing distribution, natural exchange, direct management of labor activity, and primary forms of social division of labor. The principles of early-class and classical ple originated who were occupied in state service, collected taxes and revenues, served in army, administered justice, or formed commitment to art. Society thus accomplished a tremendous leap in its formation and promoting progress in social relations. Every new world civilization made all these institutions more efficient and differentiated. They will certainly obtain in the future: historical experience gives no evidence in support to the extinction of classes or evaporation of state. And then there is still a question, whether it will happen at all, because this sort of apprehensions were associated with the idea of elimination of class differences and of the state as a violent machinery for class supression, in contrast to the idea of self-management of citizens who enjoy equal rights. To reduce the functions of state like that is wrong. State originated from the need of self-organization in society, in order to face chaos and misrule in social relations.

The level of social and political order is not the same within different phases of civilizational cycle. Transitional periods are usually marked with intensification of antagonisms. The struggle between various classes,

parties, and states results into extreme forms of successive revolutions, civil and interstate warfares. The part of state bureaucracy comes to collapse, and changes in legal system and political institutions are effected, as new leaders of state and society substitute the previous ones. Social and political life plunges into misrule and chaos, violations of the law increasing. The masses of lives are lost in wars, revolutions, or in criminal incidents. At the new phases of civilizational cycle the chaos of transitional period is replaced by a new social and political order which meets the radical changes occurred in human beings, technological and economic modes of production.

5. What does the structure of the supreme level of the civilizational pyramid, *the spiritual world* and social consciousness, look like?

In advance of all the rest, it may be called a scope of human knowledge which altered in a course of time to be the mode of systematic knowledge — science, first resting empirical, and then becoming more abstract since it tackled the study of social, natural and human *patterns*. Social consciousness began at the times when man (not an individual, but an aggregate of human beings) was able to draw the line between himself and the environment, to realize his position and to make a purposeful use of this knowledge for survival and development. A certain level of understanding became characteristic of a social genotype enriched with each new generation. Then a multi-branch tree of science, including technical, natural, social sciences, developed, constantly renewed and supplemented. Powerful strain of social intellect, with scientific understanding as its kernel, figures in the capacity of source of human selfdevelopment and social dynamics, as it sets it in motion along the coils of historical spiral.

While science being a gradual effect resulted from the work of the left semi-sphere, *culture* originated from processes in the right semi-sphere, from the imaginative and emotional perception of the world around. Culture includes theoretical approaches, aesthetic valuations, concepts of harmony, beauty and ugliness both in nature and human being. Literature and variety of fine arts (painting, sculpture, architecture, vocal and instrumental music, choreography, theatre) is also culture. Some of them sprang up back in the neolith, such as rock carvings, dancing,

singing. Cinematography and videoart appeared only in the course of this century. Book-printing and informational resources, including mass media, constitutes a specific part of culture. As it adds to a new knowledge, the abundancy and variety of culture afford to perceive the world in many aspects and dimensions, and to transform in more efficiently.

Spiritual sphere also involves the aggregate of *moral* rules and ethical appraisals about manners demonstrated by each man as he contacts other family members or people outside his family. Moral rules provide us with the basic ideas of what is good or bad, and no society can function without these ideas. These rules preserve in family and national traditions, religious comandments, while those that are the most substantial for the benefit of state consolidate in the rules of law.

And finally, the social consciousness (and the spiritual world as well) includes *ideology*, which expresses an outlook pertaining to an individual and to some group of people, for example, to political parties or states. Ideology involves the aggregate of goals which their activities, and ranging their significance. Ideology can well aquire a religious shape, though it does not ammounts to religion. In my own view, for ideology is not really a lucid notion, it expresses a process of setting objectives, determines will and purposeful energy. All these are inspired by both deliberate and subconscious acts, which may entail committing deeds of great self-sacrifice, or of great evil and malignity.

In every civilization different spheres of the spiritual life are densely entangled. They always express a certain stage in the onward development of social consciousness. During transitional periods the spiritual sphere is subject to a purge, resulting into ruining of obsolete paradigms and establishing of the new ones, altering styles of art, contents, methods, and organisational forms of education, renewing ethical rules, dismissing old and creating new ideological trends or beliefs. For a certain period of time chaos reigns over in the spiritual world, to give a second wind to the prejudices and delusions abandoned long ages ago, as desperate struggle to be the first to fill vacuum which arose in social counsciousness breaks out. Eventually society overcomes crisis, and a new content of social

counsciousness spreads about, establishes and perfect itself in life, untill its own good time ripes, exposing it to the blows of a next crisis.

These are, then, bare contours of the structure of civilizational pyramid. The discussion on changes which occur in its different levels will now follow.

1.5. Succession of world civilizations.

Trajectory of civilizational development. Why and how do world civilizations succeed each other? What are the motive powers, signs, and mechanism of this transit in regard of different 'levels' and 'flats' of the lived-in house of established civilization? What are the essence and functions of transitional period, why does it entail a graviorous succession of social catastrophes, revolutions, wars, and what is it that it will culminate to? Is there any possibility to avoid such upheavals, and to effect the transit towards a next step of civilization through a smooth and evolutionary way?

These days, when Russia, together with the whole of humanity, sustains the bitter experience of the transitional period, it should not sound as idle and vain speculations born in the minds of armchair thinkers. It is urgent for intellectual and government leaders, political parties, and social movements to give a clear answer to these burning questions. It is the only way to take a right course, to foresee the patterns in which future developments will shape. The ultimate goal is to work out ideology and strategies, and to set out immediate tasks which the disappointed masses, counting millions of people, would believe and follow. Identifying and ascertaining perspectives of drastic and dramatic changes undermining the smooth path of habitual life goes to an ambition of every wholesome mind. It is especially true about Russia where deeming concerning destinies of the world and nation is part of a mental shape developed throughout ages.

In the first place, then, there is a question *why do world civilizations succeed each other?*

In a bare online the answer is as follows: this is because the dominant civilization has lived out the term assigned by the history, as it exhausted its potentials and faced up to the last phase of its vital cycle. In its beginnings the civilization was young and vigorous, it contributed efficiently into satisfaction of increasing demands of population, and promoted quick rise of economic development and spiritual revival. But in some due time these capacities have gone. Technological, economic, social and political mechanisms, scientific, educationional, and cultural potentials came to be essentially obsolete. They are not fit for nothing but

pushing aside radical innovations. There is a gulf between abnormally increased demands urged upon by economic rise, on the one side, and constantly reducing capacity to meet them, on the other.

It should not be suggested that the tangle of contradictions like that stands as a single phenomena in the vital cycle of civilization. The trajectory is somewhat similar to 'a three-hump' camel. Three times it rises, each time followed by a crisis.

First rise, which is quite short, but high, is observed against the background of the stage of formation and of ruthless spread. The active elements of society are obsessed with romantic creative apprehensions. Renewed production forces, modes of appropriation and distribution afford high rates of economic growth. Living standards of the masses which suffered hardships at the times of crisis increase significantly. But soon it becomes obvious that prosperity is short-lived, as it was built upon a half-ruined basement and fragments of previous society, upon enthusiasm of youth which obtained for a brief space of time. Then there is a period of disappointment, first crisis of an early period of civilization.

After surviving this crisis, and getting rid of romantic illusions, a mature society enters into relatively lengthy and sustained period which constitutes a raising phase of maturity. It is in this period that civilization demonstrating the self-dependent development reveals its substance, main features and advantages in the most outspoken way. It shows a remarkable down-to-earth character which is amazingly contrast to the sublime ideal flagging a revolution which attracted the masses. However, this phase should be well appreciated for being real, for expressing substance, contents, advantages and limitations of this stage of historical progress.

But the phase of maturity sooner or later will come to an end. Twilights of being drawn off after exertion are abroad, while protest being voiced by classes which obtained a minor share of wealth. The growth rates of labor productivity slacken, and a new crisis bursts out, finalizing the phase of maturity.

Still, this does not mean the end of this civilization. Cheered up by emerging manifestation of decay, it is able to master sufficient strength for a last attempt of self-reconstruction in order to develop adaptation to the new conditions, thus entering into the last short-time and low rise. But at

any rate it comes to nothing but to re-animation of an antiquated and diseased organism, as it is unable to give a breath of fresh air to its decrepit bosom. After a brief period of recovery is over, there is *u* overall social crisis which manifests a start of transitional period towards next civilization, the pre-conditions and elements of the latter already having turned up and made themselves felt at the last phase of the doomed, receding to the past society.

This is in bare outline the trajectory in which any civilization moves forward. In particular, it is neatly exemplified by the history of ancient Egypt which contained a few phases of rise and transitional periods accompanied with powerful unrest. The same can be illustrated by stages of the less distanced industrial society, which still keeps us in its tight arms. The first rise happened in the earlier 19th Century, resulted from mastering achievements of the industrial revolution. The second, and longer rise which succeeded the crisis of the 40s came over in the second half of the 19th — beginning of the 20th Century, in the epoch of maturity of industrial civilization. Then came the 30-year period of the world wars and devastating economic crisis which manifested the onset of the end of industrial society. However, in the 50s and 60s it managed to make way through one more stage of economic growth by which the myth of mankind entering an epoch of infinite prosperity and getting rid of any probability of crises was brought into existence. But the world crises of the mid-70s, earlier 80-s, and earlier 90-s disillusioned those who believed so. The industrial civilization dominating in the world during two centuries proved to be doomed and showed beyond any doubts that the formation of the post-industrial civilization would be inevitable. The name for this new civilization may be corrected by historians in the future.

Mechanism regulating the succession of world civilizations. Now let me try to give the answer to the second question. How do world civilization alter? This also involves consequence and mechanism for this process at different stages of civilization pyramid. The source of these alterations is to be found in the foundation of this pyramid, i.e. in the human being, in the dynamics of his requirements, abilities, knowledge, skills, and interests.

Changes come over requirements of every single person and family, — biological ones as well as social ones. Every new generation, up from already accomplished level of satisfying needs, raise their claims for meal, clothes, shoes, dwelling, jewelry and so on. For goods and services consumed by families to be produced, there is a need in additional natural resources, raw materials, tools of labor, energy sources. Social demands broadens its sphere due to the growing number of population, social conflicts and wars, encompassing interests of management, defense and maintaining order. Increase in the spiritual sphere is by boundless by definition. Developing virgin territories, with frequently austere climate conditions, creates new requirements. Polluting environments, and damaging the bio-sphere resulted from various kinds of social activities calls for more care to be taken of natural conditions of production and life of people. Demands of individuals, family and society, evolving in numbers and structure, stimulate changes in different levels of social pyramid.

Sociological law of ever growing consumption requirements, including material, spiritual, production, military ones, current and perspective demands, should not be realized straightforwardly. Growth of demands is uneven, for they also comply to cyclical patterns. They demonstrate hefty rise during the formation of civilization, a real explosion of demands that takes over all strata of population due to high rates of economic rise and opportunity to allocate a growing wealth for consumption needs. Accumulation is growing, and often in outpacing rates, too. All strata grow rich, though unevenly. But great expectations that appeared to have come true from the short-lived beginning prove to be disillusioned at the phase of maturity. Growth of consumption slow down, but new generation whose demands were urged forward by preceding boom rise excessive claims which cannot be fully satisfied. Struggle for slowly accruing wealth runs high between different social groups and classes. Social conflicts and contradictions aggravate. In sensing the underground tremor of forthcoming social unrest the ruling elite seeks to delay it, having recourse to the outer sources such as militaristic anesthesia or redivision of the spheres of influence and territories. This leads to enhancing military complex, and to further reducing a share of the personal consumption

funds in gained national wealth. The loop tightens, and society enters the vicious circle.

The hopeless perspective of such way comes to be even more evident in a period of overall civilizational crisis. Recession in production leads go to lower living standards, and then to impoverishing people in growing numbers. The state tries to help children, old people, destitute ones. But it has so little to offer in view of budget deficit and decline in money incomes. The next thing to be done is emission, extra money issue and launching pecuniary masses on circulation. This determines graver impoverishment of the vast strata of population and depreciation of investments. Re-distributing of wealth turns favors to 'the shadow economy'.

What the crisis of demands results in is by no means evident. From the one hand, there is a wash-off on the most surplus demands that are unjustified with possibilities and resources (as it happened in the USA and other developed countries in the late 70s — earlier 80s). Customers come to a necessity to level their needs with their sources. A fresh, more sensible model of consumption that is adequate to altered conditions is currently being developed. There is a keen interest in adding to what is known, a quest for efficient ways of survival and development in the unfavorable atmosphere. From the other hand, growing number of individuals lose opportunity to earn for living. They sink into degradation, or join unemployed, lumpens, hobos, become involved into the criminal world.

Simultaneously, changes come over the top level of civilizational pyramid — *the spiritual world*. Artists, scientists, teachers are the first to come to the sensation that 'something is rotten in the state of Denmark'. Bred by ideals of a prior takeover which raised the banner of present society, they are exceedingly aware of incoherence between these ideals and real existence. Radical ideas and major inventions become increasingly needless and unclaimed, as they are pushed aside by huge machinery of the state and monopolies that are representative of obsolete technological models. In order to see way out of crisis, a crowd of new ideas, concepts, ideals is proposed, many of them being re-makes of long unheard tunes. However, in gradual and tiny steps changes come over

scientific legacy and system of values, finally making them undergo major takeover. A new social ideal become bright and lucid, attracting followers and eventually appealing for an active part of society. Education is the last sphere to respond to this collapse of social consciences, but the moment new ideas and ideals are inserted to textbooks for schools and universities can be seen as the indication that the stage of crisis of the spiritual sphere has essentially passed away.

Thus, the succession of civilizations starts from both lower and top level of the pyramid, from crisis in consumption needs and the spiritual world, springing up from human minds. But it never can come into existence until technological and economic modes of production change, together with sociopolitical order.

The technological base of society is given to inertia. There is no surprise: enormous funds which are deposited into creating technological systems (construction of plants, buildings, communications, development of natural wealth) must recoup themselves. Inventions go in for thorough examination on efficiency and their being realistic before they are embodied into new technological orders. For the latter thing to be done, it is necessary to alter production infrastructure, to organize refresher courses for specialists, to replace outdated machinery, to introduce more efficient forms of organization of production. Restructuring technological base entails cutbacks in production, underutilization of capacity, replacement of obsolete equipment, radical renovation of fixed capital. Technological crisis and technological revolution are essentials of the mechanism regulating succession of civilizations. They take in all the spheres of production and utilization of technique, as they gradually spread over from the epicenter of revolution further to periphery. Transit-like, hybrid type of technological order is the first to appear, including elements both old and new technological modes of production. The new pattern, most adequate to the technological basis of new civilization becomes clearly established only at the next stage. The framework of transitional period in technological basis averages roughly a semicentennial period.

Technology is inseparably connected with economy. Radical changes in technological basis of society stimulate shifts in economic mode of production which reveal themselves in changes in *the structure of re-*

production, that is, in proportions between various sectors of reproduction. Under crisis the share of consumer sector increases, for the expense of cutting the share of intermediate (raw materials, fuel, energy), military, investment and intellectual sectors, and that of amortization funds and accumulation funds. Military clashes, however, is able to increase the share of military sector. At the phase of recovery restructuring technological base assumes the increase on the share of investment and intellectual sectors and that of accumulation fund, which is enabled by set-out of upsurge. The share of surplus product goes down under crisis, personal incomes do not come up with real size of basic commodities, acquired value of capital assets only partially covering amortization. On the next stage, next to the increase of efficiency of reproduction, the rate of extra-product goes up, which provides the opportunity to carry on accumulating funds together with simultaneous increasing on consumption funds, to update production and manufacture with regard to a new technological base. Correspondingly, the share of investment complex increases.

Each civilization brings essential changes to pattern of industrial relations, modes and shapes of appropriation, distribution, and exchange. These changes derive their power from human being, determined by the need to establish economic concern and mechanism of motivation to be fully correspondent to certain economic and organizational conditions. The neolithic civilization was bound to generate the communal mode in appropriating of certain means of production, generally equalizing distribution, sprouts of commodity exchange. But yet then arrows, bow, spear were held by hunter as his own personal belongings. Thus the initial inequality between families and communities began. Equalizing mode of appropriation and distribution became an impediment in the way of social development, depriving more nimble and more efficient worker, and his family, of an extra allowance he earned. The beginning of private property, and the patterns of uneven distribution and exchange that it assumes, was progressive development. Every following pattern of economic relation made a step forward, yet within the framework of this civilization. In the end of industrial civilization, the estrangement of man, immediate producer, from conditions and outcome of his work, reached its

utmost, as resulted from overwhelming intrusion by state monopolies on the process of re-production, distributing and re-distributing of national wealth. This intrusion turned to be an obstacle in the way up to following state in development of technological basis of society. Pendulum swang into the opposite direction, towards recovery of small properties, developing small and medium businesses, return of free competition, the one able to make worker interested in what he does with his labor. This does not allow for civilization with economic order resting entirely upon single type of property. Economy is essentially a multi-structured phenomenon, as dominating, prevailing type of property, which plays first fiddle with frequently disharmonious economic orchestra, is constantly interweaving with elements of order which prevailed in the past or emerge to dominate in the future. Economy is polyphonic.

Yet a wider range of types is to be observed on the next level, in *sociopolitical order*. A moderate social partnership and political stability at the background of the phase of maturity make way for sharp confrontations in society, politics and warfares in transitional period, when a reduction of consumption fund comes about, many families survive in worsened conditions, population falls away because of decrease in birth rate, diseases, warfares, standard of living falls. There is a growing desire for violent re-division of social wealth, with recourse at revolutions, terror, and robbery, which faces bitter resistance from proprietors. They are not prepared to dispense with property they have gained. These conflicts, running to inter-state and civil warfares which involve various social, political, national and religious forces, in their own right, does a bad turn to manufacture, destroys productive forces, throws society back away, and leads to abandoning cultural wealth. Empires and federations break up into parts. The state loses a considerable amount of its power. The crime rises, beaurocratic machine is dissolved by corruption. Sometimes it comes to an end, with country surviving through violent shakes, which however may well prove to be fatal, especially when inner dissolution accompanied and enforced with impact from outside, by war or aggression of a mightier neighbor. The result is evaporation of local civilizations, which come to the final point of their life cycle at this coil of historical spiral. But more typically, reaching new verges of economic rise becomes possible no

sooner than restructuring political and state order is accomplished to agree interests of new proprietors anxious to protect their privacy and to secure ways in which it is to be augmented. Political order can be set in different legal shapes, ranging from democracy to monarchy or tyranny, but at any rate it is bound to maintain sociopolitical conditions needed for the formation and sustainable functioning of new civilization.

Economic and sociopolitical order, once being established, gains ideological support and excuse from *the spiritual level* of society, at the top of the pyramid. Scientists demonstrate objective determination, justice and eternity of triumphant order. Ideologists and clergymen sanctify it, dominant ethical rules adopting to its values. Education helps to reproduction, transferring of its main principles for generations to come.

Therefore, succession of civilizations is the overturn at all levels of the pyramid of society. This overturn comes over due to some regularity of stages and rests upon a combination of essentials inherited by genotype of each of its subsystems with interdependent alterations enriching this genotype and aiding adaptation to the altered inner and outer conditions in the life of mankind at every following coil of historical spiral.

Stages of the transformation of civilizations. Now let me answer the third and final question: *what are the contents, stages and results of transitional period towards a next civilization!*

The contents of this period is ripe changes in the fundamental base of every level of social structure; removal or destroying of out-dated and doomed elements of receding civilization which impede progress (with preservation of what belongs to historical legacy, the enriched genotype of mankind); giving birth through many anguish, errors and pursuits, through severe birth pangs, to a next link in the spiral of historical progress.

Chaos and destructive element are made clear through this period of two historical layers colliding into each other. All kinds of social antagonism grow sharp. Crises, revolutions, warfares, other conflicts, succeed each other in a long row. There are negative demographic tendencies to be observed (decline in growth rate or absolute decrease of population, flows of refugees).

Unemployment grows drastically, paralleled with impoverishment, crime and moral degradation of some parts of society. It is a grave disease

making all social body feverish and sometimes bringing it to lethal outcome, to the extinction of one or another local civilization, or number of states. But this is the disease which cannot be avoided, for the gradual stepped progress of society is not done without recurrent restructuring, or renovation of social body. This renovation often run into vast expenditures, though costs vary in different countries and periods.

What are the stages in which the transitional period evolves with succession of civilizations? Analogously with the phases of crisis, four stages are to be identified.

The first stage is a *latent* period, when premises for future change are accumulating, these being decrepitude; decline in efficiency of obsolete society; rising inability to satisfy grown social demands; lack of receptivity to radical innovations. The portents of forthcoming storm appear, of which only few are aware. Society is steady, well-ordered, systems of dominant civilization still displaying a proper work. But the seeds of civilization to come next are already ripening in its womb, still feeble, but struggling persistently to the surface.

As antagonisms culminate to a critical point, and decrepit mechanisms prove themselves unable to mitigate them, the stage of a crumbling, *collapsing crisis* starts. This moment usually counts as the beginning of transitional period. Chaos, disorder, unpredictability grow at every level of society. Crisis succeeds crisis, and cataclysms all the same. Attempted settling of antagonisms for the expense of external sources or redistributing wealth result into revolutions and wars. Social thought revives, desperate to find way out of standoff, with disconcerted and generally unrealistic projects coming out regularly. Economy falls into decay. Social conflicts aggravate. Political parties and ailing powers are stricken with paralysis, losing their faces in the eyes of society. The spiritual world, science, culture, morals, education suffers great harm.

It is the realm of chaos. It favors the forces of destruction and misrule. But beyond the front of disorder, the sprouts of civilization to follow conceal their gradual growing, their interweaving in the fight for survival. New social forces are established, as yet unable to carry on a creative work on larger scale. New leaders come up, countries and social activists, fight tempering their will. They form a potential core of the future society.

The third stage of transitional period can be referred to as '*stalemate*' situation, a period of equilibrium between the old and the new worlds which does not last for very long. In respect to dynamics of economic cycle, it counts the phase of depression (no more decay, but no signs of economic recovery either). Society is restructuring its inner reserves, growing more conscious about the irrevocability of the loss of the prior order, and the inexorability of transit to the new one. In making use of the short time-out, its elements try to keep together to be prepared for a major breakthrough.

The fourth, and the *final* stage of transitional period expresses itself in a headlong assault of elements of new society after have gained enough strength. The major breakthrough is made in leading countries, soon followed by the final defeat of formerly powerful elements of receding civilizations and by its being thrust aside to a periphery, to dereliction, though the possibility of occasional setbacks and desperate counter-attacks still survives. At this stage the state of chaos is felling off, and mechanisms regulating social order and predictability in social dynamics are going to grow up. Economy begins rising, which provides opportunity for allocating greater resources for both individual consumptions and accumulation, and for restructuring technological base, too. The mechanisms of stabilizations regain their efficiency, and then legal order sets in. New civilization triumphs everywhere, still evolving through the phase of formation.

What are, then, *the results of transitional period*? First, the transit towards the next coil comes to the end, and so does the formation of following world civilization. In its following cyclical dynamics, society assumes a new appearance, more suitable for the changed conditions. Hereditary genotype is being cleared up from obsolete attributes and enriched with new ones which had passed through most severe selection and most thorough examinations during transitional period. Renovation spreads over all the levels of civilizational pyramid.

Secondly, the conditions for the re-production efficiency and standards of living to rise are restored on a new technological base. Society is vigorous and powerful again and looks forward to the future.

Thirdly, new leaders of technological development and economy advanced. New prior production sectors began and established themselves firmly. The epicenter of political progress changed its position at the global political scene, as prior leaders and local civilizations moved aside or yielded ground to the new ones, which proved quicker adaptation to the changes in the world, less burdened, as they are, with heritage of the past.

Fourthly, next stage in spiritual development of the world begins evolving, both the level of freedom and extent of interest for human being enhancing.

Fifthly, integrational, centripetal tendencies regain strength in the country and abroad. New centers make appeal for other nations, and connections economy, politics, and culture grow in their numbers.

The end of transitional period opens a vast opportunity for new civilization to establish itself and to expand wide. With one wave followed by another, it spreads throughout the whole world, exercising its influence upon relicts of prior civilizations still surviving at the periphery.

Again, this is the abstracted outline intended to unfold the contents of, and mechanisms regulating, succession of civilizations and transitional periods. Life is immeasurably more abundant than any outline is. Two perfectly identical situations is something history does never accept. The bare outline stated above is to be filled in below with ample content, when investigating main epochs in the history of the world and the history of Russia.

1.6. Coils in the spiral of historical progress.

When did history begin? Since substance and structure of world civilizations, and the mechanism regulating their succession are made clear, time is ripe to fit proposed approaches and models to real historical process. The very first question coming up is: when does history of society dates from?

This question is answered in many different ways. In general, study of history opens from the primitive communal system, which began as far ago as 1,5 — 2 mln. years, from the paleolith, the time when distant ancestor of contemporary man wrought stone tools (more available wooden or bony tools seem to have been utilised a deal earlier). These facts are proved true by archeologists, and are subject for study of anthropologists. But how it is possible to take up history of society where no rational being existed, and therefore could be no society as such whatever, is still unclear. The majority of the social pyramid was yet to come into being, or at least was in embryo. By far the approach in hand turns out the attempt to spread contemporary ideas about society over the ground that lacked premises for it to exist.

Some scholars count the history of ancient world from the end of the early stone age, that is from beginning of the *Homo Sapiens* about 40 millenniums ago. This was a major overturn in the evolution of the species called human being. It brought about essential changes in the kernel of heredity which survive in the present, and it affected the formation of social genotype. But the same scholars fail to disagree that primitive man, though engaged in labor, was essentially the nature's dependant in the course of the first thirty millenniums of its being, and was unable to re-produce means of subsistence (livelihood). 'Homo sapiens inherited capacity for labor and to work primitive tools. But ever since the end of the early stone age, for a very long period of thirty thousand years of his history, man was still... deriving benefits of nature by use of tools he produced, but he did not know how to re-produce these benefits. His methods of procuring livelihood, such as hunting, fishery, gathering, certainly were labor. More important, not only he

needed for his existence to be sustained to produce tools of labor, but also to reproduce them, but however he did not know how to reproduce the products of the nature themselves. Thus the life of human collectives (communities identified for kinship) was immensely dependent on exterior natural conditions, on abundance or scarcity of loot, on a tricky chance of luck. Luck was succeeded by periods of starvation, the mortality being very high, and exceptionally so among infants and aged people. People were few in numbers over the great spaces of the globe, perhaps, even felling away at times'. (24, V. 1. P. 31).

In general, this view appears to be true. It witnesses that human being of the period under consideration had not yet torn navel-string tying himself with the Mother-Nature. The only question is whether this lengthy period, which is four times longer than all the path of history till nowadays, was history proper, or was it just pre-history, a time for the formation of premises to set off the course of history, a time when human society had been merely preparing to become, to tear navel-string and to develop keeping with its own regularities, though reciprocate with the laws of nature as the external medium for mankind and society. The second version of answering this question seems to be more validated.

There is still another view to be referred to, that the history of mankind, presented in its essence, as it is, by the struggle of classes, dates from their emergence, from beginning of the state, which necessarily expresses the will of a ruling class, that is about 5-6 thousands ago. By way of illustration, Karl Jaspers identifies pre-history, as distincted from the 5, 000 years of history known out of written data. This was a time when, almost contemporarily, three ancient cultures sprang up in three different regions of the globe. First, it is the Sumer-Babylonian and Egyptian culture, and Aegean world from 4 000 B. C.; secondly, pre-Aryan culture linked with Sumer, dated 3rd millennium B. C. and revealed through excavation works in the Indus valley. Thirdly, the archaic world of China second millennium B. C., or even prior to this date, which is dimly sweeping through spiritual memory, as the traces it had left behind are so scanty and few'. (63, P. 70). According to this view, no sooner period is to be subject of the history of civilization,

since the word itself is derived from a Latin *cives* — citizen, i. e. supposing existence of classes, state, and law. But thus the period that preceded to these, lasting for 4 thousands years, is excluded, in disregard of the fact that it played a decisive role in determining the destiny of mankind and the formation of social structure, viz. the period dating from the neolithic revolution. That this grandiose overturn was of the global historic significance is accepted by absolute majority of social scientists.

The author of this book holds the view that *the history of mankind should be dated from the neolithic revolution*, (which set off the first civilization, viz. the neolithic one). This revolution was preceded by the transitional period of mesolith. Thus, the history of society proper counts, with transitinal period excluded, about ten millenniums, — a tiny spark as compared with the chronology of geological history of the Earth, but in the same time the immense journey marked with so many dramatic turns.

What arguments are to be bring forward in support of this approach?

First, the transition towards the reproduction of artificial means of existence, of second nature, resulted from man's purposeful activies, and based on transforming natural raw materials and energy as taken in original state from nature, could be only effected in the case of in qualitative leap in man himself. Man tore off the navel-string that connected him with the Mother Nature. Doing so was in no wise individual. It resulted from combined efforts of single men, family and tribal communities, which were the premordial elements of the ancient society. This means that first stage in the social pyramid was formed, including varieties of requirements, abilities, knowledges, skills, and interests of man as society's part.

Secondly, this period was marked with the formation of the technological basis of society which was first founded on social, rather than natural (that is, considering age and sex) division of labor. Sectors of social re-production, manufacture of means of production and articles of consumptions, can be readily identified, while agriculture, stock-farming, trade, and construction prove to become separate fields of

activity. Social division of labor laid the ground for tradesman and worker to accomplish their skills, for tools of labor to become more specialized, and for labor itself to be more efficient.

Thirdly, the level presenting economic mode of production was gradually being filled up. Communal ownership for cattle and lands, private property for many tools of labor is already coming in reality. The beginnings of give and take, primarily in natural forms, are also to be observed, together with local markets, where this give and take was being carried on.

Fourthly, along the economic lines the social differentiation developed. Communities and families appeared which mainly showed preference for taking up agriculture and stock-farming. Carriers, potters, weavers, neolithic tools of labor were bringing their skills to perfection. However, the state and law so far had not come into life.

Fifthly, the fifth level of social pyramid took in 'lodgers', representative of the spiritual world of man and society. Long-term reproduction processes in agriculture and stock-farming, related to annual or longer cycles, are impossible to undertake without accumulating knowledges and skills, and handing them down to next generations. The existence of ancient art, and a system of ethical values regulating pretty sophisticated inner-familial, inner-communal and inter-communal relations, can also arise no doubt.

Of course, the maturity of these elements in social structure should not be exaggerated, nor should ideas of the present-day be ascribed to them. But to disregard their formation is no less mistake either, for in them originates history.

Major stages in the history of human society. As far as the point of counting out is set, let us try to make out the outlines of main stages, coils of the spiral of historical progress, — *meaning succession of world civilizations* (table 1), in order to afford a closer view at this problem in the following sections.

Table 1. Conjectural chronological frames of world civilizations.

World civilizations		Transition al period	Formation	Maturity	Decay	Total Duration in centuries¹	Acceleration rate²
1. Neolithic	Chronologic al frames of stages Duration in centuries	10 th — 8 th mill. B. C. (Mesolith)	Late 8 th — 7 th mill. B.C.	6 th mill. B. C.	5 th mill B. C.	30 th — 37 th 55 — 65	
2. Early class civilization	Choronolog ical frames of stages Duration in centuries	4 th mill. B.C. (Aeneolith)	3 rd mill. B. C.	2 nd mill. B. C.	2 nd half of 2 nd mill. B. C. 5 — 6	20 — 23 29 — 33	1.6 1.9
3. Ancient	Chronolog ical Frames of Stages Duration in centuries	12 th — 9 th c B.C.	8 th — 5 th c B.C.	4cB. C. — 1 c A. D.	2 nd mid. 5 th c	12. 5 16.5	1. 7 1.9

¹ In the data of the top column, origin, transitional period and state of dereliction are omitted. In the lower column, the data include transitional period.

² Ratio of duration between proceeding and succeeding civilization

4. Media eval	Chronological Frames of Stages Duration in centuries	mid. 5 th — 8 th c 3.5	9 th — 11 th * c 2. -5	mid. 11* — mid. 13* c 2.0	mid. 13 th — mid. 14 th c 1.0	5.5 9.0	2.3 1.8
5. Pre industrial	Chronological Frames of Stages Duration in centuries	mid. 14 th — mid. 15 th c 1.0	mid. 15 th — mid. 16 th c 1.0	mid. 16 th — mid. 17 th c 1.0	mid. 17 th — 1730 1.0	2.8 3.8	2.0 2.4
6. Industrial	Chronological frames of stages Duration in centuries	1731 — 1789 0.6	1790 — 1850 0.6	1851 — 1913 0.6	1914 — 1972 0.6	1.8 2.4	1.5 1.5
7. Post- industrial (a forecast)	Chronological frames of stages Duration in centunes	1973 — 2020 0.5	2021 — 2060 0.4	2061 — 2100 0.4	2101 — 2130 0.3	1.2 1.6	1.5 1.5

It should be noted in advance that chronological frames of a civilization are delineated in regard to its epicenter. The latter sometimes moved about. Besides, duration of every civilization, as presented in this table, is of two dimensions: with and without transitional period, while their being in state of dereliction is omitted in both cases.

In [table 1](#) seven-world civilizations are taken in. First three included in the list — neolithic, early class, and ancient civilization — can be related to the historical supercycle covering the period of formation of society, its infancy and adolescence. The acme of this historical period is antiquity, which to the present day commands our admiration by the highest excellency of culture and spirituality. Three succeeding civilizations, — mediaeval, pre-industrial, and industrial, can be referred to, with certain reservations, as a stage of maturity. This type of society expanded well-nigh globally, forming a solid technological base, market multi-structured economy, and democratic sociopolitical order. It witnessed great achievements in understanding and transforming the environment, in developing the spiritual sphere and equalled nature's element in the extent of producing an effect both beneficial and damaging, on the biosphere. Thus all living entities on the Globe, to say nothing of mankind itself, are led to the verge of collapse, — that is, of course, if the negative option for the noo-sphere will be realized.

Rhythms of dynamics of local civilizations. Society's entering upon transitional period with emerging supercycle in the end is characteristic of the 20th Century. Post-industrial civilization will constitute the first phase of this supercycle. Whether it will be a period of prosperity for human community and a period of collective wisdom to enable the power of reason, and its material embodiment, to be employed for harmonious development of mankind and realization of the positive alternative of the noo-sphere, or it will be a lengthy period expressing the phase of decrepitude in the life cycle of mankind, is yet to be seen. Much as it would be comforting to suppose hopefully the first variant, the second one is not at all excluded. Mankind faces the greatest option of its history and the unexpected upsurge of number of conflicts

and confrontations on the eve of the third millennium are clearly proving the validity of alternative above.

The data of [table 1](#) help to reveal quantitative characteristics of historical rhythms. Duration of every following civilization (without transitional period) perfectly demonstrates the tendency to reduction: from 30 — 37 centuries from neolithic civilization down to 1.8 centuries for industrial. The acceleration rate reached its utmost under mediaeval and pre-industrial civilization. Later on it slows down. Transitional period was longest at the first stage (mesolith), to account for a lesser share in life cycle of each civilization (from 44 % in neolithic civilization down to 25 % in industrial). But while approximating the emerging supercycle the transitional period regains growing relatively longer. This can be judged from the following row of numbers, which indicates the shares that transitional periods account for in duration of life cycles of civilizations:

civilizations	1	2	3	4	5	6	7
share of transitional							
period in percents	44	31	24	39	26	25	31

Succession of world civilizations expresses gradual steps taken by human society while developing. These steps are identified by *epicenters of historical progress*. But sometimes the latter move about, which is especially true when supercycles succeed one another. As for the first three civilization listed above, the epicenter of progress was situated in the regions of Mediterranean plains, the Near East and the Far East, and Hindustan (Egypt, Mesopotamia, Greece, Rome, India, and China). Thus, even in this epoch world civilizations and the formation of local civilizations demonstrate a marked policenterism. The following three civilizations were a gradual shift of the epicenter of historical progress (China, India, Middle Asia, the Near East) westwards, first to Europe, and then to the North America. The new supercycle reveal a

tendency of eastward shift, up to the Pacific Rim (Japan, new industrial countries, the USA, China).

However, local civilization possesses the rhythm of their own, distinct of the world one. These civilizations appear in different time, sometimes separated by a millennial spread. Some of them die. Adjacent local civilizations synchronize their dynamics, which allows of identifying a few groups they are comprised in:

1. *The Mediterranean — Near East group.* The area where first local civilizations originated and reached their prime (Egypt, Mesopotamia, Syria, Palestine, the Middle East, Greece). In the next supercycle this region leaves the van of historical progress for the second echelon. Partially, it also becomes the target of colonial conquest by breaking-through European powers.

2. *The Asian group of local civilizations —* India, China, Japan, Persia, Middle Asia, with the succession of world civilization starting out almost simultaneously to the above group. The epicenter of global progress moved over these places in the early years of the second supercycle to be replaced with stagnation when the course of historical progress was interrupted with the onset of colonization. We find many evidences that a number of countries from this region began being involved into the epicenter of historical progress when the post-industrial civilization started.

3. The Western European region (not including its southern part) set out on its way by the path of history with a certain delay, compared with the Mediterranean neighbors. With the beginning of the second supercycle (pre-industrial civilization) this region broke through to the van, subduing to its rule the better part of the globe and founding the colonial empires — British, Spanish, and French. But with the end of industrial epoch the Western civilization is gradually yielding many positions.

4. Due to the distant isolation of the other continents, *American civilizations* originally developed by their own patterns, which have left enough blank spaces. The elder civilizations were virtually destroyed by the violent onset of European colonists. Instead new local civilizations

appeared affiliated originally with Western European ones, but however shortly acquiring their own rhythm. The USA entered upon the 20th Century as a world leader, a superpower. The development somewhat delayed in the South and Central America, but in the final decade of the 20th Century the evidences of historical progress growing fast and approximating to its epicenter are found everywhere on these continents.

5. *African* civilizations (apart from North Africa which is related to Mediterranean region), in so far as they fell behind at primary stages of history, were subject to the exploitation carried out by more developed regions for a row of periods. Even now Central African countries are sustaining most grievous conditions, with the South Africa being the one country close to the epicenter of progress. But the premises for recovering still survive in this spacious, region.

6. Since *Eastern European and North Asian* local civilizations are characterized with many peculiarities of their historical destinies, they deserve to be treated more exhaustive.

Table 2. The Dynamics of Russian Local Civilization.

The world civilizations	Chronological frames of civilization (incl. transitional period)		Duration of civilization (in centuries)		The lag of Russia from the epicenter
	in the epicenter	in Russia	in the epicenter	in Russia	
Neolith (incl. mesolith)	10 th — 5 th mil. B.C.	6 th — 3 th B.C.	55 —	35 — 40	25 — 30
Early class	4 th — 2 th mil. B. C.	2 th mil — century B.	29 —	15 — 16	
Ancient	12 th c B. C. — mid. 5 th B. C.	4 th c B. C. — 4 th c A. D.	16.5	11 — 12	4 — 8
Mediaeval	mid. 5 th c — mid. 14 th c	9 th — 16 th	9.0	7	2 — 3

Preindustrial	mid. 14 th c — 1730	17 th —	3.8	2.6	2.2—1.3
Industrial	1730 — 1972	1861 —	2.4	1.5	1.3—0.2
Postindustrial (a forecast)	1973 — 2130	1991 —	1.7	1.4	0.2 — 0.3

As shown in the [table 2](#), the neolithic civilization began on the contemporary territory of Russia, Ukraine, and Byelorussia 2 millenniums later than it did in the epicenter, which was due to the causes to be observed below. The two succeeding civilizations were not very manifest, and were gone through in accelerated rate (there was only region with rhythm near to the global one: North Black Sea region, cultivated by the Ancient colonization. During the period of early mediaeval civilization Rus' of Kiyev and Novgorod almost equalled the epicenter. But then the country fell behind the epicenter, after it sustained the feudal strife and Tatar invasion. In the 17th Century, in the epoch of Peter I and Catherine the Great, Russia managed another breakthrough and joined the leaders. In the mid-19th Century Russia fell behind once again, desperately trying to adopt results of industrial civilization making a headlong spread over Western Europe. In the very end of the 19th century, and in the outset of the 20th Century, the lag seemed to be done away. In the middle of the century, owing to innumerable sacrifices, the country became one of the global leaders in the military, scientific and cosmic spheres, though still lagging in the consumption sector. In the late 20th Century a deep crisis and centrifugal tendencies threw Russia back away to the second echelon of historical progress. By some apprehensions, the country may well find itself at the periphery of progress for infinitely long if this lag is going to increase. But the opposite trend, by which the potential for revival of Russia and countries associated with it is to be put into effect, providing them with another chance to catch up with the epicenter of world civilization, is by no means less real.

Against the background of the deep crisis, the question about the place for Russia in the global civilizational process stirred up violent discussions, as it occurred in the 2nd half of the 19th Century and 20s of the 20th. It is generally accepted rule to identify two major types of local civilizations. One is presented by the Western civilizations, with historical roots going back to antiquity, Christendom, individualism and democratic values. The vast majority of developed countries are associated with this type, however considerable they might differ by culture, historical destiny, and spiritual character of their own. Another type comprises Eastern civilizations, with cultural and psychological essentials vastly influenced by Mohammedanism, Buddhism, and other Oriental religions, and as much by the Asian mode of production, a strong role of the state, and by bureaucratic and communal principles clearly prevailing over individual rights. This type is presented by most countries of Asia, the North Africa, the Near and the Middle East.

Russia in the framework of rhythms of world civilizations. What type does Russia belong to? According to one view, with the geographic location of its historical center, sustaining influence of Christendom, and by historical linkage with Greco-Byzantine and Western European culture, Russia does belong to the Western type. According to another, the influence of oriental cultures (Tatar invasion, boundless spaces of Siberia, contacts with eastern neighbors) have exercised upon Russia on a historical scale determined the character of the Russian society. Thus, it is reasonable to relate Russia to the oriental world. Now, there is a third approach to dealing with this problem by which Russia is to be related neither to Western civilizations, nor to oriental ones. Instead it is supposed to constitute a separate 'eurasian' type, or to merely 'drift' between the East and the West. The last opinion is made clear in the works of L. I. Semennikova.

1. Russia is not to be seen as independent civilization. It is impossible to relate it to either type of civilizations proper.

2. Russia, as civilization, is no homogeneous society. It is rather a peculiar conglomeration of peoples belonging to different developmental

types and bound up with the common history to build up the unified state with Great Russian nation as its core.

3. As a geopolitical entity, Russia abides between two powerful centers of civilizational influence, that is, between the West and the East. Hence it includes peoples keeping with either Western or Eastern course of development.

4. While passing dramatic turning points of its history Russia was repeatedly 'shifted' to either (Western or Eastern) direction by historical whirlwinds. Thus Russia is to be more correctly referred to a sort of 'drifting' society at the interjunction of civilizational magnetic fields'. (46. P. 109).

It is difficult to uphold this opinion. As far as Russia, Ukraine and Byelorussia are concerned, let it be stressed, they constitute a separate local civilization with historical destiny, economic and cultural continuity, and type of spirituality of their own. Next, judging on where the majority of population lives, historical routes, and Orthodox Christian religion and culture, this civilization is to be referred to Europe, being more closely associated with the Western type. Of course, • it cannot be denied that this civilization has been strongly influenced by Eastern civilizations in certain periods. But can it be doubted, by way of illustration, that Spain does belong to the Western world with what it has certainly sustained the influence on the part of Arab culture? Thirdly, with considering all historical blows » and turning points, invasions from the East and encroachments from the West, Russia yet cannot be referred to 'drifting' communities placed at historical junctions, for it bears distinctive marks proving both its individuality as a local civilization and genetical origins as a civilization of the Western type.

The cluster of spirals of historical dynamics. Let it be summarized what have been said. The history of mankind can be thought of as a cluster of interwoven spirals. The major coils of general historical plait are presented by supercycles. Few of them are known as yet, properly speaking, merely two are, with the third one just getting under way. It might be suggested that such low numbers of observations would

impede making such a generalized conclusions about the major cyclical fluctuations. But it should be reminded that in laying the ground for the theory of big cycles in competition N. D. Kondratieff employed mathematical processing methods and logical analysis of data presented by two and a half cycles of this kind. Nevertheless, social dynamics that have followed in the next 70 years confirmed the prognostications of the genius. Quite apart from that, Alvin Toffler came up with the idea of three coils that historical progress has gone through during ten millenniums, with referring the onset of the third wave to the late 20th Century.

The supercycles are embraced by coils of world civilizations. We enjoy ampler historical data for making generalizations about regularities of cyclical dynamics in this case than in the previous one. Every supercycle takes in three civilizational cycles, thus their total number is seven, with the seventh one just having started. The tendency to acceleration of historical progress can be traced more readily. It is also easier to make out inner structure of every civilization, with stages (phases) of its origin, formation, maturity, flowering (maturity), decrepitude, sunset, and abiding in the residual state of dereliction for a few another bars of historical rhythm.

Every world civilization affects dynamics of local civilizations. The latter express a historical rhythm for a group of peoples and ethnoses with related historical roots and destinies. Every local civilization has duration of its own and a hand of cyclical dynamics. That is why historians who represent various nations hold so significantly different and contradictory approaches as to historical regularities. They look into a turbulent flow of historical progress from opposite banks, or from different islands, from different points of view. This helps to understand the multipolarity and relativity of historical progress, but fails to deny its universal regularities.

By taking up a general representation of regularities of historical process, let us enter upon the discussion of how these regularities were shaped on each major coil of the historical spiral with regard to main groups of local civilizations.

We will make use of the volume view of historical process, afforded by such approach, and examine the object in three dimensions, i. e. time, space, and vertical: over and along all levels of the pyramid of society.

CHAPTER TWO

ANCIENT CIVILIZATIONS.

2. 1. Periodicization of the history of ancient civilizations.

The original and most lengthy period in the history of society with the duration, if counted from the Mesolithic era, of more than 10 thousand years, or 80 percent of historical time, includes the Neolithic Age, the early class and the ancient civilizations. It was preceded by a three times longer period of the pre-history of society which began with the formation of human beings of the type known today, *Homo sapiens*, referred to by archeologists as Cro-Magnon. It was the Neanderthal after whom he came.

The pre-history of human society. With the onset of the upper Paleolithic Age, as glaciers fell back from greater part of Europe, Asia and North America, the predecessors of modern man who had gone through a certain row of developmental stages lasting for more than 2 mln. years, found themselves in significantly altered conditions. In that time, an event of great importance occurred in the history of the bio-sphere. Modern man, the acme of the evolution, Cro-magnon, came into existence. Later he was ‘promoted’ to a more honorable degree, — rational man.

Rational man was a result of biological evolution. Its main achievement was the formation of such a complicated, delicate and perfect tool of understanding as human brain. Every living creature is endowed with organs of perceptions, which aid adaptation to changes taking place in the environment. (Otherwise, if the latter alters drastically, a species or even a genus can become extinct). But man is the one creature to whom Nature

presented the gifts of processing perceived information, of making generalizations, and of speculation. Not only man does know how to adapt to an environment, but also how to transfigure it, and to fix its elements in order to meet his own demands.

Among the causes from which modern man began were these related with his corporeal structure and way of his life. For that instance, he learned to walk upright, to eat both vegetable and animal products. This diversified his nourishment and helped him to stay alive in critical situations. Also, he came to employ tools of labor, starting from quite primitive and changing over to increasingly complex as time went on. And he mastered the art of controlling fire.

Resting on the experience of hundreds of generations, social regularities were worked out, and the couple family came into existence as the basic cell of society, together with tribal community (a minor one, comprising from 25 to 50 men, and a bigger one, with 200 — 500 men). Families built primitive dwellings for themselves, or made homes in caves. At times communities set out on their nomadic ways in search of pastures. The numbers of population were very poor, about 1 head per 50 — 100 square kilometres, — meaning that a mere quantity of 2 or 1 thousand could well reside on area to match with that of Denmark.

Organization of production was evolving during the course of all the lower, intermediate, and upper Paleolithic Age. It was based on division of labor as to sex and age, or on an ordinary co-operation of labor functions. Men were occupied with hunting, fishery, or making tools to improve their opportunities for taking loot. Women were engaged in gathering herds and fruits, cooking, keeping up fire, and providing child care.

The development of articulate speech was a major contribution to social intercourse, aiding distribution of accumulated experience and original knowledge. Then primitive art began, with large galleries of rock carvings surviving in caves which depict animals and hunting scenes. Such are Altair ??cave in Spain, called by one archeologist ‘Sixtus Chapel of today’, Bhumbetki ??in India, with paintings covering walls of 500 caves (8. P. 74). Numerous statuettes featuring animals and women were discovered in the Montespan ??(France), Kostenki (near Don) caves. In Siberia, there were finds

of female figurines made from mammoth's tusk, and the Kapov cave in the Urals boasts images of mammoths, horses and other animals. Primitive beliefs such as totemism, animism, hunting magic, funeral rites, and rites of initiation and their like gained priority.

As vividly seen from above, rational man came to have several social distinctions, let alone biological ones, to separate him from his predecessors. These were, in the first place, speech, and then demands and abilities, both developed sufficiently. Among other distinctions there were manufacturing and use of numerous tools of labor; basic co-operation and division of labor accordingly to age and sex; family and tribal community; original knowledge; primitive art; rules regulating behavior, and animistic beliefs. But majority of levels in the pyramid of civilization were far from being filled. Appropriation of product was still to shape in an adequate form, as it did not yet come beyond personal possession of some instruments. Outcome of labor was in the possession of the community with products of hunting, fishery, and gathering being distributed by equal shares. Social classes, the state and the law so far did not exist, and social structure was primitive. In view of these circumstances, this period of society cannot be referred to the first stage of history. Again, this was just the pre-history of society, lasting for long ages.

Changes in the natural habitat of humans deserve a special reference. If arguments still arise among archeologists concerning the place where rational man came to be, (though it seems hardly to be set down to single geographic point), no one dares to doubt that primitive tribes settled down over vast territories in Europe, Asia, Africa, North and South America before the end of the pre-historic stage.

What are the main results of this stage? Here are some of them, according to Karl Jaspers' assertions.

‘1. *Control of fire and tools.* There is little chance that we would treat anyone who lacks these properties as human.

2. *Emergence of speech.* The way in which animals keep communications by spontaneously expressing themselves by many kinds of signals is something entirely different from what constitutes a human ability to indicate senses realized and conveyed by means of speech and referred to the world which is being said and thought.

3. *Methods for man to exercise upon himself violence, which is instrumental for his formation, for example, by taboo.* That man cannot be entirely a mere part of nature is in the very essence of *his* nature. The reverse is rather the case: it is by means of art that he forms himself. Hence artificiality is his essence.

4. *Formation of groups and communities.* The main difference to separate human community from groups and relations of domination and subordination as established by apes is the human capacity to realize the sense and significance of such a community.

5. Mode of life which is broadly built up with *mythes*. Human life is largely affected by use of images which penetrate in existence, patterns of life within the family, social order, and specific conditions of labor. In their infinite interpretation and extension myths are essentially a form of self-consciousness and realization of one's own being...' (63. P. 67, 68).

Thus, it was a time when social genotype went through a formation. This genotype is manifest not only in creating tools and technologies to support life and to gain more protection against the fancies of nature, but primarily in developing means of communication and conveying information, in the formation of human communities, ethical regularities, the spiritual world, and in the self-awareness of humans.

Transitional period: the Mesolithic Age. What are grounds for referring the Mesolithic Age, dated about 10 — 8 thous. years B. C., in North and Central Europe, and about one or two millenniums later than this, in America, to transitional period? It was a time when a major ecological crisis broke out. Climate conditions, flora and fauna changed throughout the majority of inhabited land. The number of large animals decreased, and the main source of staple foods, hunting, became less efficient.

Mastering bow and arrows was an outstanding achievement of the Mesolithic Age. 'Bow, arrow, and string, — F. Engels noted, — taken together, make up a complex instrument, the very invention of which suggests some experience to be accumulated for quite a period of time, and state of mind developed to a sufficient extent, and, therefore, contemporary acquaintance with many other sorts of inventions'. (34, V. 21. P. 29). Heads

and points of spears, arrows, harpoons, darts were produced. People began employing nets and canoes in fishery, and learned to make earthenware.

Primitive communities were forced to look for and to develop new sources of nourishment, new methods of reducing the extent of their dependence on nature, on the natural re-production of plants and animals.

This process, however long it took, resulted in a gradual transition to the artificial re-production of staple products of nourishment, from a consuming household to a producing household, and to the beginning of farming and cattle-rearing. Barley was the first cereal to be grown. It was soon joined by crowd of others. Grain was sown in Palestine, the Middle East, and the Iranian plateau since 10th — 8th millennium B.C.; in Egypt, on the Danube River, and on the Balkans before 6th millennium B. C.; and some time later it appeared in India. Sheep, goats and donkeys became domesticated during the Mesolithic Age, although the dog did earlier, and cattle and pigs did later. Of course, working land with horny or stone mattocks was but low-yield, and domesticated animals yielded little milk, wool, and meat. But domestication set out a major technological breakthrough, one that aided the formation of new economical order. This tendency led to the differentiation of property among families and communities by labor efficiency. People were urged to develop pastures which previously stood idle, or plots of land fit for agriculture. Communities found themselves involved in the struggle to take over pastures, hunting areas and crops. Some carvings which are dated from that period show martial scenes (i.e. the carvings to be found in the rock shelters of Levant in Spain). Hunting weapons (bow, arrows, spears and clubs) tended to become used as means of extermination of one's neighbor.

Agriculture necessitates that people lead a settled life. Thus, settlements provided a rather comfortable dwelling began to spread, at times framed by a wall. Such settlements are situated in Palestine (Jericho), in the Middle East (Chatai-Huyuk), Syria and India (Bagor). After having exhausted their pustures, cattle-breeders were forced to nomadize. This resulted in clashes with communities dwelling over the plains in which nomads emerged. In the 7th — 8th millenniums B.C. Eurasian tribes settled in vast masses over North Africa and throughout the steppe pastures of the Near East. (24. V. 1, p. 33-34)

Changes came over the spiritual world of man, too. Communities developing cattle-farming and agriculture relied on rather higher a level of understanding of the processes in nature, of annual cycles in cultivating crops, long-term cycles in stock-raising, and newly acquired manufacture skills. At the same time, hunters perfected their skills, too, as they discovered new methods in their own trade. Structure of the nearly-born society became rather complicated, with many occupations emerging plentifully (processing stone fragments, wooden and bone tools of labor, cultivation of lands, stock-riding, pottery, construction, etc.) This led to emergence of more complicated and differentiated rules to regulate economic and inter-communal relations and distribution of products. By overcoming essential antagonisms which constituted the Mesolithic epoch, a new civilization of the Neolithic Age was emerging from its inner depths.

The Neolithic civilization. The beginnings of the history of civilization is associated with *the Neolithic revolution*. Its contents consist of the process by which occasional raising of cereals and episodic domestication of wild animals was being replaced by more regular and more purposeful appropriation of staple food production based on the development of agriculture and cattle-breeding. This was an immense revolution, it spread for millenniums and brought about dramatic changes in way of life of primitive people. Man as single creature did not suffer much change for three millenniums. But the family and primitive community gained conditions of living which were more sustainable. Both the demands of man and the opportunities to satisfy them extended. Products of nature which were utilized by man for nourishment diversified, and variety of instruments and materials were put into use.

Such progress as was indeed accomplished in development of productive forces and skills of workers and craftsmen would have never been seen, had not it been for *the social division of labor*. The initial fields of activity (hunting, fishery, gathering), shared among workers primarily on age-and-sex principle, were now supplemented by new trends of occupation in which groups of people and then whole communities had been engaged, such as raising crops in agriculture and stock-rearing. For these purposes they utilized a necessary set of tools, which, among others, included those for

processing produces of agriculture and of stock-farming, i.e. pounding grains, and currying, and baking. Separation of *agriculture and stock-breeding* as trends of occupation was the first major division of labor to contribute considerably to its efficiency.

Since a set of tools used both in agriculture and stock-breeding tended to become rather complex, it was essential for accomplished skills to be handed down to following generations. And that was how the second major division of labor came about. It was separation of *handicraft*. For example, in Kszemenki, Poland, six mines dated the Neolithic period were discovered, apparently used for the extraction of striped flint, set at the depth of 4 — 11 meters. Some of the mines were connected with a corridor reaching 60 centimeters at the ceiling. (25, V. 1. P. 82). Ceramic vessels decorated with ornaments were made to keep seeds, crops, meat and to cook meal on fire. Archeologists date stages of the Neolithic Age according to the patterns of ceramics. Thus, the culture of so called Bandkeramik implies a period with prevalent slash-and-burn system. Archeologists also identify the culture of funnel beakers, common throughout North Europe in 4th — 3rd millenniums B. C. At the close of the Neolithic revolution wooden plough, with harsened oxen, entered into general use. The second division of labor in cattle-breeding tribes brought invention of spindle whirl, loom, machines for working of leather, and leather and cloth sewing.

Work in agriculture, calling for, as it did, a settled way of life, led to the increase of average size of community, and to the emergence of regional community, finally resulted into evolving bigger permanent settlements. These settlements, or cities as they soon came to be called, comprised dozens and scores of dwellings, sanctuaries, craftshops. City itself was encompassed by a moat. By way of illustration, the Tripolye culture on the territory of modern Ukraine is characterized by settlements consisting of 20 — 50 houses each which make up concentric circles over the area of 2 — 3 hectrars (5 — 7, 5 square acres). The settlement in Dobrovody (Ukraine) covers the area of about 250 hectares, with houses situated along 9-10 circles, and population estimated as 10 — 20 thousands. (Ibid., p. 84). For all practical purposes, it can be called city. Neolithic cities are discovered in the Middle and Near East. Skillful workers and architects were needed for production of building materials, and

housing, fortification and temple construction. Thus the third social division of labor came in. This was the separation of *construction* as a particular line in activity of social groups.

With the growing complication of social structure, and the necessity to follow natural cycles, the fourth major division of labor came into being, — the separation of *chiefs, priests and warriors*. This was determined by the importance of keeping to sewing periods, of reaping crops, searching best pastures. It was necessary to distribute labor efforts as to different kinds of occupation, so especially due to the seasonal character of agriculture and stock-breeding, to attend these occupations with rites, religious worships, and to protect settlements and property against attempted violations on part of neighbors and nomadic tribes.

Economic relations underwent cardinal changes. With regard to fishery, hunting, gathering, natural resources were then considered no man's land, not making up a subject matter of anyone's right. In spite the fact that the community was determined to set up its priority over hunting lands, borders that separated them were never fixed severely, shifting occasionally any time as the community shifted to new and richer lands or in pursuit of wild herds. But the situation was different in agriculture, what with having to spend years to develop plots of land fit for working and to utilize the best pastures for cattle. The scope of appropriation enlarged in range, as *communal ownership* for an increasingly wide scope of means of production, including best natural resources, set itself firmly into life. Thus, the Neolithic civilization is characterized by domination of communal ownership and equalizing distribution throughout.

The family and community's tendency to be more specialized on certain trends of activity, due to the progress in social division of labor, was bound to result into development of exchange in products of labor both within and between communities, with exchange frequently built up according to a chain principle. Otherwise it would have been impossible to meet personal and production demands. Within a single community, exchange was carried out in a natural, non-equivalent form. Exchange between specialized communities was going to be set up on a regular basis, which led to a certain equivalence. However, a universal equivalent, to say nothing of a pecuniary form, was not

yet worked out by economic life. It can be supposed that commodity production was initiated, and that manufacture began, providing some goods in quantities which went beyond consumption demands of the family and community and thus were intended for exchange with other communities. This was a contribution to the formation of markets, but of course in a primitive form. The erection of the 'economic' level of social pyramid was therefore almost completed during the Neolithic epoch, though the primitive communal system still dominated on a greater part of communal lands.

The next, *sociopolitical* level was a very slender sight. Only few of its elements came to existence so far, with priorly homogeneous community falling into social dissolution. Elders of community, tribal chiefs, sorcerers, wizards, and military leaders were gradually annexing the best pastures and arable lands. While defeating traditional equalization, they took over the best and constantly rising shares of communal wealth, in order to have it in their full disposal. Large inter-communal associations, or tribes, first appeared during this period, especially on irrigated areas. Military conflicts and cattle-raiding to gain better pastures, lands, granaries were spreading. Neither the state, nor the law and bodies to fulfil their aims so far do we observe, but the premises for them to appear already exists. Owners felt a need for a mechanism protecting their property.

As for the top level of the social pyramid, *the spiritual world*, the changes we find here are no less considerable than those in the technological and economical base of society. First of all, the understanding of the external world rose significantly. It is impossible to practice agriculture and stock-rearing according to natural cycles, or to be a craftsman, or a builder, without enjoying profound knowledge and skills which can only come down from one generation to another. The beginnings of sciences, such as astronomy, arithmetics, biology, medicine, researches in natural material, and agronomics were laid down. Though they of course were far from allowing for abstract generalizations, but the primary philosophical outlook of the period made itself felt in structures of beliefs and myths imposed on, and maintained in, the spirituality by wizards and priests. The entire Neolithic art — painting, ritual music and dancing — demonstrated these myths.

Religious beliefs were tending to become increasingly sophisticated, as

they set up and supported many ‘taboo’ restrictions. The morals and initial religions of this period are difficult to separate. With knowledge evolved substantially both in range and diversity, it took a longer time now to transmit the spiritual wealth to the following generation.

These are general outlines of the society which came into being and established itself during the course of the Neolithic revolution. The Neolithic civilization can be divided into several stages: the early Neolithic Age which extended for about 7 — 6 thousands years, with the epicenter in the Middle and Near East; the mature, or medium, Neolithic Age (the 5th — beginning of the 4th millennium), when this civilization first revealed its potential, as it was spreading throughout the plains of the Nile, Euphrates, Indus, then coming over to the Yangtze, and Central, Northern, and Eastern Europe. The process of the ‘neolithization’ was going on slowly. It took about 2, 800 calendar years for the productive economy to plant in Northern Europe. But it was developing more easily on the coasts of the Mediterranean Sea. (Ibid., V. 1. P. 71).

The first signs of the Neolithic Age civilization’s exhausting itself are to be found by the 4th millennium B. C., when the transition to the next stage, *the Aeneolithic Age*, began.

During the Aeneolithic period (the copper-stone age) metal — copper, gold, and, lastly, bronze — was put into use as a dominant material. Stone tools, even ‘microliths’, the most perfect ones, consumed too much labor in manufacture and were too unsafe in use to satisfy diverse and ever-increasing demand. So-called native materials such as copper and gold which now entered into use proved to be much more handy in work and more strongly constructed than stone ones had been. It was important that they could be shaped in various forms. They allowed for mixture of metals. Thus, the alloy of copper and tin gave bronze.

However, the deposits of copper, gold, and tin are not frequently found, and could not be utilized by most of the tribes in the Aeneolithic Age. People densely populated areas which were good for cultivation, the result being that the growth rate of the population was falling off. As has been asserted, the annual growth rate amounted to 0. 9 man for 1, 000 people for the year 5, 000 B. C., with a total number of population about 30 million people,

but the annual rate fell in 4.5 times, down to 0.2 man, in 2,000 B.C., for the population total of 50 mln people, increased by a mere 20 mln. (54, P. 151). Many wars were waged to conquer lands rich with fertile soils or with deposits of ore. Disorder and chaos began to rule social dynamics. The domination of communal property and equalization turned up an impediment for the development of productive forces. More able and diligent workers did not gain any priority over others, and were not sufficiently motivated to work actively.

Therefore, the crisis which had overtaken technology, economic and social life seems to be characteristic of the Aeneolithic epoch. Society faced with the need of inventing and assimilating absolutely new material (bronze), new technology (systems of irrigation), and to switch economic relations to private property. This inevitably cleaned the ground for classes and the state.

Early class civilization (the Bronze age). If the transition towards reproduction economy proved to be the core of the Neolithic revolution, it may be well stated that the kernel of profound revolution heralding the formation of second civilizational stage contained the radical changes at the third and fourth levels of the social pyramid. The epoch-making landmarks were the emergence of private property, monetary circulation, classes, and the state, — all of them social inventions, which, as they were slowly being modified, were to determine outlines of all succeeding civilizations. Each of these institutions was called into being by the course of social progress, each one brought social benefit of a certain sort.

Communal property was a necessary form of appropriation as practiced by minor communities. It enabled them to survive, and for progress to move slowly under the uncertainty and unsteadiness of natural environment, low labor efficiency, and absence of surplus products. But now it stood as an obstacle on the way of the progress. Workers who employed more efficient technologies in cultivation, or in cattle-breeding, or in produce processing, or in manufacture of trade goods, all of them creating a surplus product, tended to become opposed to the equalizing system of sharing profits with their less efficient fellow-workers. *Private property* formed a major resource and stimulus for enhancing the efficiency of labor. Property soon became inherited. Being passed on to a next generation (commonly along a male line),

it was kept inside the family.

It can be seen, therefore, that it was a time when a multilateral economy, to put it in the modern terms, originally appeared. As soon as this equalization was overcome, private appropriation of means and the results of production turned people's interest to enlarging property for themselves and their families. It set up the mechanism responsible for the motivation to raise the productivity of labor, to trade in products in search of profits, to gather wealth, to build better houses, to acquire jewelry and decorations, and to order statues. All these made an immense contribution in accelerating progress.

Private property, soon after it came out from communal one, developed into two main forms. At the top of regional community, taking over the right to dispose of best lands, cattle, booty and spoils, and, lately, prisoners whom they seized in their battle raids, rested tribal elite, i.e. those who secured this property for themselves and attempted the conservation of such orders. Exploiter classes were drawing on tribal chiefs, priests, war leaders. Another pole of the community was made up of small holders: farmers, cattle-breeders, and craftsmen who seized and appropriated a part of the property that had earlier been in individual use and aided to re-production. These men were subject to exploitation, though in a concealed and indirect form. They paid taxes, set forth men and weapons in case of martial actions, or became debtors. Sometimes they were enslaved for debts. Small ownership was to some extent involved with communal due to the common pasture, the insurance seed stocks, etc.,.

Economic relations of the early class civilization were tainted by conversion of human being into objects of law, in other words: enslavement. There were mainly war prisoners, or at times debtors converted into slaves by their fellow tribesmen. Originally, so far as the functions that slaves performed yielded losses, which is due to the fact that they were never performed without supervision and compulsion, it was general practice to murder war prisoners, or convert them into inferior members of the community who enjoyed diminished rights (home slaves), or were victimized at religious rites and funerals of elite. But as the times went on, the slave labor began to yield a surplus product, and the slave-holding economy came to be wide spread. (Though it was never in domination in North and Eastern Europe). However,

some research made by Russian and foreign scholars demonstrates that the economic base of civilization during the Bronze Age was not built upon the slave-owning grounds. The bulk of surplus product to be appropriated by the exploiter classes and the state was created by the labor input of peasants and craftsmen, and also by bond workers belonging to the state or the temple. The other marked feature of the Bronze Age is the hierarchicity of ownership. From the top of the pyramid where he rested, the supreme and all-mighty ruler reigned the community together with priests.

As regular exchange grew on, the society faced with the need of an universal equivalent in which value of many goods could be materialized. After taking on many claimants for this role, mankind secured the functions of measure of value, circulating medium, and means of accumulation for metallic money, — first gold, and then silver.

Structure of reproduction saw constant extension and more complexity, together with an improvement of organization. This was a vital demand set by the regulation of irrigational system in the plains of the Nile, Tigris, Euphrates, Indus. A hierarchical structure of reproduction established itself on different levels. The ground level was presented by the farmers', or cattle-breeders' or craftsmen's family, the neighbor community, half-commodity or commodity production; on some territories there was regional re-production (nomes of Lower and Upper Egypt); furthermore, there was re-production on the state level (throughout the whole of Egypt, Assyria, Babilonia and some other areas). Steady markets were formed in the scales of individual countries. For though they failed as yet to involve food or clothes for the bulk of population, they did involve the sale of slaves. Trade flows began to circulate between countries.

Productivity and division of labor witnessed a real leap. Good crop capacity was a feature of the irrigational system. Trade and handicraft, production of bronze tools and instruments, arms, adornments, various cloths, fabrics, footwear, medicines, and works of art were on the increase. The pyramids, remains of palaces and temples which survived till the present day, all testify to the development of construction. As known from manuscripts referred to the early Egyptian kingdom, the mixed royal economy had already come into existence in that time, including arables, pastures, orchards,

vineyards, elaborate cooking, workshops of many crafts, and ship-yards. Aside from this, there were temple enterprises, and private households. Many occupations appeared for the first time, such as farmers, herdsmen, fishermen, gardeners, poultrymen, bakers, brewers, copper-smiths, jewellers, stone-masons, potters, weavers and sandal-makers, carpenters and joiners, house and ship builders, artists, sculptors, musicians, singers, dancers, hairdressers, accounting clerks, scribes, stewards, over-seers and slave-drivers. (24. V. 1. P. 149, 152). Everyone could take advantage of the differentiation trends in human activity to acquire skills, to perfect instruments and to reach eminence in one's own field of handicraft. This laid down the groundwork for acceleration of technical and economic progress. J. Bernal writes about the upsurge of technical innovations that was taking place with the beginning of the urban life at vast riversides of Mesopotamia, Egypt, India and China within 3 200 — 2 700 B. C., followed by the long period of stagnation. (7. P. 82).

Meanwhile, an economic and social relationship of great complexity and antagonism resulting from the imposition of private property, inequality and forced labor could hardly rely on mere support and regulation by the morals and institutions of community homerule. Since that, the specialised machinery of the state was due to come into being in due time. This was machinery to perform functions of domestic regulation and defence (or aggression). Thus *the fifth major division of labor* came to be. This was the emergence of certain groups of people who executed professionally functions of the state rule and administered justice. These could be Pharaoh, King, courtiers, military chiefs, judges, militia, etc. The state took up some economic functions, too, such as creating irrigation systems, construction of pyramids, temples, protection of ownership, and monetary control (mintage).

The wealthiest people in the state, and its top governors could well afford to retain architects, sculptors, artists, dancers, chroniclers, and astrologists. Schools for scribes with professional teaching sprang up. All of these were signs of the sixth major division of labor. Big cities, palaces for pharaohs and kings, pyramids for the deceased, temples and other cult-buildings were erected.

Meanwhile, the process of isolation and rise of the spiritual sphere

(fine arts, music arts, architecture) got underway. The invention and learning of written language was the second information revolution. (The first one is taken to be the acquisition of the articulate speech at the dawn of mankind). In clearing empirical grounds for natural and applied sciences there was an opportunity to effect control on systems of irrigation, smelting, ship-bulding, long raids, and sea journeys. The solar calendar, solar and water clocks were created; the beginnings of the mathematics, anatomy, medicine, construction and agricultural science appeared.

The mentioned changes in social life were both pre-destinated and succeeded by the alterations which came over man himself, now as he managed to cast off chains of social levelling. For an individual to attain success and prosperity, he or she felt compelled to acquire knowledge and skills, to display strong will, and to intensify social intercourse and exchange in knowledge and trade. The progress was made due to the enslavement of another part of former community, seizure of slaves and forcing them to labor, and the gravest forms of savagery and oppression. Nevertheless, it was the progress.

Another event of global historic significance which took place in this epoch was the so called *urban revolution*, the emergence of the network of cities whenever there were centers of local civilizations. Among the premises of this revolution were rapid growth of population both in numbers and density, development of construction and craft, formation of administrative centers of newly-born states, and need for their being safely fortified for protection in course of unceasing warfares and raids of aliens. The larger cities may have included thousands of inhabitants; for example, Mahenjo-Daro (India) covered the square of 2. 5 sq. km. and was populated by 100 thousand citizens. It was subdivided into the strongly fortified citadel and the lower town, also having granary, water-supply, sewerage and baths. (8. P. 95-97) The extent to which crowds of people packed the town was almost overwhelming, but it formed the stimulus for a rise in construction and trade, the spread of exchange, the creation of a multilateral urban culture, and the building of magnificent palaces and temples.

Conventional assertions in regard to this civilization are to be reviewed and partly superseded, so that the emphasis be laid upon objective evaluation

of contributions made by this period to the onward history of human society instead of being fixed upon the savagery of slave-owning exploitation and rude customs of those days.

Therefore, all the levels and cells of social pyramid were settled during the civilization of the Bronze Age. The re-production of both the material and spiritual wealth, as well as economic and social relations was carried out on a regular basis. Ancient civilizations covered now considerably greater areas. Listed below are the epicenters of the Bronze Age scholars are agreed about: Sumer, Egypt, Mesopotamia, India, the Kingdom of Hittites, and ancient China. As regards Europe, three centers of cultures are identified here; Creto-Mycenaean culture (Minoan civilization, the early Helladic culture of Greece); Millarean culture on the Pyrenee, and Maikop culture in the Chinese North-West. The 3rd millennium B. C. saw the great migration of peoples, which resulted into the technologies and cultures of the Bronze Age spreading over immense territories of almost every continent.

Like in all other historical cycles, in the dynamics of the civilization of the Bronze age there are three stages to be identified according to epicenters of progress, viz. formation and spread (the late 4th - the early 3rd millennium B. C.); maturity and flowering (the second half of the 3rd millennium); dawn and decay (the most part of the 2nd millennium). For some of the local civilizations a rather more accurate classification is attempted by historians. Thus, in the history of ancient Egypt they identify Early Kingdom (3 000 — 2 778 B. C.; more than 2 200 years); Ancient Kingdom (2 778 — 2 263 B. C.; 515 years); the 1st transitional period (2 263 — 2 160 B. C. — about 100 years); Middle Kingdom (2 160 — 1 785 B. C.; 375 years); the 2nd transitional period (1 785 — 1 580 B. C.; 205 years); New Kingdom (1 580 — 1 085 B. C.; 495 years); the 3rd transitional period (1 085 — 950 B. C.); Late Kingdom (950 — 525 B. C.; 425 years). Early Kingdom may be referred to the transitional period in the formation of local civilizations under consideration; the 3rd transitional period and Late Kingdom may date the period of decay. In such a way, the three traditional phases of the cycle of civilization can be observed. Every transitional period, as ascertained by historians, is a time when famine and abandonment sweep over formerly flowering cities, a time for division and unrest to burst onto society, for breakup of trade relations, and for foreign

invasions. All this goes to show that within single civilizational cycle we find the clear outlines of long-term cycles which are analogous to the Kondratyev's cycles of the present day, but which are longer than the latter are. Compared with slave-owning countries, the Bronze Age enjoyed a much greater area of extension.

There are some features of civilization of the Bronze Age to be found in 2nd — 3rd millennium B. C. in Eastern Europe, after a rather short period of anaeolith (identified by use of copper goods in some local cultures). There were centers of civilization in Prikarpatye (at the East of Carpathian Mts), on the Caucasus, and on the Urals. Exchange between tribes and tribe associations, which mastered and developed metallurgy, from the one hand, and those engaged into agriculture and farming (Triolet, Koban, Andronovo, and Fatyanov cultures), from the other, was carried out on a permanent basis. The patriarchal family, with ownership of private property to match communal one, became the primary cell of society. Unions of tribes emerged, heralding the forthcoming of the state; tribal elites were taking shape, and taking over a bulk of communal property. Still, powerful states so far did not appear. Communitites were scarce on vast territories, and the irrigational system was not yet created, nor were there any big cities. The stages of social division of labor which were examined above were gone through with delay, and were rather less distinctively delineated on these territories. Occasional inter-actions with the centers of progress were slack, and the exchange of goods and cultural values was being carried out mainly within local settings.

The transitional period towards antiquity goes back to the late 2nd — the early 1st millennium B. C. The characteristic signs of this period are the decay of formerly powerful states, beginning and formation of new breeding grounds for local civilizations, and the shift of the global progress up to the Northern Mediterranean region where ancient civilization was developing.

But of course this stage was taking place within certain limits and geographical borders. Bound to fertile plains and riversides, destined to retain opportunities provided by Nature in making bronze instruments, and to experience constant need of re-filling their labor resources by violent warfares and seizure of slaves, the ancient slave-owning states could not continue to satisfy the demands of an ever-growing population and of the elite. Unceasing

wars and levis hit re-production capacities of small holders, craftsmen and tradesmen. Confrontation between pharaohs, priests and local rulers was running heavy now, undermining the unity and military power of countries. Yields were diminishing on saline irrigated soils, and natural growth of population was falling off. States which had been the centers of past civilizations were now breaking up into separate parts and consequently defeated by their belligerent neighbors.

Ancient civilization did not rise from empty grounds. It had priorly assimilated technical and economic achievements of the peoples of the Near East, Egypt, Middle East who enjoyed both tight multilateral relations with tribes of the South Europe and experience of the early class local civilizations. The latter are presented, in the first place, by Creto-Minoan civilization which originated on the verge of the 3rd and 2nd millenniums and reached culmination in the 16th — the first half of the 15th Century B. C. The palace of the legendary king Minos, known as labyrinth, is counted among the most eminent monuments of this culture. Its set of quarters consisted of a number of structures with the total area of 16, 000 sq. meters, and 300 chaotically arranged premises. The island saw the flowering rural culture, mighty centralized state and strong navy. But in the middle of 15th Century Crete suffered a horrible catastrophe, which was caused either by eruption of the volcano on the island of Santhorin, or by hostile raids of Achaean Greeks, and turned the palaces into ruins and reduced population to very poor numbers. Crete was thrown to periphery of progress for many thousands of years, though its heritage contributed to the formation and the future excellence of the Greek culture.

The other source was presented by the Achaean (or Mycenaean) civilization. Its culmination falls upon the 15th — 18th Century B. C. It is distinguished for a number of palaces and magnificent royal burial-vaults (tholoses), developed royal and court economy, from which an abundant archives survived, deciphered as late as in 1952. Achaean kings allied their forces to launch into the campaign against Troy, as described in Homer's 'Iliad' (the mid-13th Century B. C.) But the Mycenaean civilization, too, perished under succeeding waves of barbarian invasion from the North. Palaces and cities were ruined and set fire, crafts and trade fell into decay, and the

population diminished drastically. The Dorian conquest that followed was to throw ancient Greece back for still a longer time distance, the result being the obvious primitivization in cultivation technique, trades, crafts, and construction. Against such background, first indications for iron to be wrought and, consequently, tempered in the 9th Century B. C. are quite conspicuous by themselves.

Ancient (classical) civilization (the Iron Age). Ancient (classical) civilization was the utmost culmination to be attained by first wave of human history. It was a time of mankind coming through its adolescence and youth, — an uneasy yet delightful age that formed the social genotype embracing abundancy and variety of elements. The chronological frames of ancient (classical) civilization are set apart for more than 12 centuries, from the 8th Century B. C., up to the middle of the 5th Century. Though the beginning of the Iron Age can be dated further back for the 4 centuries, and the phase of dereliction of Byzanthian Empire can be extended up to the late 1st millennium. A couple of local civilizations which made up this epoch are seen in clear outlines through the haze of history. These are Greek civilization, which had its Golden Age in the period of Athens, the 5th — 4th Century B. C., and Roman civilization (the Golden Age in the 2nd Century B. C. — 1st Century A. D.). Sometimes the Hellenistic, or Alexandrian, Age is identified. The local civilizations of China and India enjoyed their own movement and epicenters.

What can be judged as the main achievements of the classical civilization which added to the genotype of human kind and its historical heritage?

1. As the most valuable accomplishments of this epoch we regard the apogee of human personality, the priority of the spiritual sphere, the rise of mythology, science, art, the emancipation of human being, and the liberty (by the way, the word *liberty* originated in Athens the 5th Century B. C.). There is no doubt that this liberty was far from being a common benefit. ‘It is in the ancient society that a slave was a slave in its utmost, much as so as a free man was a free man. And it is in Greek poleis that the idea of liberty (‘*eleutheria*’), meaning the absence of whoever’s supremacy and domination over a certain

person, — the idea bequeathed by Greek polis to all mankind, — was to come into existence.’ (24. V. 2. P. 24 — 25).

The greatest division of labor to occur in history — the separation of the mental and manual labor — manifested itself owing to a leap in productivity of labor, and increase of surplus product, both destined by use of cheaper and more efficient iron tools. This resulted into an economic climate enabling part of free citizens to indulge in philosophy, art, mythology, politics, adventures, history.

A great victory of that period was won by the beginning of philosophy, a primary system of abstract knowledge which acquired universal, all-embracing character. Astronomy, mathematics, medicine, history, law, economics also originated from this epoch. Schools of philosophy evolved — Plato’s Academia, Aristotle’s Lyceum, and Museum of Alexandria. The educational system, aiming at specialised training of young generation in sciences, fine arts, various crafts and martial arts, was built, involving institutions which ranged from schools for philosophers to schools for gladiators. But flight of a released thought was torn away from practice, with abstract sciences having nothing to do with technique. Alexander Lossev noted that thinking, which was not being accompanied, as it was, by manual work, remained remoted and contemplative, while seeking to comprehend and not to re-arrange the reality. (33, P. 423). But then it is an only inevitable trait of science at the dawn of its origins.

The spiritual sphere, as it evolved during the period of antiquity, embodied in the world religions, was marked by the transit from polytheism towards monotheism. This transition was in many aspects influenced by the growing centralisation in both political and economic spheres. The period 6th — 5th Centuries B. C. was a time for Buddhism to come into existence, soon breaking apart into 18 sects, and about the 12th Century partially blending with Hinduism. Christianity appeared in eastern provinces of Roman Empire in the 1st Century A. D. After being victimized and persecuted for some time, it was made the official religion and suffered the split in 1054, when it broke up into Western (the Catholic) and Oriental (the Orthodox) counterparts. The world religions did well with keeping the sphere of ideology in order and exercised influence upon the other aspects of spiritual life. They were the important

factor of integration, as they assured the intercourse of different nations and states which belonged to one and the same confession.

2. *Democracy* was built up, as a pattern of social and political relations which best permits to meet claim of self-rule among the community of free men. As a unifold entity, this order is very characteristic of Athens of Pericles' days (the 5th Century B. C.) This was, let it be no mistake about the matter, the democracy for the very few, which yielded almost nothing to slaves, women, young people, aliens. But the main principles behind the democratic political order, reading much the same that they were as worked out by the Golden Age of Greek civilization, are still to be found in programs of democratic parties and movements in all countries. A complex mechanism by which democratic state continued to function and which continued to be reproduced later in variety of modifications in many succeeding civilizations, ranging from cities of Italy, Hanseatic league and Novgorod Republic to modern democratic states, was first launched in Greek poleis and then examined in Rome. Systems of law, as they exist today in the countries of 'civil law', are greatly indebted to the highly elaborated legal intentions of Roman law.

3. For the political and economic life of the antiquity, the formation of, and the domination exerted by, *poleis* stand perhaps as the most telling peculiarity. Poleis were independent, home-ruled cities-states with many features of the community. 'Peculiar type of ancient property originated there, poleis property. For practical purposes, it implied that to exercise the right of ownership of land was allowed only to general members of city-state. Apart of rights to land, slaves, means of production, citizens of city-state enjoyed the right to participate in self-government and to share the income of the polis. The unity of their interests are both their privilege and their obligation. The civic solidarity proved to get along very well with individualism and individuality as a supreme value. It was precisely this blend that enabled critical philosophy and scientific thinking, individual art and literature, philosophical ethics and technique of rigorous logical thinking to be worked out in quite a short term in history.' (24. P. 20, 22).

The state power in poleis may took various shapes, — democracy, tyranny, aristocracy, oligarchy, etc. But whatever shapes were, they never altered severe observation of legal equality and liberty rights of citizens who

were regarded as free men in the right of their very nature, and hence could not be subjected to any sort of domination, as distincted from peregrini and aliens.

4. At the epoch of antiquity civilization managed to step beyond the local, and rather close, frames. Thus *the world empires* first originated. Initial trends leading to them are traced by the waves of Greek colonization at the very dawn of ancient civilization; the Great Greek colonization (the 8th — 6th Centuries B. C.) was the largest of the waves, with citizens of poleis founding innumerable colonies all along the coast-line of the Mediteranean, the Black and, partly, the Azov and the Ionian seas. Yet it counts none of the empire; every colony stuck to their independence from the metropolis, though still being linked with it by miriads of spiritual and economic associations and familial bonds of citizens. The case was somewhat similar with many Roman colonies on the eve of the new era.

What we find here is essentially the specimen of a multiplication, augmentation and dissemination of the breeding grounds of ancient civilizations. However, the new element in the global progress should be stressed. Colonization aided to the development of seafaring, to fresh flow of knowledge, to the emergence of geography and the science of global history. It helped thinking to come over beyond tight local frames of a small group of poleis. Economically, colonization was important because it helped to develop new regions which were abundant in natural resources, to push trade exchange with the metropolis and between colonies, and to enrich the range of goods and intercourse of different tribes and peoples.

According to I. M. Diakonoff, the economic base for the formation of world empires was built by the need to forcedly form an alliance within the pattern of union state for agricultural countries which mainly produced consumption goods (bread, textiles and so on), from the one hand, and mountainous and the Steppe countries specialized in manufacture of means of production (metall, draught and pack cattle), from the other, in order to keep with demands of enlarged re-production. Empires sprang up everywhere. We are inevitably reminded here of Assyrian Empire (spreading over the entire Middle East in the 9th — 7th Centuries B. C.), New Babylonian and Midian (the 7th — 6th Century B. C.), Persian Achaemenian, extending throughout

from the Aegean sea up to the plains of the Indus, from Egypt to the Syr Darya (the 6th — 4th Century B. C.), Mauryan in India (the 4th — 2nd Century B. C.), Chin (the 4th — 3rd Centuries B. C.) and Han (the 3rd — 1st Century B. C. — the 3 A. D.) Empires in China. (22. P. 46, 48).

That the world empires were built up on primarily economic grounds is validated to some extent by the fact that inside empires the trade was on the increase, and independent, self-governed cities, centers of craft and trade, are usually conspicuous. (Ibid. P. 52). These were the predecessors of the Mediaeval free cities.

While forcedly creating world powers (empires) which included countries formerly conquered and then remained under their authority, classical states drew on them for manual force, taxes, produces, and warriors ready to combat barbarians whenever they dared their raids across borders. And yet these empires, rested, as they did, upon autocratic power and a strong military, usually survived for short terms, broke into pieces after death of their founder.

The vast world empire was set up as a result from the campaign of Alexander III Macedonian (356 — 323 B. C.). The young disciple of Aristhotele bound to obedience Greek states, Egypt, Babilonia, Middle Asia, India and founded the empire which extended from the Danube to the Indus, and from the Caucasus to Egypt. Only a sudden death prevented him to conquer Arabia and the North of Africa.

The empire of Alexander Macedonian did not stand for long, but it helped to disseminate Greek culture, science, mythology, political and economic order over vast territories. Thus a local civilization acquired the marked features of a world one.

Roman Empire happened to be a far more solid entity. At the culminating period of its rise (the early 2nd Century A. D. under the emperor Trayan), it covered almost all Western and Southern Europe, the Middle East, the coast of the Black sea, and the north of Africa.

It parted into Western Roman and Eastern Roman (Byzanthium) Empires in 395; the latter survived for more than a millennium, till 1453, though in narrower borders. Here we do trace very distinctively the political and economic supremacy of center (the metropolis), the subordinate positions

held by colonies (provinces), stable and variable trade links, transportation network, and mixture of cultures. World empires made up of civilizations to come revealed many features definitely adopted from Rome.

5. One should be also reminded of the immense contribution that antiquity made to the development of *economy*. It is not so much that the term itself was entered into general use by Aristotle, but that various forms of economic organization, ownership, exchange, financial and monetary relation first appeared.

It is in this epoch that the diversified economy first was built up, especially in the Golden Age of Roman Empire. This economy was focused on market to the significant extent, involving small production of independent farmers, craftsmen, half-dependent coloni with large latifundia and ergasterii. There were also manufacture-type enterprises with division of labor, equipped by thousands employees, among whom were slaves, emancipated slaves, recruited civilians. Ergasterii held positions in mining, in manufacture of furniture, ceramics, textiles, metals, weapons. These were predecessors of future guilds and corporations. To say nothing of the rest of the epoch, we should not underestimate such economic inventions as banks, for there were already temple and private monetary institutions providing loans at interest in Greece in the 5th Century B. C..

Up to this point we have observed the major accomplishments of antiquity in two mutually related centers, in Greece and Rome. But, like other world civilizations, antique civilization was essentially policentral, with breeding grounds planted about the same time (second half of the 1st millennium B. C. — early centuries A. D.) in North India and probably a bit later in China.

The early history of *India* included two periods of rise. The first one is referred to the Mauryan dynasty (the 4th — 3rd Centuries B. C.). ‘The Mauryan dynasty saw its Golden Age under the third representative of the dynasty, the son and successor of Bindusara, Aśoka, who was one the most illustrious statesmen of the Indian antiquity. It was under his reign that arose the political conglomeration which extended from Kasmir and the Himalaya at the North to Mysore at the South, and from the areas of modern Afghanistan at the North-West to Bay of Bengal at the East; the Empire established diplomatic contacts

with many states of the West and East.’ (8. P. 212). Though the centralized system of administration was set up, resting upon the dissemination of Buddhism and caste segregation, it allowed for democratic traditions and self-government of certain cities-republics. Farming, craft, trade and culture could boast important achievements. Slavery was taking different shapes, but slave-owning economy did not prevail. Labor of freemen and half-dependent craftsmen and farmers was making a principal input. Culture witnessed real eminence, and the written language was read broadly in the Empire. Some of the Aśoka’s edicts, which were engraved into stone slabs, have survived. His palace, famous for its ‘hall of hundred columns’, was a splendid edifice. (Ibid., P. 384 — 385).

When the period of domination of Kushan Empire which ruled over the territories of modern Afghanistan, Pakistan, North, North-West and Central India under the king Kaniska in the first quarter of the 1st Century A. D. (Ibid., P. 399) came to the end, ancient Indian civilization enjoyed the culmination in its development which lasted for the two hundred years of Gupta Empire (4th — 5th Centuries A. D.), after the latter had extended over greater part of North India under the king Candra Gupta II. It was a time of an immense rise in country’s economy and culture, including broad partnership with Mediterranean nations, and the peoples of South East Asia and the Far East.

It should not be left unknown that the best periods for local civilization in India were more or less synchronized with the analogous stages in the ancient history of the Mediterranean region (Athens — Alexandria — Roman Empire). This is testifying to similar rhythms in the development of ancient civilizations in their epicenters. Every rise was preceded and succeeded by a period of crisis, decay, partition of empires, civil strife and breakup inside, and invasions from outside, decline in economy and culture.

We find something very much like that in the history of ancient *China*. The beginning of the Iron Age was marked here by the ‘states-in-war’ period (the 5th — 3rd Centuries B. C.), which brought the victory to the Chin Kingdom whose ruler, Yin Chen declared himself the Emperor Chin Shih Huang Di (the first Emperor Chin) in 221 B.C.. The Emperor put through significant reforms. He built the Great Wall of China 4, 000 km long to protect the Northern

borders of his Empire; divided the country into 40 regions; destroyed privileges of the elite by raising free population to the status of Emperor's subjects (henceforth referred to as 'blackheads'); set up new legislation, table of ranks, uniform monetary system; built the immense palace with protected park area (a task which engaged about 700 thous. slaves); established state education. However, all these undertakings, requiring, as they did, frequent increases in taxes, brought about discontent among the masses of population and caused the civil war after the Emperor's death. The victory was gained by the chief of one of the uprisals Liu Pang, who had formerly been the senior man of a small village. He came to the throne in 202 B. C. as the Emperor of the Han dynasty and took certain steps to vigorously reduce taxes. (24. V. 2. P. 500 — 507).

The time for the Han dynasty to flourish was under the reign of the Emperor Wu Ti (140 — 87 B. C.). The Emperor made a significant contribution to improve irrigation, to enlarge the square of fertile lands. He put into use many important innovations, such as plough with sewage-funnel, two-share plough, and the two-field system, (which assumed the rotation of crop). Large handicraft enterprises entered into practice, some of them providing with work as much as thousands of employees. The Great Silk Road began to fulfill its function, after having extended throughout the Middle Asia and the Middle East up to the verges of Roman world. Confucianism was officially made the imperial doctrine and religion. Chinese population grew in several times and equaled to 60 million people, according to the census of 2 A.D., while cultivated lands (including irrigated ones) reached the total square of 56 mln. hectares. (Ibid., P. 509 — 513). At the beginning of the 1st millennium sharp upsurge of contradictions and a row of upheavals led to the fall of the Han Empire.

The final stage in rise of ancient Chinese civilization may be associated with the junior Han dynasty which began from the rule of the Emperor Kuang Wu-ti (25 — 57 A. D.). Under this reign the legal status of slaves was slightly mitigated. It was quite significant that the Emperor's decree referred to slaves as human beings by nature. Also, the Emperor relieved the taxation burden and broadened national borders. 'Han Empire was gradually gaining the might of a world power in inter-state affairs.' (24. V. 3.

P. 170.) The network of large farming enterprises was set up, 'strong houses' as they were called, where the toil of slaves came to demonstrate worse productivity than that of the labor of serviles who worked their own allotments, and where natural economics was still favored. However, these were prototypes of feudal system. Major landowners gained political power by slackening the Emperor's strength. Attended with a growing number of uprisals, the most remarkable of which was that of 'Yellow Turbans' in 184 A. D., with rising civil strife and encroachments of neighboring tribes, this process was finalized by the dethronement of the last Han Emperor in 220. The period of Three Kingdoms began, initiating the transitional period towards the next stage in the development of local civilization. Hence we find here, too, the three-measure cycle of the evolution of the third world civilization.

What are *the main results of the first historical supercycle*, presented by the three civilizations of ancient world and embracing (together with the Mesolithic Age) more than ten millenniums of the history of human world?

The primary result is that the multi-level and complex pyramid of society, having its basic outlines set up at the dawn of history, was fully furnished in the course of these three early civilizations, with all its 'levels' and 'apartments' occupied and settled. This process went on upwards, from the base of the pyramid to its top. The Neolithic epoch was the first to see modern man with all his requirements and abilities, initial sum of knowledge and skills. (As for personal attitude to result of labor, it was not really felt until the next stage, when private property came to existence). Productive technological mode of production, the re-productive type also appeared in this epoch. At the second stage, in the Bronze Age, the formation of the next two levels was finalized, giving birth to the multilateral economy, various forms of property (state, private, communal, and personal ownership), the state, and the law. Completion of the top level of the pyramid, the unprecedented upsurge of the spiritual world, by which science, the global religions, educational and ethical systems came into being, is entirely a merit of classical civilization.

The formation of the global belt of local civilizations on the basis of priorly isolated local breeds was another result of major importance in the

historical process of antiquity. The Neolithic Age began on different continents with gaps of thousands of years, due to, first of all, a number of geographical causes, such as uneven retreat of glaciers, etc. But the gap which lay between formerly isolated civilizations was now gradually being reduced, as exchange between them increased, and the uniform rhythm of mankind as a single entity came to reveal itself in a more lucid manner. Nevertheless, every local civilization preserved its own rhythm. Some local civilizations, after a flash of a short rise, ceased to exist, and were replaced by others, more vigorous, aggressive and younger civilizations. Thus constant renovation remained inexorable.

Ancient civilizations on the territories of Russia, Japan and America. The high road of the civilizations treated above passed through the succession of inter-related and reciprocal, synchronized to historical rhythm epicenters. The ancient societies lying aloof of this road enjoyed a remarkable and peculiar character which was reflected both in their content and duration. To illustrate these peculiarities we will consider three local civilizations, these of Russia, Japan and America.

The Neolithic Age began on contemporary territories of Russia, Ukraine and Byelorussia about two millenniums later than it over the plains of the Nile, Euphrates, Tigris. This was destined by rather a late retreat of glaciers, a scarcer density of population scattered over great spaces, and even by untold abundancy of game which came easily into a sportman's bag. It was, however, the retreat of glaciers and the extermination of large animals by herds that forced hunting communities to change over to cattle-breeding and farming, and then to mastering pottery, spinning, weaving, bark-making and sledge-making. Villages of settled farmers appeared in the 4th — 5th millenniums B. C. (Maikop culture), and thus the transition to territorial community was started. The process of settlement laid groundwork for artificial re-production, social division of labor, natural exchange between communities, and growing social differentiation. Breeds of civilizational culture were still scattered over vast areas. Hunting, fishery, gathering, still dominated as resources of life-sustenance. Severe winters made people to build warm houses. These settlements, 'gorodishcha', as the natives called

them, were enclosed with walls to hold back hostile raids of neighbors.

The transition to the *Bronze Age* took place during 3rd — 2nd millenniums B.C. primarily in North Caucasus, in Prikarpatye, Black Sea coast, and the Urals, after rather short period of the Aeneolithic Age, when copper instruments were in use. Local population grasped technology of smelting, and manufacture of metal tools, weapons, jewelry. Net of settlements spread over, with their scales increasing. Exchange between agricultural and stock-breeding tribes, and those that mastered metallurgy (Triolet, Koban, Andronovo, and Fatyanov cultures) was now carried out regularly. Communal property blended with private ownerships of large patriarchal families. Communities united to form tribes. The tribal elite was appearing, eager to lay hands on any kind of wealth, and supported by armed troops. Tribal unions sprang up as the predecessors of the future states. Yet the character of this stage was not quite the same as that in the centers of early class civilization, since there was no need in for creating system of irrigational agriculture and no concentration of vast masses of people over the plains of biggest rivers. In fact, slave-owning was seldom practiced, nor there were powerful states to protect it. On spaces of Eastern Europe the second world civilization unfolded due to a limited and simplified program.

The Iron Age started here about 1, 000 B. C., that is, with a less, than previously, delay to the global historical rhythm. The breeding grounds were located in Pridneprovye, Povolzhye, and North Caucasus. Western Siberia and Altai (Diakov, Gorodetz, Ananyin cultures) joined to this process later, from the middle of the 7th Century B. C.

The more developed cultures stimulated progress by imposing intense influence upon these regions, known as ‘the breakthrough from the South’. This breakthrough was set off by the prospering ancient colonization in 6th — 4th millenniums B. C.. Greek families left densely populated poleis by thousands to set out in rowing boats and sailing vessels in search of ‘the Golden Fleece’, or virgin and allegedly fertile lands, in desperate attempt to explore mysterious countries which they heard to lie beyond the Black Sea. The natives were not to be superceded from the vast territories they inhabited. Though changed by the influence of a more developed culture, they preserved, in a modified capacity, features of primitive society. Tribes of Prichernomoye

effected a great leap to by the classical civilization, but they never really managed to adopt the latter. Meanwhile, over boundless spaces in center and the North of modern Russia and Siberia the primitive communal system was in total domination. Yet even here culture made a gradual progress, from the Neolithic Age to the Bronze, and then to the Iron Age.

This symbiosis, this mutual involvement of the Greek and local native civilization, entailed the formation of differentiated society based on tribal and urban unions. In the 4th Century B. C. this process culminated into the Scythian state extended over vast territories from the Danube to the Don Rivers and built up under the close influence of ancient poleis. These poleis formed the Kingdom of the Bosphorus with Ponticappe (presently Kerch) as its center in the 5th Century B. C.. The Kingdom encompassed the territories of Tasman peninsula (Phanagoria, Gorgilia) and the mouth of the Don (Thanais). (41. P. 82). In the course of its almost millennial history, from 480 B. C. to the late 4th Century A. D., this state witnessed two periods of rise: in the reign of Spartocides in the 439 — 109 B. C., and again under Roman control in the 1st — 2nd Centuries A. D. In its successful development it equaled the eminence of the economics and culture of the antiquity. It kept close ties with the Greek and afterwards with the Roman world, always aimed at developing economic and cultural exchange with them. The Kingdom of the Bosphorus supplied Greece, the Middle East and then Rome with bread, cattle, salt-fish, wine, some handicraft, leather, and slaves. ‘Some of Scythian tribes practiced cultivation of their lands so neatly that they brought corn to markets, delivering it by huge quantities to Greek cities whence it was subsequently directed to Hellas. It is witnessed that it is precisely from Scythians, and through the Kingdom of the Bosphorus, that Attica stored up half of necessary amounts of crops.’ (Ibid. P. 84). Olive oil, metal handicraft, cloths, ceramics, jewellery, and works of art were carried inwards. Architecture was markedly a blend of the ancient style with so called ‘animal’ style of Scythians. Breeds of slave-ownership in the Bosphorus intermingled with elements of patriarchal slavery, first in Scythian, and later in Sarmat state. Mithridates Eupator VI (132 — 62 B. C.), the King of Pontus, was one of the most distinguished characters in the late ‘first wave’. He took over the Bosphorus and bound to his obedience almost all Greek settlements along the Black Sea coast, in the

Middle Asia?? and in Colchis. Joined by the Armenian King Tigran II and Iberia in a strong alliance, Pontus even dared to combat invincible Romans, but was crushingly defeated. In the end of the 4th Century A. D. Bosphorian cities were turned into ruin by the overwhelming invasion of Huns, and so were remnants of slave-owning system.

Therefore, as regards to the first historical supercycle on the territory of Russia we do not identify here signs of traditional alternation of three historical stages (the Neolithic Age, the early class, and the ancient society), and can speak both of the lingering period of the communal primitive system which spread over up to the Bronze and beginning of the Iron Age, and the 'hybride' development of classical society within Greek colonies, and then in the Kingdom of the Bosphorus.

On most part of this territory the exclusive type of local community prevailed. It was precisely then that traditions of the Russian 'obshina', community, which put so manifest a trace on the whole history of Russia, was originated. In general, there were no big cities. As regards to population, Greek colonies and settlements of the Kingdom of the Bosphorus were inferior to Athens, Alexandria, to say nothing of Rome and slave-owning cities of the East. Production was essentially local-based and natural, with routes of exchange seldom crossing boundaries of regions except perhaps for these of the Black Sea region.

First states to appear on the territory of modern Russia and Ukraine (that is outside the Kingdom of the Bosphorus) bore resemblance with tribal unions. Rise of tribal chiefs and princes went on along with the development of the 'veche' (kind of gathering). Heads of families attended these democratic assemblies to arrive together at decisions concerning important issues of community. This mechanism had much to do with the democracy of Athens of Pericles' days. Hierarchic states, analogous to ancient Egypt, Assyria, or late Rome, born on the rigid centralization, are not to be found in these places.

But we do find here a gap in the spirituality which separated local tribes from epicenters of the early class and ancient world civilizations. Scientific notions of Sarmats, Scythians and Pre-Slavs were entirely of the empirical kind, adjusted to a set of merely practical uses into which to be put, such as cultivation, cattle-breeding, pottery, making of bronze and, some later,

of iron tools, construction of houses, and military raids. Achievements of Greek, and, lately, Roman science were heard of only through the mediation of Greek colonies, cities of the Bosphorus, trade links with Mediterranean region, partially via Caucasus, and, in the case of South Siberia, due to connections with India and with China. Culture, moral attitudes, religious beliefs bore traces of exclusive, conserved society reluctantly absorbing some values granted by antiquity.

It should be noted that the progress of society on the immense territories of pre-Russia was very much indebted to the growing intercourse with centers of classical civilization, for the most part via cities on the Black Sea coast and the Kingdom of the Bosphorus. This helped them to get through civilizations of the first supercycle by a leap and to enter upon the transitional period leading to the Mediaeval civilization almost keeping pace with other local civilizations of Europe.

We find still more peculiarities in the ancient history of *Japan*. (24. V. 3. P. 210 — 219). The Neolithic Age is dated here the period from the middle of the 4th millennium B. C. till 300 B. C., and the Aeneolithic Age from the latter date till 300 A. D. The strip of time between 300 and 700 A. D. is given the term of ‘the Tumulus period’ (or, by another version, the country of Yamato, called so in the name of the large tribal union), the period when Japanese islands saw the formation of the early class society, and the origin of many kingdoms which immediately took up arms to fight each other. Economic and political relations with China developed at a strong pace. The period was finalized by the emergence of federation with a chief of the Yamamoto tribe in the head who afterwards was proclaimed ‘tenno’, a celestial sovereign, then referred to as the Emperor. By the process of social differentiation noble landowners advanced to superior positions. Other classes were formed by free peasants, bond workers ‘bemin’, who had no ownership and toiled on plots and estates belonging to representatives of the upper classes, and domestic serfs. Areas producing rice, requiring irrigation and specific cultivation as they did, were dealt with as communal property. The written language came into being, based upon the Chinese hieroglyphic system; the roots Buddhism had put down into this soil were interwoven with ancient shintoism.

The Taika era reforms (the middle of the 7th Century A. D.), as well as transformations they had caused, resulted into re-sharing lands between land-owners and land-users, though all of them were regarded as holders of land plots that they had earned by their service for the state. A new administrative system was set up and did well to undermine the domination of clans. Taxation became uniform, bensins were granted equal rights with peasants, and servitude was cut off from the ways by which to develop. Hence there appeared premises for the formation of early-mediaeval state.

It may be now supposed that Japan, likewise as in Russia, passed through three primary historical stages in the accelerated and somewhat obscure rhythm.

For most of the course of historical time, ancient societies in *America* developed very in isolation, along their own specific lines. Judging by the contemporary geological and archeological data, the settlement of the American continent was carried out by a number of migration waves from Asia via Bering Sea bridge 50 or 40 thousands years ago, when the sea level dropped 115 meters low, and in the period between 28, 000 and 10, 000 years ago, when it dropped 120 m. (16. P. 45 — 46). Climate conditions was rather moderate in the North Asia at this time. Herds of mammoths and other large animals removed to the North America, followed by tribes which later made their way to the Central and South America. The auspicious climate, abundance of big game and eadable plants produced rapid increase of population. Consequently, before the 7th millennium B. C. a last mammoth was exterminated, and the total head of bisons fell away in significant numbers. Hence from the 7th up to the 5th millennium local tastes in nourishment tended to become increasingly vegetarian, and agriculture among men's occupations was changelessly holding priority, matched to the practiced cattle-breeding, hunting, and fishery. (Ibid. P. 52).

The main agricultural cereals was maize, or Indian corn, or simply corn. Beans, pumpkin, avocado, and hot pepper were also reared and raised. From the 3rd millennium ceramics were brought into use. New agricultural cultures were built in the South-East of the North America, on the present territory of Mexico, and along the coast of Peru. Natural exchange was unfolding, demonstrating first indications of social diversities.

About the 2nd millennium B. C. the development of agriculture and craft had led to the systematic production of surplus product, which eventually destined the formation of the early-class society and the great variety of states, especially in Central America. Cities and systems of irrigation were getting built up, new sanctuaries were raising. The Olmek culture, the state of Atzteks and Maya met their Golden Age. Society was clearly divided into groups — ruler, military chiefs, priests, free members of communities, tradesmen, and slaves, converted to their status by commitment of crime or because of unpaid debts or by capture in prison during a warfare. (Ibid., P. 118). Yet slave-owning was not the dominant economic type. In the period of the early class society (in the middle of the 1st millennium B. C.) large cities were erected. Astronomy, mathematics, sculpture and architecture, all reached supreme level.

The next stage in the history of pre-Columb America is normally dated from the beginning of the new era. ‘The ‘emperial’ dynasty of Tiahuanako began in the close of the 1st millennium B. C., and built up to the highest point of its development during the long period which archeologist refer to as ‘classical’. It lasted from the 3rd till the 7th Century A.D.’ (Ibid. P. 315). A center from which Tiahuanako took its spread was the Bolivian plateau, next to lake of Titikaka. Manual handling of metals, including gold, bronze, silver, and copper attained the exceptionally high level. Unlike Europe, iron was unknown here yet in this epoch. Therefore, what we imply by the notions ‘Golden age’ and ‘Bronze age’ here is more charactersitic of, and applicable to, the third, rather than the second, coil of historical civilization. In fact, this coil continued till the conquest of America by Europeans.

By the time of conquest, there were quite a number of empires in America. The most powerful of all them was the Empire of Inca, found in the 13th Century. Two centuries later the Empire occupied the territory of 900 thousand sq. km. (which equals the territory of modern Venezuela and exceeds that of France by 1. 7 times), extending along the Pacific coast for 4, 800 km. Since the rule of Pachacuti Inca Yupanqui a number of reforms were put into effect in the Empire, which provided the French historian L. Baudin with good reasons to judge that there was ‘the socialist Empire of Inca’.

‘Labor was enforced upon any resident of the Empire without

exception. The privilege of idling, of 'easy life' remained absolutely unattainable for the locals. This holds good of aristocracy, and this holds good of the Supreme Inca himself... The general duty of labor did not prevent the principle of equality. All had to work for the sake of all, but in keeping with one's personal capacity. Every man was entitled to hold a plot of land big enough to provide livelihood for himself and his family members... No one was deprived of land, hence everyone could earn something for his living.' (Ibid., P. 357 — 359).

In order to satisfy demands of the state and priests all residents held the common duty to cultivate and work on lands belonging to the Inca (i.e. to the State) and to the Sun (i.e. to priests). A part of produce that this work afforded was assigned to fill insurance funds and to give allowances to widows, cripples, aged people, orphans. Cattle stock, like land, was divided into three allotments; one part designed for family consumption, another was for the Inca, and the third one was allotted for 'the Sun'. Every function was carried out under a rigid control, and dissipation was severely persecuted. Give and take relations were essentially natural.

Heads of all families were involved in administration at different ranks, but principal power pertained only to the Inca and was hereditary. The state power was exercised by representatives from aristocracy who enjoyed some privileges. However, democratic liberties and rights were not perceived as a legal status granted to every person in the society. To some extent, the socio-political order of the Inca remind the one we came across in our dealing with ancient Athens and Sparta, though fancifully modified; there is indeed something in this system that arise socialist ideas in the way Sir Thomas More and Camponella treated them.

The state of Inca attained a high level of productivity of labor, which provided an opportunity to set up large cities, to erect the breath-taking citadel of Machu-Picchu, to build well-constructed roads and hanging bridges over gulfs, channels up to 750 km in length, and to reach eminence in culture.

The specific local civilizations of the New World, for all their technical and cultural advancement, were ruthlessly vandalized by European colonizers in the late 15th — 16th Century. This ceased the grand historic experiment of the isolated development of local civilizations.

2.2. Man in Ancient Society.

All changes that come over life in society are rooted in its primary indivisible atom — man, and in the dynamics of his requirements and abilities, skills and lore, interests and motives in activities. What kind of changes occurred in the course of three initial civilizations — ancient societies?

The unfolding of the potential of Homo Sapiens and development of the family. The formation of modern man as biological entity came to an end in the late Paleolithic Age. Ethnographers and historians are agreed that man ceased to develop as biological entity. Man is bound inseparably with society, where the regularities under which biological selection is carried out are no longer valid.

But these conclusions are yet erroneous; no species or genus is able to cease evolving without taking a risk of finding itself in a deadlock only to be utterly ruined at the moment when environmental conditions change drastically. However, the rhythm of biological time is considerably more lingering than that of historical time, so that changes accumulated for as long as millenniums may well stay unobtrusive until time is ripe for a big leap. It is also true that in the biosocial mechanism regulating heredity and mutation it is the *social* resultant and the regularities of *social* genetics and dynamics that hold prevalent positions, though they are still unable to become self-sufficient or exclusive, nor to escape completely from being controlled by laws of nature.

What are, then, those changes that came over the human being as biosocial entity in the course of three primary civilizations?

While scope and weight of human brain did not change in long measure during this period, its structure grew to be very complex. This was due, in the first place, to experiencing amount of brain work grown in many times, due to augmentation and extension of human activity and of transmitted and processed information. Another cause was the constant improvement of man's nourishment, increased use of albumens, microelements and vitamins helpful in stimulating brain's work.

The development of the second signal system was a major breakthrough to take place here. The second signal system implies the ability to perceived the world around, with the opportunities and dangers it suggests, not only through immediate perception, but by the help of speech, — oral first, to be found, yet of course in embryo state, in use of some superior animals, such as dolphins and apes, and then joined by written one, with utilization of symbols. It enlarged in many times possibilities for accumulating information required for survival and development and for transmitting it to future generations. It brought a stupendous increase to the functions of the left hemisphere. A brain of an ancient philosopher, or a politician, or a poet was a deal bigger than that of a man from the Paleolithic Age's society.

Meanwhile, the difference in mental abilities and intellectual capacities became quite marked. This gap, obscurely seen in the communities of the Neolithic Age, became more obvious in antiquity.

With regards to build of the human body and its physical capacities, the change was insignificant in the course of millenniums. Man's height was normally somewhat lower than it is today. Appearances of human creatures of the Neolithic era, to be judged upon the reconstruction made by M. M. Gerasimov, have no general distinctions from those of modern man. As early as the Neolithic, man bore signs of racial identity, and it was in this time that the three major races came to be: Negroidal-Austroloidal, or Equatorial; europeoidal, or Euro-Asian; and Mongoloidal, or Asian-American. There are some mixed types, too, also called hybridous. But these differencies, preserved in genetical code and in many regards connected with natural habitat, do not affect in any serious way physical and mental strength of represenatatives of different races.

Therefore, the three primary civilizations, employing, as they did, social capacities of *Homo Sapiens*, which had been formed during the Paleolithic era, put this potentials into effect and aided to their expansion. Man tended to become varyingly involved into mental and physical activity. Thus we can speak of consistent regularities of biosocial evolution, in which the 'socio' increased its domination over 'bio' by modifying, yet not expelling the latter.

The reproduction and evolution of man unfolded through *the family*,

which changed its functions and enhanced its significance to a large extent during these three civilizations.

The biological function of the family is the re-production and continuation of the human race, based on the succession of generations of people. Most often, the family unites three adjoining generations — one which runs through the peak of activity (adults); ‘forthcoming’ generation (children); and ‘leaving’ one (the aged). By supporting and adding one to another, they assure the reproduction in the primary cell of society to be going on ad infinitum without cessation.

Mortality was high in the Mesolithic and the Neolithic Ages due to diseases, famine, with lot of families and even communities brought to total extinction. People died when fighting against hostile communities and tribes, and from the fatal whims of nature. Average term of life equaled 25 — 35 years, and frequency of succession of generations, measured by terms of their culminating periods, was 15 — 20 years. In following years the duration of life slowly began to grow. While mortality from famine and diseases was diminishing, the number of men slain in warfares enormously increased. On the other hand, under the second and third world civilization, slaves were deprived of marriageableness, the privelege to have families, which, considering the shorter duration of their lives, was also the factor for the vital statistics of the period, together with innumerable fighting, epidemics, and natural calamities.

Density of population, without taking into account those who resided on narrow strips coastwise and over riversides, was very scarce, and increased very slowly. As asserted, during the period of 4, 5 thousand years, from 7, 000 till 2, 500 B. C., the population of the Earth grew only by 4 times, from 10 to 40 mln. people. In the 2, 5 thousand years that followed, under the Bronze and beginning of the Iron Age, the natural growth rates of population were progressing, its numbers going up to 160 mln. people before the outset of the modern era. However, when the ancient society entered upon the phase of decay, these rates suffered another relapse. (5. P. 23). Presented by such small numbers, mankind would undoubtedly fail to exert any sensible influence upon the bio-sphere. Yet within more densely populated areas ecological traces of human activities were quite a plainly appearance (exhaustion of

arables, salinization of irrigated soils, clearances, forests, extermination of some species of wild beasts and so on).

The economic function of the family was enhanced significantly by the transition to agriculture. The type of agriculture utilizing hoe and, most particularly, plough gradually became practiced professionally, yet even within single community, as the matter of occupation of certain families. Once a plough had begun to turn up the soil, farming passed from women to men. Man, a warrior and a farmer, became the head of a family. Wealth gained by families was unequal, and while creating this wealth, every family attempted to keep it within itself. Produce was no longer shared among members of the community, and property began to come down from father to his children. This went to form the grounds for the private property of the means of production. Kinship was now ascertained according to paternal line instead of maternal one, and the patriarchal family, with the principles of private ownership behind it, came into being.

It was within the family, this primary cell of the economic structure of society, that the reproduction of man, as the main productive force of society, was taking place, and within there rested bulk of agricultural, cattle-rearing, and craft produce, consumption of household and individual goods and necessities. Only a minor part of undertakings and produces is still referred to the charge of the community. Within the family there is no trade exchange. Instead, there is a natural exchange in labor operations and equalizing distribution of produced goods.

During the Bronze Age, and most particularly in antiquity, economic isolation and property differentiation of families increased. Rich families, apart of arables and property, owned slaves. Poor families of free citizens in the polis assured efficiency of reproduction and collection of taxes. In Greek and Roman city-states they were granted support by the state. Use of slaves became obviously non-profitable by the end of antiquity. Many of them were then endowed with plots of land and allowed to have families. Hence they were enabled to start a household of their own to keep themselves, their wives and children, provided they would not fail to fulfil their duties in favor of their lords. Coloni, as were they called, preceded serfs — bond peasants of feudal society, together with priorly free members of barbarian communities

converted into the same status.

The social function of the family was gradually increasing, too. Common intercourse and labor with other members of the family enabled a younger generation to gain a required minimum of knowledge and skills accumulated during past centuries, and to adopt attitudes and standards of behavior in the family and in the society. The family was the main link to preserve and to hand down a social genotype. While society was growing to be more different, with new classes, casts, estates coming into being, it was the family that served as an instrument to fix and to transmit these differences.

Expansion of requirements and abilities of man. *Human requirements* are to be divided into four major groups:

1) *Biological wants*. These are requirements related with re-production of man as biological creature, i. e. with regeneration of his strength and ability to work. This group includes needs in food, rest, sleep, clothes, footwear. A certain minimal level to provide these wants, beyond which human life cannot be maintained, should be assured, otherwise man dies after exhausting all internal reserves. Requirements of this kind are joined by elements of social origin;

2) *economic requirements* urged by need to promote multiple labor activities, to appropriate means of production and manufactured produce, to carry out distribution and exchange, to accumulate wealth and to pass it to next generation. Thus the continuity of social re-production is secured;

3) *social* needs are developed by man as a social being. They correspond to the stages of formation and development of society. This group includes needs related to the family, ethnos, nation, social group, and those characteristic of mankind on the whole;

4) *spiritual* needs in which the development of the intellectual capacity of mankind and society is embodied. These are the needs in self-awareness and understanding of the world around; these are, then, the aesthetic needs related to the imaginative perception of world and aesthetic assertions. Next, these are the needs to be educated, to add to one's skills and knowledge; fourthly, these are moral requirements to maintain orderly and fair relationship with other members of society. Finally, these are ideological and, most

specifically, religious needs which determine sense and aims of life for many society's members.

A distinction can be set as to man's *abilities*, too — for there are innate abilities, laid down in his or her hereditary social or individual genotype, and to a more or less extent fulfilled according to existing conditions of life; and there are acquired abilities which a person forms and develops in the course of his or her being brought up, educated and self-educated, and during labor activity.

What are *the major tendencies* in the dynamics of requirements and abilities of man during the course of the three historical stages?

First, requirements of men grew tremendously in volume and became more divergent in their range. Emergence of private property, classes, state, the utmost rise of science and culture formed a wide range of economic, social and spiritual requirements, many of which were yet unknown in the society of the Neolithic Age or remained undeveloped.

Secondly, the epoch under consideration saw a change in the alignment of major types of requirements, and in proportions of social labor needed for them to be met conveniently. During the Mesolithic Age and the beginning of the Neolithic Age, the biological requirements came out on top of the world, with almost no spare strength to see after social and spiritual needs, if they had been of any consequence in what had been range of man's concerns. But the Bronze Age formed a rich variety of economic, social and spiritual needs. It was these that played so exceptional a part during antiquity. A single look at Acropolis, the complex of marble temples and palaces, dazzling by their sheer beauty and impressive sizes, erected in the epoch of Pericles (the mid-5th Century) on the mountain in the center of Athens, will be enough to learn this. Majestic temples, palaces, burial-vaults, embellished by sculpture and murals, were built in every large city in Egypt, Babilon, Assyria, China, Crete, India, Rome, Greece.

Thirdly, requirements of various social groups underwent major differentiation. While in the early Neolithic Age the requirements of men and families were very much the same, being predominantly biological, during the Bronze Age, after society had stratified into classes, requirements began to differ. Ruling, religious and military elite which possessed tremendous wealth

displayed miscellaneous and subtle requirements. Larger numbers of free citizens, craftsmen and warriors enjoyed by far more moderate requirements; multiple class of slaves and poorest people had their requirements reduced to a minimum to differ insignificantly from these of average individual of the society of the Paleolithic Age.

Fourthly, a divergence in requirements made itself felt with regard to territories. In the course of the Paleolithic Age and the Mesolithic Age the spread in level and contents of requirements of communities and tribes was quite small and due to differences in natural environment, but later it grew wider in proportion to the development of agriculture, stock-breeding, and craft to become more and more determined by workers' skills, and by technological and economic influences. Large territories were occupied by barbarian tribes, every so often setting out on raids over centers of civilizations. These raids, together with the formation of world powers on vast spaces, the growing intensity of economic and cultural exchange, the recruitment of barbarians as free lancers, were all factors to bridge the gap in level and content of requirements and abilities of various nations.

Fifthly, the rise in requirements was equalled by rise in capacity of man and society to meet them. Share of able-bodied men in population and their distribution by different fields of activities changed. The ruling elite, priests and military chiefs considered labor to be a destiny of despised slaves, for they themselves were committed to mental work, engaging in politics, philosophy, cult, architecture, etc. Smaller holders of land plots and stock-breeders, craftsmen, slaves and warriors were occupied with manual labor, or participant in military campaigns and warfares.

It follows from this that it was only a part of society that managed to reap benefits of historical progress. But in many aspects society came out on an eminent level in development of its requirements and abilities, and especially of these in the spritual sphere, to contact with which is a dazzling experience for modern man.

Progress in human knowledges and skills. During the course of scores of millenniums, from one generation to another mankind accumulated knowledge related to the world around, skills in making use of natural

phenomena. Man was supposed to learn ways and habits of game, fish, birds, in order to get them as a means of subsistence. Those who collected plants and herbs and fruits should have known their health-giving properties. To turn a fragment of stone or bone or wood into a battle weapon was a daily routine, and the same is true about construction of primitive housing, burning and control of fire, cooking meal.

But it was never before the Neolithic revolution that the breakthrough in knowledge and skills had really occurred. People learned selecting cereals that they needed most, cultivating soil, sowing, reaping and processing crops. They knew which time was best for sowing, and how to make hoe, mattock, digging stick, plough. They put into practice irrigation. It was impossible to be engaged in craft and construction without understanding properties of materials in use, and technological patterns of processing and utilization.

The economic and social differentiation of the Bronze and the Iron Ages, the emergence of multiple patterns of property, exchange, money, classes, estates, social groups, the state, legal rules, the progress in international trade, were all of them factors to extend outlook, requiring adoption of appropriate skills and knowledge in these utterly new fields and branches of occupation.

Contradiction between vast amounts of knowledge being on a headlong increase, and skills needful to assure society's normal work and development, from the one side, and limited capacities and abilities of individual whose period of life time, to be sure, was rather a short one, from the other, was to be overcome only as division of labor began falling into professional patterns after it had passed through the aforementioned stages in social division of labor. In every field of activity dozens of occupations were appearing, and every one of them could boast of high level in specialization and perfection. Then the system of specialized training which organized a transmission of skills and knowledges was set up. An aggregate worker of the Bronze Age, to say nothing of the antiquity, enjoyed by far a greater amount of skills and knowledge than a worker of the Neolithic civilization did. Productivity of labor saw a significant rise in efficiency.

The result of colonizations, war campaigns, creation of world empires, and exchange with barbarian tribes was fast spread of knowledges and skills

on the periphery. This was a factor to promote intellectual and professional progress on vast territories.

The dynamics of motives in human activity. Struggle for existence and survival in austere and ever changing conditions, for extension of genus, was a chief motivation of men at the society's first stages of formation and development. Man learned what use could be made of skills, knowledges; he accumulated and tools he created to reach his purposes.

Resulted from the change to agriculture, stock-breeding and craft, was extension of motifs and targets in activities of Neolithic man. From now on man had to put long-term purposes. More skillful and elaborate performance in various fields of agriculture and trade became essential. But for a product of a more elaborate work to be owned by a worker who made it and by his family, for this worker to be motivated for a durable training and intense productive work, biological mechanism for motivation should have been supplemented with economic one, based on private appropriation and fair equivalent exchange. This was a major step forward to develop interests, aims, and motifs in activity of individual and groups of people, — communities, families, tribes.

Another set of social interests and motivation drawn on non-economic constraint to labor, on violence and ways to restrain it, came into being due to increase of population both in numbers and density, formation of the state and legal system.

Finally, the extension of spiritual needs and ways of occupation to meet them, such as that of teacher, artist, priest, scholar, architect, etc., gave birth to yet another one, pertaining singularly to human, and the society built by humans, motivation, that is, to boundless yielding to understand the world, creation of beautiful works of art and craft, maintenance and observation of religious principles and dogmata.

In such a way, the result of three primary civilizations was the formation of diverse interests and motifs. The biological foundation was developed and supplemented by structures which reflected the stages of human development and complication of social system.

2.3. Technical progress in ancient societies.

Every step taken by man in his development shaped into radical changes in technological base of society, in set and use of labor tools, raw materials, applied sources of energy, in an extent of nature's involvement in manufacture, in patterns of organization, division and co-operation of labor. Each of these elements which represent the second level of the pyramid of society saw succession of cycles of different duration; involved into a synchronized interacting, these elements set up the rhythm of change over technological modes of production, and within each of the latter they did the same with regard to technological orders as the most general representation of onward trend of technical progress.

Evolution in tools and materials. The Neolithic civilization and the technological mode of production associated with this era were preceded by the very durable formation of and slow progress in available set of instruments in human use.

There is every reason to consider as a Paleolithic revolution the change that a remote forbear of modern man made over from occasional use of stones or sticks turned up during hunting or defense against wild beasts to systematic making tools of wood, stones, bones, and to perpetual use of these tools while hunting and gathering. While he gathered fruits, roots of vegetables and herbs, or hunted animals using his primitive weapons, Paleolithic man learned to work pebbles and stones, pieces of wood and bones, to shape them after a specific pattern and to utilize them as instruments of labor.

A few major stages (technological cycles) are to be identified in the development of Paleolithic mode of production. The most ancient of these cycles, which takes in the initial phase of the lower Paleolithic Age, corresponds to 'the pebble culture'. Roughly worked, almond-shaped pebbles, chopped in two or three ends, were found at Olduvai Gorge in the East Africa. (Oldowan industry).

The next stage in development of the Paleolithic Age was the Chellean period, called so in the name of village of Chelle in France where stone

choppers were disclosed. Use of Chellean choppers and points made it possible to hunt game or protect oneself against wild animals, to cut carcasses, to dig out edible plants.

The transition towards the middle Paleolithic Age (Mousterian industry) is associated with further progress in perfecting tools of labor. Chopper and scraper were often used for work in wood, leather, for shaving and cutting.

The transition to the upper Paleolithic Age (40 — 10 thous. B. C.) is marked by the invention of spears and javelins, bone points of spears and harpoons, stone axes and cutters.

The core of technological breakthrough of the Mesolithic period (10 — 7 thous. B. C.) was the invention of bow, enormously raising the efficiency of hunting and entering into general practice as a battle weapon. Another major innovation was the extensive use of microliths, stone weapons made of small plates and utilized as points of spears, arrows, javelins and harpoons. Then instruments of earlier land-tillers came into use, — hoe-like tools and stone mortars. Canoes and nets became a common practice in fishery. Making of ceramic vessels was begun.

But the real revolution in technique took place during the transition to the Neolithic Age, after agriculture, stock-breeding, craft, building, and military had been adequately developed. Thus it is possible to identify the formation of *the Neolithic technological mode of production* which in its basic outlines was laid down during the course of the Mesolithic era. A new technique of making stone weapons, with a use of polishing, sickles, reaping-hooks, was developed; clay was kiln-fired to make ceramic vessels. But as the key tendency of the time, is to be seen the specialisation of tools together with the development of social division of labor. In such a way, men formed specific sets of tools for land-tilling (digging sticks, and later wooden plough, reaping-hooks and sickles; ceramic vessels holding crops and preventing it from moisture and rodents), stock-breeding, many kinds of craft, and construction. Joined to flint, obsidian, bone, horn, were more solid and more processing-resistant sorts of stones, such as nephritis and jade.

As to the development of the Neolithic technique, following cultures are usually identified: the Natufian culture in Palestine (7th — 8th millenniums

B. C.); the Badarian culture on the riverside of the Nile (6 - 5 thousands years B. C.); agricultural cultures on the territory of ancient Persepolis (South Iran); Qarial-Shahir and Qalat-Jarmo (North Iran), Tall Hassuna and Tall-Halaf (Middle East, mid-5 thous. B. C.), Bandkeramik on the Carpathes Mts. and Trans-Danube region (5 — 4 thous. B. C.).

A next technical revolution refers to the Aeneolithic period and the earlier Bronze Age. Its chief content were utilizing metal, copper and gold, and later bronze, to be used in production of tools of labor, weapons and ordinary articles of life. This set an opening *to the technological mode of production of the Bronze Age*, a major leap in development of productive forces and productivity. 'Making metallic tools of labor and utensils, writes J. Bernal in this connection, was the technological achievement that manifested a new qualitative change in man's domination over his environment. Metallic tools are much more resistant and valuable than stone ones, and metallic weapons were of a deal higher efficiency than stone ones when it came to fighting against both animals and his enemies, other humans. The technique of making metal and the use of metallic tools were of a paramount significance for other fields of technical progress. Thus, it was use of metallic tools, in particular that of knife, chisel and saw, that was responsible for making a vast difference in work in wood, in that it created carpentry and permitted a brick masonry to become almost a common practice. Creation of first machinery, especially wheel-cart and waterwheel, was enabled due to metal. Even in main craft, i.e. tillage, mattock, dragged by a oxen harness, or plough, no sooner became fully efficient than metal replaced stone in craft of tillage.' (7. P. 69, 70).

The creation of a set of copper, and later bronze tools, promoted transition to irrigational agriculture, especially so in lower reaches of the Nile and the Euphrates (the 4th millennium B. C.), the Indus (from the middle of the 3rd millennium B. C.). The same factor pushed forward boundaries of craft, which came to embrace making of copper and bronze labor tools, golden decorations, metallic utensils, extraction and smelting of ores, blacksmith's work, making carts provided with metal-rimmed wheels, construction of boats, and of rowing, and then sailing vessels, erection of palaces, temples, majestic statues and vaults. This made it possible to systematically profit by surplus

product.

The Bronze Age falls into several stages: the earlier, middle and late Bronze Age. Each stage was linked with specific technological order, a method of metal use, with gradual reduction in variety of use of stone tools which were inherited after the Neolithic era and continued to be perfected. But in a meantime, a narrow spread of, and exuberant labor input needed to obtain copper and bronze, together with relative softness of these metals, constrained potentials of their efficient use.

But it was use of iron, first, and then steel, that technological mode of production in antiquity had as its core. It is true that meteoritic iron had already been in use prior to this epoch, but not until perfection in the methods of smelting and working iron was achieved was it possible to put into general use iron and then carbonaceous steel. In spite the fact that iron and steel are rather difficult to working and more corrosion-proned, they made a fast spread over many countries and pushed upwards the economy of local civilizations in South Europe owing to a greater solidity and a wider spread of primary raw materials. 'The Iron Age failed to originate technical achievements of so historic significance as was the case at the dawn of the Bronze Age, but its achievements always resulted from utilization of cheaper and abundantly available raw materials, and came to be wide spread not only geographically, but also throughout classes of society... The peoples of the Iron Age, after they had come to the settled life, proved themselves able to set up prosperous agricultural and craft communities on priorly futile lands. The result was such a degradation of the political and economical supremacy of early riverside civilizations that they failed to claim for the role of centers of cultural achievements ever again, though many of material, cultural and spiritual achievements came down to next generation.' (Ibid., P. 88, 90).

Another important achievement of the Iron Age was the development of seafaring. Helping to promote markets and colonization of auspicious regions, this was by many times cheaper a transportation than overland one and.

Therefore, utilization of iron and a wide variety of tools to be made of it were the primary sources to cause the epicenter of world progress shifted from the Eastern riverplains towards the littoral of North Mediterranean and South Europe.

Energy resources of earlier civilizations. The main source of power to put means of labor into a motion throughout the Paleolithic, the Mesolithic, and partly the Neolithic Age remained man's muscular strength. This was a universal and recurrent energy resource. Co-operation of functions while hunting mammoths and elephants, or building irrigational systems, palaces, temples and pyramids permitted the amazing results which exceeded the strength of single man by scores of times.

At a meantime between the middle and lower Paleolithic Ages man invented the way to obtain fire by friction and rubbing. This fact may be well treated as the first energetic revolution, since it enabled members of ancient communities not only to cook their meals, but also to put fire into a number of uses within technological processes, such as making of wooden tools, and later on, in smelting of metals. It helped people to keep their homes warm, to develop territories otherwise unwelcome for making home on, to protect themselves against wild animals, to fix arables for sowing when using slash and burn agriculture. But muscular strength still persisted as the main source of energy.

But all these tended to become different after man's domestication of wild animals and making use of them to ship loads and to carry himself. Such was the second revolution in energetics, making possible to lend support to, or even substitution of, man's efforts for power of animals. In Mesopotamia ever since the third millennium B. C. oxen, vehicles and asses were commonly yoked into ploughs and carts. Later on use of horses became a general practice in agriculture, military and transport, and in some regions use was made of domesticated camels and elephants.

The inventions of the Iron Age made it possible to utilize natural energy sources, power of wind and water. Sailing boats and vessels entered into general use in seafaring as long ago as in the Bronze Age. In an earlier period of the Iron Age waterwheels and water mills which made use of power of falling water had appeared. Anyway, these were just the first sprouts of the third energetic revolution. It is worth noting that about 100 B. C. a gifted inventor of the Hellenistic period called Hero designed a prototype of steam-engine which was to utilize jet energy. (Ibid., P. 130). He was an

ancient forbear of the energetic revolution which was destined to lay grounds for industrial civilization. But in that he outstripped his time, for no advantage could be taken of his invention in view of the low costs of slaves' labor.

Thus ancient civilizations took a firm step towards creating energy basis for rapidly accelerating mankind.

Man and nature in ancient world. Man is a child of nature, an outcome of essential regularities of its development. Man cannot exist without his natural surroundings. At the time when genus *Homo* and species *Homo Sapiens* were entering into being, the umbilical cord bonding them with Mother Nature which feeded them with main vital saps still persisted. So when did the act of tearing the umbilical cord come about? When did man acquire his own trajectory of movement, shaping his destiny due to his own will?

In the period of the Neolithic revolution man learned to rely on himself in gaining his livelihood. He began to grow plants and animals, processing produces into a required set of means of life-sustenance. That proved to be a tremendous benefit to open for emerging human race route leading to survival and progress. To make this step man was forced by the first global economic crisis, which burst out in the late Mesolithic Age and exposed many primitive communities to the threat of starvation. The causes from which the crisis resulted were not just natural ones, (i.e. the quick retreat of glaciers, and removal of wild animals — mammoths, reindeers, buffalos — which followed them to the North), but also historical ones. Arrows and bows being in general and intense use, men began rapidly exterminating large animals.

When Neolithic man learned to grow grain-crops and domesticate some animals, he secured for himself reliable sources of life-sustenance. J. Bernall points out the historic significance of this crucial event: 'Agriculture led to an essentially new type of relationship between man and nature. Man has stopped to lead a parasitic way of life since the moment when he managed to grow on a small plot as much nourishment as he was able to gain by hunting or gathering on a vaster territory. While being engaged in agriculture, man established his domination over animate nature due to his going far into understanding of regularities of reproduction and thus attained a further and greater independence from natural conditions... The transition to agriculture

called into being a new type of society which was essentially different from ones that preceded it due to immense augmentation of number of people able to provide themselves against starvation on the same land.’ (Ibid., P. 60). Nevertheless, danger that the delicate equivalence between human society and nature would be broken was always looming, and recurrently resulted in extinction of some civilizations. Extra-long term global ecological cycles became associated with every civilization. The second ecological crisis set in at the end of the Neolithic Age, when grown masses of population failed to provide for themselves by relying on slash-and-burn system and primitive stock-breeding. The way out from this crisis was the formation of irrigational agricultures throughout plains of the major rivers (the Nile, Euphrates, Indus, Hwang Ho), where the center of ancient civilizations shifted about the 4th — 3rd millenniums B. C.

However, the threat of ecological crises soon arose out of the salinization of irrigated areas. These crises reduced crops so dramatically that there was no further possibility to feed the increased population which had settled over fertile plains of large rivers. But, once again in history, mankind managed to find way out of crisis. By developing dry-farming lands (as in Central Asia), putting into use iron tools, expanding a range of natural resources involved in production, it effected rise in agriculture, stock-breeding, craft and construction during ancient epoch (the Iron Age). Achievements reached by agriculture and stock-rearing are really impressive. Yet even there the potentials for development were nearly exhausted, the formerly fertile lands impoverished, and before population on densely inhabited parts of the Globe loomed then the threat of the next, viz. the fourth one, ecological crisis which was not overcome until the beginning of the next supercycle.

Therefore, history of civilizations is inevitably a chronicle of recurrent shift in ecological equilibrium and its subsequent regeneration on a following coil of the historical spiral due to drawing on strength of understanding and on power of new technological systems.

Dynamics of organizational patterns of production. After the preceding stages in formation of mankind the Neolithic civilization took a

communal, flexible and mobile pattern of organization of production which was based upon the labor input of small groups of families, brought together by the need to avoid incestuous marriages. The only division of labor known was that by sex and age, together with the co-operation while hunting large animals or nomadizing for new settlement. For example, the settlements referred to the Mesolithic period were disclosed in the caves in South France, each housing from 6 to 18 occupants. Settlements of the Mesolithic Age between Elbe and Oder contained from 8 to 15 small earth-houses, with general number of inhabitants 40 — 100 people. About 15 settlements of such kind existed there simultaneously with density 1 man per 30 — 60 sq. km. (25. V. 1. P. 68).

Formation of agricultural local civilizations required dense concentration of people on limited territories, which was especially so over the plains of large rivers, for otherwise it would have been impossible to carry out irrigational projects. Division and co-operation of labor were developed in a strong pace in order to provide for people's survival and proliferation. The result was a systematic output of surplus product by overwhelming amounts. This product was being converted into property by tribal, and later by the state elite. The communal economics which was a rather homogenous, a sex-and-age division of labor being the only one to evolve, was to be replaced by a more diversified economics which had a more complex structure and was based upon a more developed system of social division of labor. Specialising in his own field of activity and using efficient tools, a worker could make his labor by many times more productive. But then it would have never been possible, if there had not been for the spread of co-operation of labor and exchange in its results, which allowed for all the range of various demands to be met and satisfied. A type of society which was thus being built was based on division and co-operation of labor, and fields of occupation reciprocally necessary to one another. This was a way by which premises for more progressive and more specialised forms of exchange and economic relations were laid down.

The transition to the early-class, and then to the ancient mode of production manifested significant changes in organizational patterns of production. Large, diversified, and specialised enterprises, such as Roman

ergasterii, were blended with multiple independent smaller enterprises in agriculture and craft. These were based on personal contribution and levied with duties and taxes. In the end of the Roman Empire, this picture was added by half-dependent coloni (*libertinis*, emancipated slaves) who formed a bridge leading to the feudal patterns of organization of production.

2. 4. The economic structure of the ancient society.

Let us ascend now to the next and the third level of the pyramid of society. What changes were coming over structure of economics, system of economical relations and mechanism of economic regulation during the course of the three primary civilizations — the Neolithic Age, the early-class (the Bronze Age), and the ancient (the Iron Age)?

Multilateral macro-economic model. Let us take advantage of multilateral macro-economic reproductional cyclical model to help research of changes in the structure of economics in the course of the three succeeding civilizations. This model has much in common with an economical Rubik cube of a sort (see [fig. 3](#)). It permits studying one and the same object, viz. macro-economics, from the six sides, which are:

re-productional structure (distribution of product of social re-production by sectors);

inter-sectoral structure (distribution of product of social re-production by branch complexes);

hierarchical structure (distribution of product by hierarchical levels of re-production);

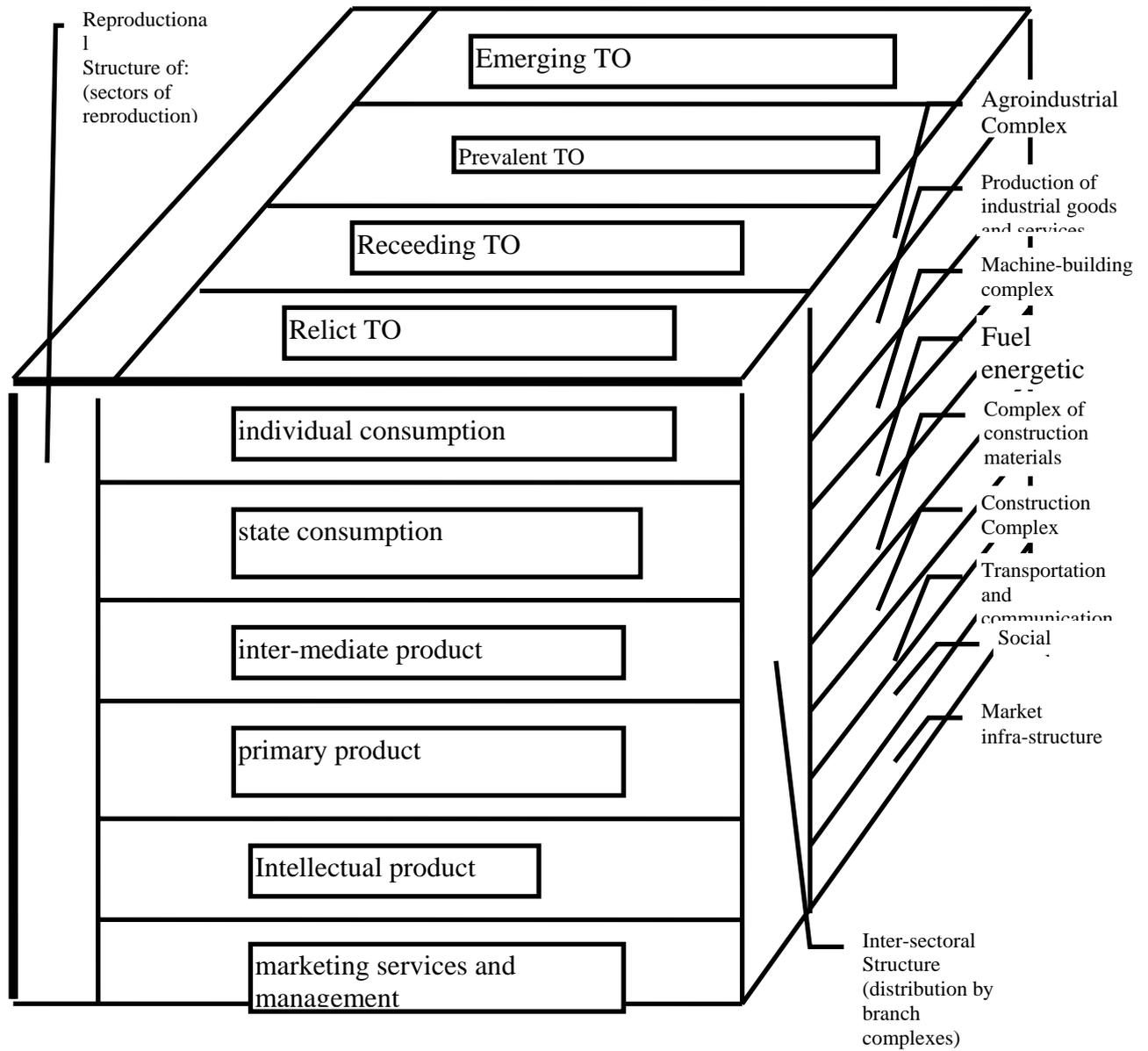
technological structure (distribution of product by technological modes of production, and within them by technological patterns);

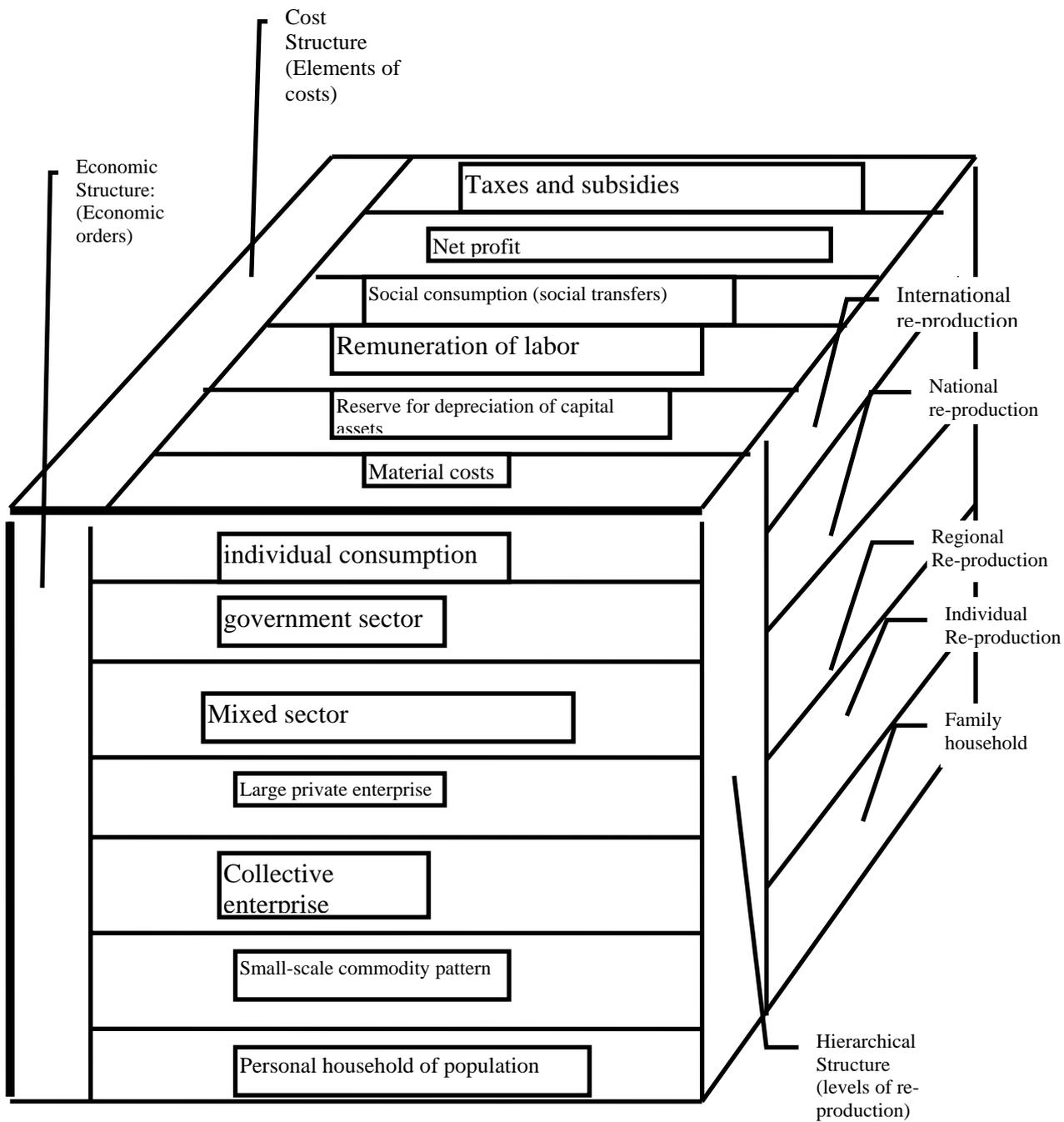
economic structure (distribution of means of production, and of product of social re-production by forms of property — economic orders);

cost structure of product of social re-production indicates the correlation of cost elements in product.

The proposed macro-model permits to form the idea of economics as a multilateral, volume entity, with totality and inter-reaction of all variety of elements it consists of, and reveals dynamics of shifts in structure.

Fig. 3. Multilateral macro-economic model of re-productual cycles.





Dynamics of economic structure in ancient societies. Multilateral macro-model corresponds to the structure of modern developed re-production, and draws on rich economical statistics. As regards research into structure and dynamics of economics of ancient societies, note should be made of the following simplifications:

1. The economics of ancient societies throughout all levels of its formation is assumed to have somewhat more simplified structure than it really did. Thus, hunting, fishery, gathering are included; excluded are international property and international re-production, a number of inter-sectoral complexes, such as scientific and technological, military, social;

2. for every civilization only one period is taken into account — its utmost culmination. 4 periods are under investigation: the Mesolithic Age (in capacity of an initial point for comparison); the Neolithic Age; the Bronze and the Iron Age;

3. assumed as a base is evaluation of economics of a country which was the epicenter of civilization and thus represents its most characteristic features.

4. since there is no statistic data on civilizations of ancient world, all indexes show an expert estimation about to be specified by investigations that will follow.

After assuming these stipulations, let us try to analyze the structure of economics of ancient societies, to discover and to estimate tendencies of its dynamics. (Table 3).

Table 3. Dynamics of the structure of economics in ancient societies (in percentage to gross output).

BLOCS OF MACRO-MODEL AND INDEXES	THE MESOLITHIC AGE (8, 000 B. C.)	THE NEOLITHIC AGE (6, 000 B.C.)	THE EARLY-CLASS SOCIETY (2, 000 B. C.)	THE ANCIENT SOCIETY (THE 5 TH CENTURY B.C.)
1	2	3	4	5

Re-productional structure				
<i>Re-productional sectors:</i>				
Personal consumptions	85	69	50	40
State consumption	———	———	8	12
Inter-mediate product	5	8	15	17
Primary product	10	20	18	16
Intellectual product	———	3	6	8
Market infra-structure	———	———	3	6
Total:	100	100	100	100
Inter-sectoral structure				
<i>Branch complexes:</i>				
Hunting, fishery, gathering	70	26	10	7
Agroindustrial complex	2	35	32	25
Personal belongings and services	5	8	12	15
Tools and weapons	10	12	15	16
Fuel	5	6	7	8
Raw materials and supplies	5	6	8	9
Construction	5	7	13	15
Transportation	———	———	3	5

Total:	100	100	100	100
Hierarchical structure				
<i>Levels of re-production:</i>				
1	2	3	4	5
Communal property	70	25	20	15
Family household	23	63	50	43
Individual household	5	8	14	22
Regional re-production	2	4	6	8
National re-production	—	—	10	12
Total:	100	100	100	100
Technological structure				
<i>Technological modes of production:</i>				
The Paleolithic Age	85	30	12	6
The Neolithic Age	15	65	23	12
The early class society	—	5	60	24
The Iron Age	—	—	5	56
Total:	100	100	100	100
Economic structure				
<i>Patterns of property:</i>				
Communal	75	35	20	15
Family	25	55	45	35
Small private properties	—	10	18	25

Large private properties	—	—	10	15
State-owned property	—	—	15	10
<i>Total:</i>	100	100	100	100
Structure of costs				
<i>Elements of costs</i>				
Material costs	8	16	20	25
Reserves for depreciation of capital assets	2	4	7	10
Individual consumption	44	50	42	35
Collective consumption	45	23	15	10
Accumulation	1	4	7	8
Unproductive consumption	—	3	9	12
<i>Total:</i>	100	100	100	100

1. *Re-productive structure of economics.*

As distinguished from a primitive three-sectoral structure of re-production of the Mesolithic Age, with absolute domination of procurement of foodstuffs, and relatively insignificant weight assumed by making means of production (i.e. making tools in stone, making arrows, points, bows, etc.) and obtaining necessary raw materials, the structure of re-production in the Iron Age became a deal fuller in that it provided the product for the needs of the state, i.e. maintenance of military and bureaucracy; intellectual product (observations practiced by priests; papiri; works of art and architecture); market services, i.e. these of tradesmen and money-lenders.

The share of natural economics whose aim was to meet personal needs

of manufacturer and his family dropped more than double, but nevertheless remained largest. The share of art expenses accounted for considerably more; in this regard the ancient civilization seems to stand forever as an unattainable specimen in our eyes.

If there was virtually none of the sectors as early as under the Mesolithic epoch which had been immediately uninvolved in material re-production, they already accounted for more than a quarter of gross product of re-production during the antiquity. This growth became possible due to the rise in productivity of labor and the manufacture of surplus product by amounts sufficient for the ruling and intellectual elite to be supported, and for beautiful palaces and temples to be erected.

2. Dynamics of the inter-sectoral structure of economics.

During the Mesolithic Age, hunting, fishery and gathering accounted for about 2/3 of labor and product. In the Neolithic Age, the share of hunting, fishery and gathering dropped sharply, having yielded its positions for agriculture and stock-raising. The share of production of tools and earthenware, of housing construction, production of materials was immensely rising.

3. Hierarchical structure of economics changed along with shifts in structure of society.

During the course of the Mesolithic Age an overwhelming share of product was manufactured within communal sector, whence being transferred to equalised distribution. But formation of the family induced augmentation of the share accounting for product which family created and consumed. Collective works presuming combined efforts of a few kin communities in the framework of the tribe ('regional re-production') accounted for an insignificant share.

During the Neolithic Age hierarchical structure of economics remained three-level, but the correlation between two main levels grew to reverse; the natural household now yielded about 2/3 of products (to be consumed by itself), and the share of communal property was quarter.

In the Bronze and the Iron Ages hierarchical levels of re-production grew to be even more diversified. Development of commodity production and extension of exchange brought about the fast rise of small commodity

enterprises and households, the result being that the share of individual re-production (built only on commodity grounds) became account for 20 % of the gross product. The state-owned property was emerging, intended to maintain army and the ruling elite, to take actions in irrigation, to construct temples and palaces. Scope of regional re-production grew wider: fortifications, theatres, palaces, urban water-supplies were built up in cities. But in meantime, natural household continued to play a leading role in satisfying requirements of population, with a considerable share reserved by communal property.

4. *Technological structure of economics* was subject to radical transformations in ancient societies.

In the Mesolithic Age, the paleolithic mode of production was in absolute domination. It was based upon the appropriating re-production; communal co-operation of labor; production of tools in stone, bone and wood. But then a mode of production was originated, quickly springing into existence, which was characteristic of the Neolithic Age. This mode was focused on a re-productive economy using set of tools in agriculture, stock-farming, and construction of settlements.

That was the very mode of production to become prevalent in the structure of economics of the civilization that followed. While primitive technologies still held steady positions, some new technologies which employed use of metal began to emerge. They became prevalent in the period of the Bronze and the Iron Ages, but relict modes of production, commonly more charactersitic of preceding civilizations, still persisted, though in by far a reduced proportion. At the culminative period of ancient civilization, the technologies and methods of organization of labor which were to correspond to the mediaeval society began to evolve. Therefore, on every new developmental stage the technological base of society bore an increasing ressemblance with a puff-pastry, a main layer of which was represented by the complex of technologies charactersitic of that civilization, resting, especially at the periphery of the world progress, on relics of the former complexes, and serving, in its own turn, as a foundation for the technologies and patterns of organization of labor to follow next.

5. *Economic structure of re-production* indicates the correlation between different economic orders each of which represented a certain type of

relationship of property, distribution, and exchange and offered its own mechanism regulating economy and acting either on uneconomic compulsion or out of economic stimulation to labor in different shapes.

During the Mesolithic Age, dominant was the economic order characteristic of primitive communal system and based on communal appropriation of means of production and equalising distribution. But then an order based on familial property, equalising distribution within the patriarchal family, and natural exchange started to make first moves forward. It was this order that dominated throughout the Neolithic epoch, ensuring re-production of labor power in two following civilizations, despite diminution in the weight (about 1.5 times down from the level of antiquity). Meanwhile, two new orders based on small and large private property and on commodity economy (or rather on half-commodity economy) and destined to play so major a part in civilizations following next began to go through formation. Along with that, an order based on state-owned property came into existence. This one had to do with self-affirmation of the state, its role in the military, and with the construction of irrigational systems, vaults, fortifications, roads, temples, and palaces.

6. *Dynamics of cost structure* in the product of social re-production in ancient society can be dealt with only provided for reservation that its main part had no commodity pattern whatever.

During the Mesolithic era, product of manufacture almost entirely would be assigned to consumption, whether that be communal (collective) consumption, individual, or familial one, except for a small part intended to cover wear and tear of materials and tools. That means that there was virtually no surplus product. In the Neolithic society family consumption became to prevail, and the share of communal (collective) consumption was largely curtailed. The systematic practice in agriculture and stock-raising enforced double increase on a share of produce to be allotted to the re-production of consumed means of production. Surplus product was produced regularly now, to be assigned for accumulation (expansion of production) and unproductive consumption, for example, maintenance for Army, the state bureaucracy, temple and royal courts, etc.

Thus, the advantage taken of re-productive cyclical macro-model

enabled us to shed a light on, and even to figure out, — though, of course, assertions like these could be but very rough — the radical changes which occurred in economy of ancient societies and helped these societies transiting from a primitive structure hardly providing simple re-production and very slow progress to a full-blooded structure allowing relatively sustainable development and more complete use of economic potentials of the society.

2.5. Formation of the social and political structure of society.

The way in which the fourth level of the pyramid of society was developed was by no means less interesting than that in which the third one was. This level serves a model for the sphere of sociopolitical, state, and legal relationship.

The growing differentiation of society. While going through the stage of formation, society inherits, if slightly modifies, the biosocial differentiation which bears mark of man's long path of formation and development. Biosocial differences which prevailed as early as under the mesolithic era include:

Sex differences. The necessary correlation between numbers of men and women is a key for preservation and natural re-production of genus. At first stages of pre-history, after the group marriage ceased to prevail, it was woman that held leadership in the community. According to Rhyon Iceler (2), partnership was the most common type of relationship between men and women at that time. However, as far ago as since the Mesolithic era, at the time when bow and arrows first appeared, and most especially since the transition to agriculture and stock-raising under the Neolithic period, and the beginning of private property, the leadership was taken over by men who held it from now on throughout millenniums. Keeping necessary proportions and near equality in quantity of both sexes is ensured by natural regularities.

Age differences are determined by population's division by age groups, i.e. into infants, children, young people, adults, aged and old people. Every member of society, unless his path in life is severed by some tragic occurrence, comes through these phases. On his first and his last phase man needs support from a part of able-bodied members of the society. Each age group possesses its own physiological, psychological, and other peculiarities. Recurrently, generation of people succeed one another. Characteristic features of each generation are usually identified by its most vivid representatives. Normally they are few, but it is them that are destined to make difference, to push progress forward, to overcome reservedness of those who represent the

receding generation, desperate to preserve 'threads of control'. Antagonism of generations is the vital source for progress.

Man's average duration of life was short in the Mesolithic Age. Succession of generations was frequent, one time in 15 — 20 years. Distinctions between adjacent generations were insignificant. But duration of life was growing with every following historical stage, spreading the gap between generations.

Racial and other *anthropological* distinctions, mainly determined, as they are, by natural and geographic environment, were largely flattened due to the constant migration, which at times increased undulatingly, and also due to mixed marriages.

Biosocial distinctions also include those with regard to *language* which go back to the paleolithic period. But at the very beginning of social history they already made themselves felt, e.g. in literary monuments, many of which survived. Whether there had ever been an original fore-language, which later fell into many, or ever since human speech having come into being the languages had been diversified in different regions to enrich one another later through inter-ethnic intercourse, is still a subject to controversy for different schools of linguists. Anyway, languages and dialects aid formation of ethnoses and ethnic groups and each see a history of their own; some of them become extinct as local civilizations recede to the past.

Social divergences of still another group are of *economic* origins. There were none of divergences of such kind in the mesolithic and the earlier neolithic period, for, tightly related with the course of history, they develop out of emergence and fixation of property inequality and division of labor. Elders of the community, priests, military chiefs were gradually obtaining better part of cultivated arables, cattle, and military loot to secure it for themselves and their families. In such a way, the tribal elite emerged. From the very beginning, it took the line for further consolidation of property in private sector. An opposite pole was held by the majority of ordinary members of the community, their property being originally communal, but becoming increasingly involved into the formation of small private properties of developed plots of arables, cattle, and tools. The head of the family was dealt with as proprietor, but in fact it was the patriarchal family that owned the

property, handing it down to following generations. These groups laid the ground for classes due to come into existence in the Bronze Age.

Another sort of economic differences was due to a fast growth of social division of labor. Certain tribes, communities, families come to be specialised on certain trend of occupation, — agriculture, stock-raising, one or another sort of craft, construction, shipment, etc. Of course, the differences were quite relative as yet, and patriarchal families themselves handled the cultivation of lands, stock-rearing, weaving, making clothes and footwear, construction building, making tools of labor, etc. Nevertheless, specialisation tended to be increasingly expressed, in particular due to development of exchange and augmentation of urban economy. A family would secure one or another type of occupation, with the secrets of its trade transmitted to following generations. Appeared groups of tradesmen, money-lenders, judges, officials, scribblers, philosophers, priests, etc. Distinctions as to wealth and to way of occupation often were set down in separate existence of estates or casts.

Social differentiation also revealed itself through spread of *ethnocultural* distinctions in society, especially in the Bronze and the Iron Ages. As new ethnic groups recurrently sprang up, old ones would exterminate one another in course of warfares. Each one enjoyed its own language, religious beliefs, wedding and festive rites, way of burial of deceased, cultural traditions, and, since written language had appeared, level of literacy and system by which knowledge was transmitted, i.e. education.

Thus, acceleration of social differentiation, a constant stratification of society, with interests of strata becoming increasingly divergent, can be well judged upon as the general regularity of social development. In a way this went to enrich the social genotype of society, for the difference in potentials is always a source for development, but at the same time produced cause for sharp antagonisms, conflicts, and fighting.

War, which under the Bronze Age had come to be as much a phenomenon of social life as the state had, was none of anyone's lapse or, more so, of a deliberate realization of malign plot designed to break social treaty. War was objectively originated from core of social progress to exercise certain functions: to stimulate human activity in many spheres and to regulate

numbers of population. But the negative side of this phenomenon should also be remembered, for the price for this progress was exceptionally high. Devastating wars ruined cities, destroyed whole civilizations, bringing death to millions and exhausting productive forces and cultural treasures.

The beginning and evolution of state and law. The major social novation of the Bronze Age as the second world civilization was creation of the state and the law.

The neolithic era saw organization of social life set up upon communal, and then tribal self-government. The latter implied the collective decision on main problems by vote of heads of families or elected elders of the community, and the age-long practice embodied into traditions. However, the divergency in property positions of families, emergence of private property, social inequality, the rapid growth of battling clashes called to existence a group of people who took on governing common affairs of members of the tribe, or union of tribes, defending property against assaults and violations, solving matters and conflicts coming up in everyday life of the community, protecting against enemies from outside, and maintaining the modes of human inter-action within society which later became rules of law.

The apparatus of the state, which thus came out from society, included several branches: supreme authority of pharaohs, kings, emperor, etc., resting upon a circle of retainers held responsible for certain fields of activities (ministers, viziers, regional deputies, tax-collectors); judicial authorities (judges, police, warders); military authorities — military commanders and troops, which performed exterior functions (defense against alien raids, or assault on other countries or tribes), as well as interior ones (suppression of uprisals).

The way of looking at the state as a mechanism to affirm and maintain domination of one class over another, a machinery of suppression, is to be improved in many aspects. The creation of state and law was a tremendous move forward in dynamics of social organization, and their functions must not be set down only to class oppression, they are much richer than that.

Firstly, growth of population and stratification, complication of social relations made it necessary to bring these relations to some order, to dispose of

uncertainty and to oppose dictate of strength. Not only the tribal elite which obtained immense wealth, but common tillers, stock-breeders, craftsmen also stood in the constant need of protecting their property against barbarian raids of neighbors. For this need to be met the mechanism of community's self-government which was formed throughout millenniums, or traditions sanctified by time were no longer instrumental, for these did not provide against newly-arrived antagonisms endangering social order in the community. Therefore, the first cause from which state and law have come into being was economic, viz. the need to protect and to control private property which was then originating, and to assure re-production. The state assumed responsibility for some social undertakings: construction and maintenance of irrigational structures, palaces, temples, vaults, water-supplies, and so on; this was making another contribution into the state-owned property.

Secondly, there were social reasons for state and law to be due to come into being. Social progress inevitably created classes and estates. Those which enjoyed privileges granted by the superior positions they held needed protecting themselves against any violence from a part of majority either deprived of these privileges, or being subject to exploitation by a strength of uneconomic methods. The state proved to be an instrument to affirm class domination and privileges of estates.

Thirdly, there was also involvement from a part of external factors. What with the growing density of population, accumulation of wealth, the increasing number of wars, maintaining professional military forces joined up by free locals or contracted mercenaries became a vital practice. The state had to provide external conditions for re-production.

Fourthly, the state initiated working out legal rules, and made sure that they should have been observed. As far back in history as in 3,000 — 2,000 B. C. there were original attempts to codify rules of law. In way of illustration, it can be recalled that Mesopotamia saw the laws of King Shulgi published in the 24th Century B. C.. Shulgi founded a typical old-style oriental despotic state where he set up a severe regulation order over temple and royal lands. (24. P. 81, 99 — 100). But the most coherent official digest of statutes that survives was that of the Babylonian King Hammurabi (1792 — 1750 B. C.). Here are the sections of its contents: general principles of justice; protection of

royal property; public servants and servient estate; dealing in realty; trade and business operations; bodily injuries; contract of works. (Ibid., P. 103 — 104).

But it was the Roman law that was to come out on the top of law-making activity, as it embraced all spheres of property and social relations (public law and private law) and laid down a groundwork for the formation of legal rules in the future epochs.

Ancient states are associated with various types of political order which ranged from oriental despotia to the relatively democratic poleis of Hellas and the unique political order of the Inca Empire. Democratic political order was first established in ancient Athens in the 5th Century B. C. under Pericles. Mechanism for realization of political power was developed and refined. Then time was ripe for world empires, and this gave opportunity to develop mechanism governing policies over vast territories which were made up from scores of nations. In the Roman Empire, each province was headed by deputy and procurator, subordinates of the Emperor. Economic unity rested upon monetary one, silver sesterce and golden aureus (100 sesterces) being accepted throughout the Empire. Famous Roman roads, with total length amounting to 150 thous. km, 4 — 5 meters wide, built upon stone slabs covered heavily with gravel, helped fast movements of troops and mail, and served as transport arteries of the united Empire. (24. V. 3. P. 121 — 122).

The neolithic era was unaware of *political life*, for community's members enjoyed equal rights, and social order was rather simple and homogenous. It was not that there was no hierarchy in the family and the community, but it had never shaped into something like political power.

Existence of the state, together with the growing divergence in property and social status, necessitated that politics emerged as a way to reveal interests felt by various groups and classes in their attempting to take over the state power, with all rights and privileges with which it was associated. Of course, there were no political parties in the modern meaning of the term. But historical records surviving from slave-owning states substantiate takeovers, coups, clashes, uprisals, and fighting between different groups for taking power. Political struggle involved multitude of participants and made them form electorate unions on various grounds. For example, during excavation in Pompeii, many inscriptions were disclosed. Among these findings were the

pre-election slogans in support of candidates running for local magistracy month before the explosion of Vesuvius. 'Gai Custius Pata is recommended by aggregate of masters of jewelry to fill the office of edile.' 'Confectioners claim support for the vote for Trebius'. (Idid. P. 134).

The idea of civics, associated with a community of interests, forebears, traditions, was firmly establishing itself in men's awareness. 'Relation between people, — Cicero wrote, — who are linked to the same *civitas* (civic community) is especially solid since fellow-citizens have indeed very much in common: forum, sanctuaries, porticoes, streets, laws, rights and obligations, decisions taken together, participation in elections, and, in addition, habits, links based on friendship and kinship, actions undertaken together, and benefits to reap from them'. (Ibid., P. 116). However, very few were destined to enjoy such citizenship. Slaves were rightless, and rights of *coloni*, *peregrini* and *linertini* were restricted.

It may be worth trying to trace dynamics in the destinies of rights and liberties in the three first civilizations, a swing of the liberty pendulum.

The Neolithic civilization tended to equality and personal freedom of all community members, although the family members were rigidly subordinated to its head. All them shared same functions when tilling and reaping crops, raising cattle, building new houses and settlements, all them obeying the severe intercommunal discipline. This discipline, imposed, as it was, by rules of behavior, in fact reflected experience accumulated through ages and rested on support of elders and other community members.

The civilization of the Bronze Age is the time of an unbound non-liberty. Slaves were deprived of all human rights; in fact, they were treated and referred to as cattle. Peasants, craftsmen, tradesmen, and even nobility were in profound personal dependence on pharaoh, or king, considered to be a direct descendant of gods. He was bound with no restrictions as to impose any will upon his subordinates, punish and murder them. The only cast to stand aloof was probably that of priests and their inferiors, and within this cast the hierarchy was as rigid as in the military. Art was maintained by pharaoh, and was ordered to celebrate him. Pharaoh was in fact a single person who was free in this realm of non-liberty. All the rest were unfree, though to a different extent, and pharaoh himself depended only on the will of Providence.

The pendulum began swinging towards freedom in antiquity, though only part of the society succeeded to see this motion: its members who were granted rights by the fact of being recognized as citizens. In Athens emerged the notion of liberty, seen as independence of citizens of polis from any sort of oppression. This was the notion of democracy. Rights and liberties of Roman citizens were scrupulously specified in statutes of law. Free citizens were equal and independent. They took part together in discussing and making decisions on issues related to polis, and elected rulers and judges. Free tillers and craftsmen dealt in products of their labor, frequently falling back on tradesmen's services. Social life was regulated by a great number of statutes, and unawareness of these was not sufficient to be released from responsibilities. However, this sort of liberty and social equality was far from being ideal. Rulers in both Greece and Rome, and more so in oriental states, did not hesitate to choose ways and methods when facing with need to destroy those who displeased them. Citizens varied tremendously by their wealth. Rather than their Golden Age, did democracy and liberty see a very initial stage in their formation.

2.6. Spiritual life of ancient societies.

When it comes to rapidness of pace and to achievements, development of human spirituality has no match among historical processes of ancient civilization. For it was a savage who entered upon the neolithic era, with all vagueness of representations about the world around and himself, the feeble sprouts of culture which revealed themselves in rock paintings and ritual dances and which were crowned with primitive animism, and it was, then, a civilized man with well-established system of scientific outlook, who celebrated antiquity for the breath-taking excellence of art, developed system of transmitting knowledge and ethical values, and the spiritual treasury of world religions, except Islam. Results that mankind attained in the course of the first three stages of historical process immensely exceed in importance those associated with the following 1.5 millenniums, which makes us to recall the fact that during infancy, childhood and youth every man acquires a bulk of knowledge and skills to be employed on next stages of his life cycle.

The first coils of the spiral of scientific knowledge. Formation of every science goes through three stages: collection of data concerning developments in sphere under research; making of applied generalizations and testing them in practice; selection of verifiable original material (descriptive science immediately linked to practical purposes); theoretical speculations concerning patterns and dynamics of sphere under research; proposes and check of scientific hypotheses and theories; formation of abstract science.

Empirical grounds for natural and most of technical (engineering) sciences were laid down during the neolithic, and at the same time applied sciences must have emerged. In mastering agriculture and stock-raising, various sorts of craft (making tools, clay vessels, clothes, primitive jewelry), building houses and settlements, healing wounds and diseases, an ingenious, prone for generalizations, and an observant member of neolithic community learned facts about movement of celestial bodies, solar and lunar cycles, succession of seasons (the information that later aided creating first calendars), to read and to count (first steps of mathematics); comprehended nature of

water, fire, and materials he utilized (the grounds for emergence of physics, mechanics, and chemistry); made acquaintance with habits of living creatures and his own organism (biology and medicine). Basis for technical sciences (material, agricultural and construction sciences) was established by practical activity, by method of errors and tests.

Civilization of *the Bronze Age* pushed forward the formation of a whole pallet of applied sciences by extending the range of human activity, and helped the emergence of social groups, primarily priests, whose members were engaged in making generalizations and observations. Irrigational agriculture and seafaring produced want in systematisation of astronomic knowledge. Construction of palaces, temples, pyramids drew on the developed counting and measuring system (geometry and arithmetics), and the empirical grounds of physics, chemistry, material science and agronomics, and construction science (it was then that idea of 'golden section' first emerged). Smelting of bronze and copper laid the basis for metallurgy. Progress in military machinery was much indebted to empirical understanding of principles of mechanics. Important steps were made to advance medicine within a practical field and to understand better the anatomy of human body.

The Bronze Age pushed forward the emergence of social sciences and the accumulation of their empirical basis: applied economics and statistics (needed to govern the royal sector), political sciences, geography, ethnography, linguistics. The invention of written language made it possible to preserve knowledge, to record and relate events, and to accumulate historical data.

Therefore, the apogee of the Bronze Age can be associated with the origins of the uncomplete system of natural, technical, and social sciences, and with transforming empirical collection of data into the lower foundations of sciences which had immense applied meaning and were tested by experience.

But a real breakthrough towards the upper levels of understanding took place in ancient classical society. The first scientific revolution occurred in Ancient Hellas in the 6th — 3rd Centuries B. C., resulting from accumulated observations and facts in the course of developments in technology. It was the formation of system of scientific outlook that made up its contents. Some of the major scientific achievements of that period are worth listing: materialism

of Thales, Heraclitus' dialectics, the philosophical systems of Socrates and Plato, the atomistic theory of Democritus and Epicurus, the geometry of Pifagores and Euclides, Archimed's mechanics, the medicine of Hyppocrates, the works of Aristophanes and Stratones on geography, and Herodotes' historical works. But the height of that period is Aristotle's naturphilosophy, which formed basic ideas for biology, logics, principles of political economics, and other sciences. Human view of nature underwent the most crucial change in that time. The first system of natural science, the grounds of techical and social sciences was laid down.

Epicenter of scientific progress shifted from Egypt and Mesopotamia to Greece. 'Greeks was the only nation to adopt, largely without taking note or giving recogniton to that fact, the mass of knowledge still persisting after many centuries of devastasting warfares and the relative neglegence of knowledge in ancient empires of Babilon and Egypt. But Greeks passed far beyond that mark. They took up this knowledge and due to their own profound concern and reason turned it to something simpler, and more abstract, and more rational'. (7. P. 95).

Ancient Greece presented the world with a pleiad of eminent thinkers and researchers among whom Plato (427 — 348 B. C.) and Aristotle (384 — 322 B. C.) are the most distinguished. History of science has never seen anyone who might be put on a par with Aristotle as to the impressive scope of researched fields, and the amount of new knoweledge obtained in each of these fields, and the extent of influence upon developments in scientific thought.

The continuation and development of the scientific breakthrough in Ancient Hellas was the Hellenistic science (330 — 220 B. C.). The most remarkable event of that period was the creation of Museum of Alexandria which happened to be the first scientific state-supported institution.

The aforementioned achievements in science of the Hellenistic period can be supplemented by the Stoicism of Zeno; the astronomy of Hipparchus and Ptolemeus; the geography of Eratosthen (enumerating with amazing accuracy the circumference of Earth); the botany of Theotrastus; the pneumatics of Ktezibius; the anatomy of Galen; phisiology and medicine; the history of Egypt, recorded by priest Manethon; the Polibus' theory treating

cyclical succession in patterns of states.

In the Roman period of ancient history emphasis was placed upon applied studies, and none of scientific discoveries are to be found to match those made by Greeks. The most important naturalists were Lucretius and Seneca. Ovid's 'Celestial phenomena' and 5-volume 'Astronomica' of Manil, written by hexameter, left the remarkable trace in astronomy. But the contribution Roman scientists made to formation of social science was one of the far illustrious rank. Strabo wrote 17 works dealing with geography and history of all peoples known to be living in that time. Titus Libius is the author of 142 books of Roman history; Pompeus Trog, Nicholas Damascus, and Diodor Sicilian created multi-volume works on global history. Great achievements were reached in astronomy, geodesy, construction art and architecture (with Vitrubius' 10 works on this subject), martial technique and strategy.

The contribution made by local civilizations of the East, and particularly by these of China, into formation and development of scientific understanding, is quite valuable. Note should be made of the philosophical and ethical doctrine of Confucius (551 — 479 B. C.); schools of 'nomadic scientists' who met recurrently in the Academy Tsi-Xia, located in the capital of the Ch'i Kingdom; Moh Tsi's concept of 'universal love' (479 — 438 B. C.) which served a source for 'ideal state'; Taoism with its exaltation of emptiness and chaos and the concept of ideal king who rules by means of 'non-action', without impeding natural course of events. There was the school of 'legists', the most distinguished of whom, Shang Yang, proclaimed law to be uniform and indispensable for all subjects of the state, with a ruler however resting above the law.

The later period is marked by successes in astronomy, medicine, technical sciences. Chinese scientists learned combining lunar and solar cycles in their calendars, figuring out trajectories of celestial bodies, and predicting lunar eclipse. In 124 Chang Huang designed a model of the celestial sphere which was set moving by water. He also constructed seismograph. The Chinese medicine thought of man as a microcosm, a sort of dynamical equilibrium of cosmic forces and rhythms. Progress was made on techniques of prophylaxis, diagnostics, and treatment of disease, including acupuncture,

cauterization, and massage. Paper, compass, cog-wheel, watermill were invented in that period.

Among scientific achievements of India it is the work of great Indian grammarian Panini that is worth mentioning prior to others. 'Panini's work is the most complete grammar to be ever composed in any part of the world before the 19th Century. It includes 4, 000 sutras and provides amazingly thorough and complete characteristics of the ancient Indian language.' (8. P. 38).

The utmost height was reached by the Indian science in the Gupta epoch in the 3rd — 5th Centuries A. D.. 'The immense achievement of Indian mathematics in the first centuries A. D. was the creation of the decimal positional numeration which since on is in use all over the world'. (Ibid. P. 548). Arabian mathematicians adopted this system from Indians. Indian scientists learned making all operations with fractions, calculating simple and compound percentage, extracting square and cube roots, solving quadratic equation. They laid grounds for trigonometry. The most important Indian mathematician was Arya Bhata, who expounded in his treatise 'Arya Bhatiya' (about 5th Century A. D.) rules of extraction of square and cube roots, solution of linear equation with an unknown quantity, and principles for theory of numbers. Dealing with problems of astronomy, he put forward the idea that the Earth rotates around its axis; he also developed a theory of solar and lunar eclipses. Indian scientists obtained the marked accomplishments in the fields of chemistry, metallurgy, and medicine. For instance, one of the treatises on medicine, *Sushruta-Samhita*, relates 650 medicinal remedies, more than 300 operations, 120 surgical instruments. (Ibid. P. 559).

In the early 20th Century the ancient Indian manuscript *Artha-Sastra*, 'The science of politics' was found. It is thought that the author of this book was Kautilya, the minister of the king Chandragupta (the late 4th Century B. C.). This was one of the greatest treatises of antiquity, one to be put on a par with 'The State' of Plato and 'The Politics' of Aristotle. The treatise dealt with causes of royal power, punishment as an instrument to maintain public order, structure of monarchical state, taxation, economic policy, doctrine of foreign policy, and diplomacy.

Pitirim Sorokin attempted asserting the dynamics of scientific

discoveries and technical innovations in Rome and Greece. He came to conclusion that scientific activity of Greeks reached the height in 600 — 300 B. C.. Roman inventions reached their utmost during the 1st century A. D. to be followed by a sharp decline, a result being that in the late years of the period (500 - 600 A. D.) the level of scientific innovations was lower than it was in its early years (the 8th — 7th Centuries B. C.).

Thus, it was the world of antiquity by which the first tremendous spiral of understanding closed up. As man was working out potentials of his intelligence, he penetrated into mysteries of nature and created the system of science to become the groundwork for the majestic edifice of modern science.

The heights of culture and art. Apart of science, culture is another legacy left by antiquity: sublime structures and pyramids, the rich diversity of sculpture, the excellent literature. Yet a smaller part of this heritage has come down to reach our days, but what has survived would never fail to amaze us.

Premises for cultural upsurge were laid down back in the neolithic era, though there are few monuments that survived from that time. Communities concentrated into settlements and first poleis, life that tended to become more and more settled, rise in productivity, availability of freed time, — all these pushed forward the boundaries of the neolithic art. It materialized in decorating houses and ceramic vessels, in temple wall-paintings and clay pillars. In South-Eastern Europe there were findings witnessing the elements of the pre-written language, referred to the aeneolithic era: these were clay miniatures showing various objects, creatures, symbolic figures for numbers, pictographic signs.

In the Middle Asia, use was made of volumetric figures to convey messages, and on the verges of 4, 000 — 3, 000 B. C. signs were engraved by reed stick in clay tablets. 'Creative work accompanied domestic production of articles that were of importance in every household: whether it were tableware or colored beads, statuettes of gods or ancestors, but, particularly, those articles that were to be used in cult or burials. Ceramic makings of the neolithic and the early aeneolithic demonstrate a stage in imaginative generalization, stage which is, above all, characterized by the rhythm. The beginnings of rhythm are not conspicuous until the neolithic era, whence it

emerges as intention to put space in order... Paintings on tableware may serve an indication of how man learned to generalize what he felt when contacting nature, imparting style and structure to objects that revealed themselves to his sight in such a way that turned them into an orderly, geometrized ornamental pattern composed of animal or vegetable figures and the inexorably following rhythm'. (24. V. 1. P. 112 — 113). Rhythm penetrated ritual music and dances.

The Bronze Age opened a new vista for culture and art to develop into a separate occupation within division of labor. The opportunity was fully taken in the Iron Age, which led to the overwhelming cultural upsurge and scores of monuments everywhere, but especially in Mesopotamia, Egypt, Greece, Rome, India, and China, these primary breeding-grounds of culture.

Dynamics of culture include extra-long cycles which reflect analogous cyclical fluctuations in formation and development of society. Integrated in this dynamics are the culture of the upper Paleolithic and Mesolithic Ages (pre-history), the Neolithic, Bronze, and Iron Ages (the core and the most investigated part of which is the culture of antiquity).

Urbanistic revolution at the dawn of the Bronze Age opened opportunity for building monuments of architecture, i.e. temples, palaces, vaults, and, later, theaters and public buildings. Thus, in Sumer in the 3rd mill. B. C. temples were erected on raised platform, encompassed by walls. The Thebesian palace of Amenhotep III covered tremendous area and consisted of the personal quarters of the king (reception room, banqueting hall with the throne, bedroom, bathroom and toilets); the quarters at the service of the pharaoh's wife Tiy; premises for courtiers; workshops; the big hall for festivities and entertainment. Amenhotep IV who took the name of Aehnaton built the palace in the new capital city of Ahet-Aton, with its eastern façade approximating 700 meters in length. The palace was partly built in stone; it embraced numerous courtyards and premises which were furnished with pillars and statues, and adjoined to the bridge serving as a dwelling. In the center of the bridge there was so called 'the window of appearances', through which subjects could have a glimpse of the pharaoh during official ceremonies. (24, V. 1. P. 298 — 299).

The palace of Assyrian kings in Nineveh and Knossos palace on Crete

were of enormous size. But temples of classical antiquity did not yield them both in square or grandeur. One of the most magnificent was the Acropolis complex in Athens, designed and constructed by Themistocles under Pericles (in the mid-5th Century B. C.) within 8 or 10 years. No less magnificent was the Zeus temple in Olympia, also erected by Themistocles.

In their quest to perpetuate memories about themselves ancient rulers allotted tremendous financing for construction of tombs. The most conspicuous ones are the pyramids. That of Cheops, for example, with 146 m in height, and base of each side 230 m in length, was assembled of 2.3 mln stone slabs. It was calculated that to deliver all stones of which the pyramid consists would take today 20,000 freight trains up to 30 wagons each. (21. P. 23). The classical antiquity did not foster much building of tombs and burial vaults. The emphasis was laid instead upon constructing temples and public institutions. Among Roman buildings, Coliseum and Pantheon seem to have been the most superb ones. An amphitheater housing scores of thousands spectators, as it was, Coliseum witnessed fightings between gladiators; Pantheon was a circular domed rotunda, 'the temple of all gods', remarkable for the splendour of its interiors.

Sculpture was important for its role in the cultural heritage of ancient worlds, — the role we are lucky to appreciate today. Sculpture furnished and embellished palaces, temples, pyramids, central city squares. In the Bronze Age impressive statues were erected to glorify gods, pharaohs, kings. Sculptors at the court created images of pharaohs, kings, and their retinue. A sheer masterpiece of this kind of art is the sculpture of Egyptian queen Nefertiti now kept in Berlin museum. In the classical antiquity, and especially in ancient Greece, marble statues were created, many of which remain in original or in Roman copies. These statues served to reveal the adoration felt by Greeks before the beauty of human body. Sculpture enables us, after more than two millenniums, to form the idea of how Greek prominent politicians and scientists looked like, and what the Greek idea of god embodied in human frame was.

Sculpture was a mass tenure of fine art in ancient Rome, but it never came out on the tops reached by Greeks. There was a continuous manufacture of copies of famous Greek sculptures, presenting war chiefs, emperors,

politicians.

Palaces, temples, and public buildings were ornamented with fresco and mosaic. One of the most famous frescoes is so called 'Parisienne', disclosed in Knossos palace. Profusely and diversingly painted were amphorae, other vessels, famous monuments of painting on wood (Greece, the 6th Century B.C.); portraits on mummies' sarcophagi in Egypt. As the father of painting as a fine art is recognized Apolodor from Athens (the last third of the 5th Century B. C.), who was the first to employ half-tints and chiaroscuro, light and shade.

Ancient societies fostered oral folklore; literary works, myths, legends, poems were created; the brilliant monuments of these are Homer's 'Iliad' and 'Odyssey', or the psalms of Indian Vedas. Bible comprised old literary compositions, such as Canticles. Then works with individual authorship behind them came into being to form most sources for information on history, culture, and religion of ancient peoples.

About 150 monuments of the Sumer literature (Lower Mesopotamia, the 3rd millennium B. C.) survive: versed records of myths; epic songs and legends; wedding and love songs; hymns; instructing sermons; burial songs which wail over and praise kings; dialogues and arguments; collection of tales; proverbs and anecdotes; didactic essays for schools, etc. The Babylonian literature boasts a heroic epos called 'The Legend of Hilgamesh', recorded before 1, 900 B . C.. It is a versed work, for no imaginative prose yet existed in this period, and all literary works were versified. Among literary monuments of ancient Egypt the most famous are 'A story of Sinuhath' (which is a biography of a sort), 'A tale of shipwreck survivor', 'A song of the harpist', and passionate Ipuwer's calls to unite the country, *Prophecies*. Among the old Chinese literature of the Chou epoch note should be made of canon Shi Tsin, *The Book of Songs*, the collection of hymns and 'Folk Songs'.

From the 5th Century B. C. and on the drama began leading the way in arts. The Athenian Aeschilus (525 — 456 B. C.), recognized to be the father of tragedy, wrote about 90 dramatic works. Writings of Sophocles (497 — 406 B. C.) reach into 123 dramatic works; in fact, his 'King Aedip' never stopped being put on, and the same holds true about the satiric dramas of Aristopanes (445 — 385 B. C.): *Lisistrata*, *Horsemen*, *Birds*, *Women in People's*

Assembly, Wasps.

Theater in Athens became a focus of public life. 'It is not accidentally that theater reached such heights in Athens in the 5th Century B. C., for Athens was the most democratic polis in Hellas. Theater affected views and formed convictions of free Helladic citizens. Theater was a social institution, supplying a polis' need in festivities. Theatrical was a mass event, attended by majority of citizens, and arranging it was a liturgy (an office) of great dignity and importance; since the time of Periclus and on the state refunded tickets for poorest citizens'. (24. Book 3 P. 328 — 329).

The Hellenistic literature seldom alters early Greek traditions, but few works can claim the features of precedent masterpieces. Among undeniable heights of this period Menander's *Comedy of Tempers* cannot be overlooked. Monumental achievements of the early literature of the Roman Empire are represented by Virgil's *Aeneid*, the love elegies of Ovid, Horace's poems, writings of the first Roman prosaist Marcus Portius Cato, the Elder, (234 — 169 B. C.) and comedian Titus Mactius Plautus (254 — 184 B. C.)

Under the later years of the Empire literature and theater sustained a crisis. Actually they produced nothing in the least reminding of the top brilliance of the Athenian spirituality.

The Indian culture attained exceptional heights during first centuries A. D. Sanskrit became the language in which Mahabharata and Ramayama, the two greatest Indian epopees that can match *Iliad* and *Odyssey*, were set down. Kali Dasa, who lived in the 4th — 5th Centuries, is seen now as one of the illustrious writers and playwrights of anitiquity. The most well-known writing of the Indian antiquity is *Panchatantra* ('The five books'), where the realistic and the fantastic plots are intermingled. Buddhistic temples acquired world acclaim for the whimsicality of their architecture and sculpture.

The ancient culture on the American land retained for many years much peculiarity. One of the local civilizations was that of Olmecs, who reached refinement in working with stone (bazalt, nephrite, diorite). The gigantic stone heads survive, their diameter reaching into meters. Olmecs built impressive monuments, such as the ritual stepped pillar in El-Tajin (Veracruz), dated about 600 A. D.. Priests of Monte-Alban were ground in the records of Olmec written language and mathematics which had been set down in lines

and points in order to develop their own system of writing. (16. P. 87, 91).

The Mayan was another local civilization in the region. 'There can be no doubt that the culture of Maya has been one of the most outstanding creation of the human spirit over along the American continent. Where unpassable selva, volcanic mountains, swamped areas, arid plains are now infinitely dominating, the Mayan Indians managed to get nature to their obedience and to create the greatest civilization which existed for more than a millennium.' (Ibid. P. 130). Surviving fragments of this culture are represented by variety of ceramics, bulky sculptures, platforms, pyramids.

The largest city of the classical period of the Maya civilization was that of Tikal, covering the area of 16 km² and comprising about 3, 000 buildings, which were temples, observatories, ceremonious structures, and dwellings. The central square was enclosed by pyramids and palaces.

It is the griveous fact that European colonizators devastated most of the unvalued cultural wealth of the pre-Columbian America. More than in anything, they displayed enormous zeal in destroying books and manuscripts.

What were the tendencies that characterized the dynamics of *content* of art in ancient societies? Pitirim Sorokin identifies four types of fine arts. The *ideational* art is focused upon the supersensible and divine, not upon the sensible and earthly, world. Comitted to bring believer closer to God, this art naturally relies on a symbolic style since phenomena it deals with are not possessed of material shape. The *sensuous* art is focused upon the real world and shows landscape, events, man in the realistic way; its style may be called naturalistic. The ideational art results from combination (synthesis) of the ideational and the refined forms of the sensuous art, for it is nobility in reality that it seeks. The eclectic art does not rely upon one style, being in fact a mechanical merge of many forms. (48. P. 436 — 437).

The paleolithic era witnessed a domination of the sensuous culture (rock paintings of animals, sporting scenes, etc.). 'The Neolithic Man was charasterically an artist of the ideational culture, without bearing any features pertaining to the sensuous culture... The ideational art of archaic Greece supplied the perfection of the Crete-Mycenaean art... Since the late 6th Century B. C. we observe the decline of the ideational art and the genesis of the ideational art to attain its flowering in the 5th Century B. C., at the time of

Theodius, Aeschilus, Sophocles and Pindar... That sort is an idealized, a typological art. It is not corrupted with anything vulgar or mean or sordid... It is noble, calm, and exalted. Since the 5th Century B. C. wave of the sensuous art grew sharply, with that of the ideational art going down. This resulted into breakup of the ideational synthesis, and from about the 3rd B. C. till the 4th A. D. was lasting the domination of the sensuous art.' (Ibid., P. 439 — 440).

As distinguished from the monumental art of ancient Egypt or Mesopotamia, overwhelming with magnificence, and glorifying gods, pharaohs and kings, the Greek art exalts and rejoices man with the vehemence of a young vigor and energy, the perfection of shapes, and the diversity of pallet. It is essentially optimistic and happy; in pursuit to reveal the perfection of beauty it imparts the beauty of human appearance and frame to gods.

The crisis of the late ancient art was leading everywhere to a pompousness, a loss of ideal harmony.

Emergence of education. The first revolution in education. The tremendous augmentation of knowledge, lore, and cultural heritage to be adopted by every generation which came next called for radical changes in education and teaching.

In the Neolithic Age teaching was basically conducted within the limits of family, and labor training was naturally joining in the emerging socioprofessional division of labor. From his childhood man would observe natural phenomena, as he joined in routine of his family and community. When grown up, he began to work, at home first, and then on the field. He would be involved into making some craftwork, into some primitive, assisting operations. Rite of initiation into adults would mark the point when adolescent, after having obtained a required minimum of skills and knowledge, and having passed an exam of a sort in the face of adult members of family or community, became a full member of either in his own right in that hence he could practice hunting, tilling, cattle-breeding, craft, or participate in warfares.

Range of knowledge and skills to be adopted by an adolescent or child of that epoch should not be underestimated. A dangerous and risky life, and struggle for survival required an ultimate tension of physical strength and

intellect, a neat fulfilment of many labor, military, ritual operations. Life was both a school and a harsh examiner, and death was often the payment for a single mistake. But educational process here did not yet become an independent and isolated way of activity.

Things became completely different at the next stages of the ancient society. What occurred was division of manual labor from intellectual one. While training manual workers was still inseparable from production, to make intellectual workers fitted for their functions demanded establishing specialised schools for priests, scribes, philosophers. Here a class of people occupied with upbringing of children on a professional basis came into sight. First education institutions were founded. This was the first revolution in education, an immense step forward in the progress of mankind, bringing forth beneficial premises for origination of science as a system of knowledge, for a further development in technical fields and for other lores, for example in sculpture and architecture.

The division of educational process was preceded by the creation of written language. To master literacy demanded taking up intense training, tutors possessed of a peculiar lore of transferring knowledge, and specialised manuals. As early as in the middle of the 3rd millennium B. C. in the Sumer society appeared, in a capacity of specialized institution, the school of Eduba, focused on training scribes and land surveyors.

There were schools for scribes and other educational structures in ancient Egypt, as for performing diverse social functions (such as these of officials, scribes, accounting clerks, priests, sculptors, architects, stock-breeders, healers) a special learning in each of these fields was vital. Educational colleges which were founded bore the names of 'houses of life'; there, along with teaching, sacred books were being compiled, and studies in the field of medicine were being performed. The surviving admonition sent by the father to his son who was in 'The school for teaching scribes' reads: 'I have learned enough of manual toil. Let you give your heart to the letters. I really worship man who is free of manual work; indeed nothing seems to be of more dignity than the letters. As man plunging into water, do you penetrate into the depths of the literature of Egypt. Man who has mastered the art of writing is a superior in the mere strength of this. Passing a single day within

premises for teaching is better than eternity without it...' (7. P. 79 — 80).

Philosophical schools, the informal circles of the young fostered by eminent philosophers, largely contributed to the rise of creativity and the golden age of a free thought in Athens. Through free dialogues the accumulated knowledge would gratuitously be handed down, and pupils learned expertise in understanding and speculating. Best known are the school of Socrates, Plato's Academy and Aristotle's Lyceum. Plato's Academy, opened in the year 487 B. C. in the garden attributed to the god Academos, offered courses in mathematics, astronomy, and music, and encouraged discussions. Plato taught there for 40 years. The Academy was banned by the Emperor Iustinian in 525. 'Its great significance was that it has been the originator for all universities and scientific societies till today.' (Ibid., P. 116).

With the aid of pupils who were in his Lyceum Aristotle made the description of the state order of 158 poleis. He proved that the succession of patterns of the state power (monarchy, tyranny, aristocracy, oligarchy, democracy, ochlocracy) was, while these patterns certainly transforming one into another by a due regularity, of a cyclical character. This afforded to create the first generalizing politological work, *Politics*. Aristotle was the teacher of Alexander the Great.

Education in ancient China was encompassed by great attention, with emphasis being placed for a long time upon teaching hieroglyphs and the Confucian philosophy. In the year 124 B. C. one of the Han Emperor, Wu Ti, set up the school in his capital city. Students who passed finals (they chose tablets with the topic of an essay inscribed on them by shooting a set of tablets from the bow), were granted offices of state executives. In such a way, the state system of preparing officials was found.

Thus, the first revolution in education aided further developments in social and professional division of labor, being virtually a component to the latter. It also aided the formation of a specialised undertaking which assisted younger generation to master the beginnings of literacy, culture, science, management, martial art. However, this system comprised yet a narrow circle of young people engaged in intellectual work of various sorts, kept operating over a smaller period of their lifetime, and was exceedingly diversified in different countries. The family and an occupation in some labor capacity

remained for overwhelming majority of people the common way to master a needed minimum of knowledge and practical skills. School of life was prevalent over isolated educational school.

In pre-Columbian America, a system of education established in the Inca Empire is one of the peculiar interest. Two types of educational institutions existed there. As one of them served a source for the local aristocracy to get higher education, which covered languages, history, martial art, management, technique of construction, the other was institution for beautiful girls destined to serve the god of Sun, or to marry representatives of the emperial nobility. There much regard was given to teaching poetry, music, and dancing. (16. P. 382 — 383). Nevertheless, there was none of an educational system in America those days to be so well-evolved, and so diversified, as was in Europe, for the isolated development did not fail to affect progress in the spiritual sphere.

Morals and religions in the ancient society. Under the mesolithic and neolithic eras the tightly intermingled moral rules and religious beliefs were reciprocally supplementing and supporting. Worked out throughout ages and slowly changing, as they were, the rules of inter-communal behavior were confirmed by references to will and claims of superior forces believed to be beyond man's control and to impose punishment on him whenever they felt it deserved.

‘In this mythological sensation, which is certainly not yet to be called philosophical, and which is still difficult to call religious, there is some kind of proto-ethics, for the subject of myth does reveal what is bad and what is good. However, this proto-ethics is automatic; it does not build up into a logical system; it goes just like that: what is useful for one's community, one's comrades, one's children is good; and in the view that any men without the limits of the community are enemies, cheating or murdering them is tremendously good. And what is bad is usually enchanted by magic, tabooed, so that as doing a bad thing will make you die, not even because you will be murdered for doing that, but just for the fear of the taboo itself...’ (24. V. 1. P. 54 — 55).

Primitive man existed in the constant fear to violate multiple taboos

and bans and undergo a severe punishment. And since there was no end to enemy assaults, dangers from wild beasts, diseases, natural calamities, etc., with all-mighty gods and totems abounding, man endeavored to propitiate them by rituals, dancing, and sacrifices. Animism, the phenomenon of men's deification of Nature, was the unbound domination. Ancestral cult was maintained by the severe adherence to rules established and left by forebears, and by punishment of apostates. This, however, was inevitable and even necessary, for it was a way to hand down vital experience accumulated by many generation. No doubt this was binding any initiative, any deviation from the rigidly established orders. Priests supervising observance of religious ethical rites and rules performed a useful function in that they drew on accumulated experience. And, above all, spheres of cultural life, that is, understanding, art, education, ethics, and religion, were still inextricably connected.

The more man's independence from nature was growing, as he proceeded to the productive economy, the more social differentiation, class division, and the emergence of state and law contributed into altering the picture of the world. The hitherto unified spiritual flow clearly divided from material production and broke into several streams, which, though still interacting, were now all on their own. Many functions became carried out by groups of people occupied in these specific field; they were priests, architects, sculptors, dancers, musicians. But as to the morals, as to seeing to fulfillment of a code of human behavior, no stream so far sprang up. Care to interpret and to implement moral rules was taken up by servicemen of adjoining streams: priests, who attributed ethics to god's will; jurists (who raised some of the former moral rules to the rank of legal ones, — meaning that abiding by these rules passed under the state's control and the court, authorized by the state); teachers (who supplied younger generation with a knowledge of this code); philosophers (interpreting ideas of ethic rules).

The contents of rules also changed. What was incongruous with communal life, and severely persecuted, as, for example, capture of communal property, oppression, and, at times, conversion of fellow-tribesmen in slavery, was now rested upon religious myths and ethical regulations (do not thieve, do not want property of your neighbor). Priests also built up into a propertied,

slave-owning class, claimed significant share of manufactured produce, and captured loot to increase their wealth and to make sacrifices. In this way, all along with power of the state, that of religion was coming into existence, which felt its basic concerns common with these of other exploiting classes. Nevertheless, this power was frequently opposed to secular governor, as happened many times in Egypt; in some cases a governor would proclaim himself a chief priest, a direct descendant of divinity on the earth. The tendency was more than clear in efforts of the pharaoh Amenhotep IV (Ehnaton) to set up a new religion, in the making of which old gods such as the Thebes-bred Amon-Ra would have to be subverted, to the effect that powerful temples would have been deprived of their property and authority. But this attempt met no success.

The revolution in ethics and religion at the dawn of the second civilization burst into dramatic change in both contents and functions of these spheres of the spiritual life, and determined for millenniums their further developments. However, it did not eliminate polytheism, distinctions in religious beliefs, and ethical rules with different peoples.

Religion and mythology of ancient Greeks were most congenial to man, rooted in his everyday life. The family of gods which inhabited Olympus bears striking likeness with a community with the developed division of labor for having its own supreme governor (Zeus). There was the variety of occupations (blacksmiths, tradesmen, sculptors, warriors, etc.), with each sector of occupation headed by its ministring god. The Immortals often fought each other, intruded into affairs of men, married mortals, and raised their children. Worship of gods required sacrifices and construction of magnificent temples.

A next revolution in this sphere took place on the eve of the new era; Karl Jaspers called it 'the axial time'. (64. P. 32, 37 — 39). The chief element of these developments was the formation of *global* religions (Christianity, Buddhism, Judaism, and, a short time later, in the 7th Century A. D., Islam). The origination of the global religions was enforced by inner causes of history.

This was a time which saw the onset of not only the following civilization, but of the primary supercycle, the triad of civilizations. The potentialities of the first breakthrough were depleted to a considerable degree,

with the population of the globe having grown high, and the growth rate slowed. As oppressed classes were boiling with displeasure, they chose to find a sort of unified spiritual benefit outside the degenerated and disjointed world religions vainly trying to support the weakening authority of the state. Moral disruption of ruling classes and their milieu was obvious. This made up another strong case to searching for new ideals and moral rules.

The secondary cause of the origination of the global religions was perhaps the rising tendency by which formation of world powers and augmentation of reciprocal economic and cultural ties experienced an increasing need in the spiritual unity. It is true, however, that ideological unification was exerted from below, not from above. Persecution of Christians succeeded only in extending numbers of martyrs and adherents of the new religion. This forced the most prescient emperors to make Christianity the official religion, but draining its equalitarian appeal and maintaining its passiveness by the promise of award for earthly sufferings in the future paradisiacal life. However, it was somewhat later, at the emergence of a next supercycle, that the global religions came to be a dominating ideological tendency, and political and economic power. Moreover, at the first steps of their existence these religions were experiencing much confusion, with growing number of sects and movements.

The founders of the global religions were real people who lived on Earth. Siddhartha Gautama, who was born in 566 B. C. in the house of raja and later called Buddha (enlucidated); Jesus, a carpenter's son, from whose date of birth we count off years of the new era; Mohammad, who came up with his prophecies in 622. This time saw preachers of their sort and alike in hundreds, if not thousands. But what *really* matters is not whether they did really exist, nor how much validated are their embellished biographies, but that the seeds which they had sown dropped into the fertile and beneficious soil, making a great appeal for millions of people. 'The further societies of the late antiquity developed, the less were traditional ideologies sufficient everywhere to supply the needs of societies... Everywhere ideological crisis was underway. Everywhere doctrines dealing with dogmata of ethics emerged. However, they did not really sever the continuity of ideological traditions, but were more likely imposed upon them by the new teachers, as was the case with Socrates,

Jesus, Buddha. Though ethic doctrines did not always offer new religious dogmata, they were gradually shaping not only into these, but moved to a written fixation of canon to be seen as indispensable for all believers. This holds true for Zoroastrianism, Jainism, Brahmanism (the early stage of Hinduism); doctrines originating from Judaism, and primarily Christianity; Islam, which however underwent this process much later; Confucianism; Taoism; Manichaeism, etc.' (24. P. 373). It is almost impossible to trace the source of these changes to the developments in productive forces and production relations; there must have been a crisis in the social sphere and psychology of masses.

CHAPTER THREE

MEDIAEVAL AND INDUSTRIAL CIVILIZATION

Having completed our journey through the history of ancient civilizations and research of the “floors” and “apartments” in the pyramid of civilizations, their stages, succession and development mechanisms, let us focus on the next historical period, closer to us in the time scale.

3.1. Periodicisation of mediaeval and industrial civilizations.

Chronological framework for the second triad of civilizations (including a transitional period) covers a period from 476 A. D. (the year, when the last Rome Emperor was overthrown, which actually marked the end of the Western Roman Empire) till 1973 (the beginning of the world crisis, when transit to post-industrial civilization started unfolding). In other words, it took over 1.5 thousand years.

We identify four stages in the second historical super-cycle: transitional period (from 476 A. D. to the end of the 8th Century); Mediaeval civilization (the 9th – the early 14th Centuries); pre-industrial civilization – (from the mid- 14th till the 18th Centuries; and the industrial phase (mature

capitalism) – from the last third of the 18th (the beginning of industrial revolution) till the last quarter of the 20th Century.

The reason to our bringing together the second triad of civilizations is that we consider all of them to be the stages of industrial society: from the point where its prerequisites were getting ripe, through development, and to maturity.

But we still need to prove this underlying theoretical assumption, which is different from the commonly accepted chronology for this long period of history of mankind. That is what we are going to undertake now.

Controversial points in chronology of feudalism and capitalism. It is common to split feudalism (as a stage in the world historical development which followed the slave-owning formation and preceded capitalism) into three stages (to be measured by events of European history). These are: genesis of feudalism (formation) – from the 5th till the 10th Centuries; the developed feudalism (the 11th – the 15th Centuries); and the late feudalism (the 14th – the 18th Centuries, including first bourgeois revolutions and the epoch of initial capital accumulation). The starting point of capitalism as formation is usually referred to the late 18th Century, although the actual commence might be well traced a couple of centuries earlier this date. As for prerequisites for the process, they had been building up still in the Renaissance epoch.

Fernand Braudel sticks to the point, that “long ago before capitalism emerged many characteristics heralded it: towns and exchange grew, labor market appeared together with the united society, money spread widely, production output rose, as well as trade with far away lands, or, if you like, with an international market”. (9. V.3. P. 640-641.) Here, perhaps, capitalism attributes, treated too wide, as they are, are mistaken for market economy. That was the ground for Braudel to date capitalistic harbingers as far back as to the first A. D. Centuries.

French historian Jak de Goff proposed the idea of ‘long Middle Ages’, that started in the 2nd – 3rd Centuries (late Antiquity) and continued till the 18th Century, “gradually living themselves down in face of the French Revolution, industrial upheaval of the 19th Century, and great changes of the 20th Century. We live among the last material and intellectual remains of Middle Ages”. (19.

P. 5— 6.) Such an extensive interpretation of Middle Ages, covering almost the entire second super-cycle, does not carry much conviction. De Goff himself actually sees Mediaeval civilization in Europe as the period between the 10th and the 13th Centuries, and places its crisis into the 14th – 15th Centuries. (Ibid. P. 375).

The authors of “A History of Europe” offer the following chronology of the period. (Each volume covers a certain stage).

Middle Ages embrace a term of more than one thousand years (from the 4th up to the end of the 15th Centuries), made out so by the strength of the assumption that feudal mode of production was common for all European regions. However it may be doubted that five hundred years of a transitional period should be attached, for feudalism was just establishing itself in most European regions.

Late Middle Ages are asserted to last about one hundred and fifty years (from the late 15th till the middle of the 17th Centuries), with initial capital accumulation coming into existence; young bourgeoisie getting power; state centralisation consolidating; early bourgeois revolutions bursting out. The greatest rise of secular culture was achieved under the Renaissance; the Reformation influenced spiritual life tremendously; transition to capitalism was accelerated by the gold and silver flow from America; transition from simple cooperation to manufacture was unfolding.

Manufacturing ??period in development of capitalism took almost one hundred and fifty years (from the middle of the 17th Century till the last decade of the 18th Century). It was a period for bourgeois countries to confront against each other, and to interact, as well, and for bourgeois system to be rooted in Holland and England, while feudalism kept its position on other territories of the continent. The English Bourgeois Revolution opened an epoch when process by which feudalism was eventually replaced by capitalism achieved a European scope. In developed countries capitalistic manufacture superseded workshop craft and prepared a soil for machine production. Competition between capitalism and feudalism embraced not only the entire Europe, but vast areas of North America, Asia, and Africa.

In period between the Great French Revolution and Commune of Paris (about 80 years) capitalist economy gained ground in Europe, manufacturing

??capitalism was replaced by industrial one, proletariat stood out for its rights, and bourgeois nations emerged.

Next period, from Commune of Paris (1870) till the Russian Revolution of 1917 (almost half a century), is made out a time when free capitalism grew into imperialism, the overall crisis of capitalism started, social and economic contradictions sharpened, and bourgeois culture and science underwent decline.

A short period from the October Revolution in Russia till the end of the World War II is also identified (1917 –1945, which is less, than 30 years). It included the victory of socialism in the U.S.S.R., the deepest world crisis on the turn of the 20s and 30s which gave birth to fascism and entailed the World War II, the most blood shedding war in history, whose nidus was placed in Europe.

After the World War II achievements of scientific and technical revolution gave rise to an impetuous growth of productive forces and at the same time brought mankind into danger of nuclear catastrophe. A commonwealth of socialist countries was formed. Imperialist colonial system was broken down. Integration tendencies in Europe strengthened. Confrontation between the two World systems sharpened. At the end of the period some signs to smooth international tension down appeared.

A more persuading chronology, however, is offered by I. M. Diakonoff (22. P. 252). The author identifies three stages: Middle Ages (about one thousand years: the 3rd — 5th Centuries A. D. in Europe; since the 1st Century A. D. in China; since the 9th Century in Japan); the stable – absolutist Middle Ages, or “the absolutist pre-capitalism” (from the 16th till the 19th Centuries in Europe, approximately 300 years); the capitalist phase (about 100 years up to the 50s of the 20th Century). We could take up his chronology as a basis, keeping in mind some corrections to be done in names of the stages and their continuity.

We take advantage of the same cyclical genetical approach to transformation of world civilizations that we discussed in Chapter 1 to offer our own chronology of the second super-cycle history, dividing it into a transitional period, Mediaeval, pre-industrial, and industrial civilizations.

Transitional period: genesis of feudalism. The transit from

civilization of antiquity to Middle Ages civilization took quite a long time in Europe, i.e. from the 5th to the 8th Centuries.

Genesis of feudalism followed different ways. Here are several types (models) of its formation to be identified.

1. The Byzantine way, taken by the Eastern Rome Empire. The latter managed to keep safe all the main elements, inherited from the previous civilization: large cities, where craft and trade prevailed; slavery together with ownership of community land; the refined culture in which Greek elements dominated, and a powerful state with the developed Roman law. These elements the Empire gradually transformed, and supplemented them with elements characteristic of feudalism. What is more, it can be found out that slavery saw a period of certain consolidation there (the late 9th– the 10th Centuries). However, it could not prevent the rise of feudalism based on a mixture of different kinds of property: the state-owned, together with these of a suzerain, small peasants, and community. In the same time, a custom of feudal ancestral lands and peasant's dependency gradually were taking root. Guilds of free craftsmen, merchants, seamen, and ship owners were set up in towns. The network of towns with Constantinople in the head evolved.

The transition of Byzantium towards the feudal civilization was the least painful, for it succeeded in preserving its cultural treasures and towns. However, slave-owning continued to survive and, together with conservative elements prevailing in the society, impeded the progress; it was the 9th Century before the transit to feudalism was fully completed. Byzantium lost leadership, dwindled, and by the middle of the 15th Century left historical scene.

2. The Italian model of genesis of feudalism was painful and full of destruction, but shorter than that of Byzantium. Effete Rome became a bait for barbarian tribes that wave after wave were rolling over Italy, robbing, destroying towns, grasping lands and mixing with the local population, gradually absorbing some fragments of economic and cultural order which they took up, and transforming it in their primitive way.

However, the barbarians who settled over the Rome Empire in the 5th Century were not the wild ones that had just left their forests and Steppe: 'They had gone through a long evolution during the course of their frequently centennial roams... While nomadizing, they contacted different cultures and

civilizations, picking up their customs, art, and crafts. Most of these tribes were exposed to both direct and indirect influences from Asian cultures, these of the Iranian, Greek, and Roman worlds... They introduced to the new world a refined technology of metal processing, jewelry and leather crafts, and the delightful Steppe art with its stylized animal motives". (19. P. 18 —19.) Aside from bringing horror of destruction, did barbarians pour a fresh blood into the rotten remains of once powerful body of the Rome Empire.

The top of the conquerors was becoming large landowners, and part of warriors turned into small free landholders. Gradually, they were losing their independence and mixing with coloni. Town craftsmen and traders, having curtailed production for a time and having lost the former glitter and their customers, were finding new clients and slowly restoring their trade connections. By the 9th Century feudal relations mainly established themselves. But no powerful state with a strong center so far appeared.

Since 781 Italy came out from the Carl the Great Empire as a kingdom in its own right. In 843 it became independent. However, Southern Italy was kept under Byzantine rule. Later it was a part of the Norman kingdom of both Sicilies, and a cross-junction of different cultures.

3. The French way to feudalism was typical to many countries that experienced Roman rule, but managed to keep main elements of the tribal communal system (in spite the fact that they enjoyed some technical achievements of the Iron age and the heritage of antiquity). This way appeared to be the fastest. Clan leaders were turning into sovereigns, owners of ancestral lands known as feodum (which gave the name for the whole system). Free community members and warriors who were granted plots of land were turning into dependent peasants.

The strong Kingdom of Franks was gaining its power, with large feudal ancestral lands prevailing during the 8th – the 9th Centuries and cultivated either by land-dependent (coloni), or personal-dependent peasants (serfs). "Thus the groundwork was laid down, resting on which the Carolingian monarchy united most part of the Christian West during half a century under its domination and then restored the Western Empire. Thus in the four Centuries which separated the coronation of Carl the Great (800) from the death of Theodosius (395), a new world has emerged in West, thanks to

the merge of the Roman and barbarian worlds. The Western Mediaeval period has gained its face". (19. P. 217.)

4. The Scandinavian — Russian way was traced in a transition accomplished by nations which did not know slavery and large towns, and made their way to feudalism from primitive societies (in their developed and modified form applicable to the Iron Age technology). Clan heads and military leaders (princes, konungs, etc.) and their closest companions turned into landowners —sovereigns, while former free community members became dependent peasants (at first community property kept untouched, but a regular contribution, embryonic form of feudal rent, was levied). It permitted to accelerate the pace of progress and to complete genesis of feudalism simultaneously with most European nations, to build strong and aggressive states. Scandinavia, Russia, peoples of Eastern Baltic countries, some German and Scotland tribes followed that way.

5. The Moslem model of genesis of early feudal civilization has much to do with the rise of Islam (the 7th Century), of which several peoples of the Middle East and North Africa took advantage to flag their impulsive expansion. In the 7th Century Arabs conquered the Middle East, Iran, Egypt, Khwarezm; at the beginning of the 8th Century they grabbed Bukhara and started the conquest of Spain. One century later they took over Southern Italy, Sicily, Sardinia, Corsica. Despite permanent fighting between Moslems and Christians, the Arabian conquest helped to reach a balance between Western and Eastern cultures, to improve artificial irrigation, develop trade and crafts, to keep towns safe and facilitate their new growth, to build up new feudal land relations in a specific form.

6. The Eastern model of transition to early feudal society could be traced in China, India, Persia, and Middle Asia. These regions never saw slavery in its classical form, characteristic of civilizations of antiquity; feudal relations established themselves gradually and in different forms.

According to I. M. Diakonoff, transit to feudalism in China was completed in the 2nd Century A. D., under the Younger Han dynasty. As an evidence is brought forth the fact of introduction of "magnate" ownership of land; the wealthiest landlords ("strong homes") took peasants households under patronage, extracted their natural product (feudal land rent) and paid

taxes for peasants. Peasants were getting personally dependent, tied to land and subject to magnates' judicial authority. Spread of Confucianism, the dogmatic regulatory doctrine modified so as to justify the new order, is identified as another diagnostic feature. (22. P. 73 — 74.) After a long intestine feud, so called Three Kingdoms, which can probably be related to the formation of Mediaeval civilization and took the period of 3rd — 4th Centuries, came a period of flourishing of the local Chinese civilization. Population grew rapidly, cultivation of rice was spread over to North and by employing agricultural method of growing crops in beds provided urban and rural population with food. Trade and money exchange developed intensely. In the 7th Century transferable banker's checks were introduced. In the 9th Century book publishing was invented, which helped to plant literacy.

For India, transition from ancient societies towards Middle Ages is dated the 5th – 8th Centuries B. C.. Share of slavery labor was getting less; some of slaves were let free, but a certain form of dependence kept untouched. Most of former free community members were converted into feudal-dependent peasants. Part of lands, granted to dignitaries 'to provide for themselves' as a reward for their service, was recognized to be their hereditary ownership. Monasteries played an important role in the society's entering upon feudalism for the possession of wide range of lands together with bond peasants. Preservation of cast and estate system slightly modified in Mediaeval period was a feature of the Indian way to feudalism. (8. P. 461-471.)

In Iran signs of transit to feudalism could be observed under Sasanian Dynasty (the 3rd – the 7th Centuries), when "magnate" ownership of land, division of the society into stratum, and peasants' dependency came into being. (22.P.81-82.)

In the period when the second triad of civilizations was under formation, one of the regularities in historical process appeared in its brightest. We speak of a drastic increase in mobility of population, 'great migrations' on the verges of epochs. Growth of population and depletion of natural resources on territories, which had been settled and arranged earlier, provoked the spirit of 'great wandering', pushed enormous masses of people to undertake risky travels of thousand miles long in search of better lands. This mobility gained a

tremendous range during the transition from antiquity to Middle Ages, in the epoch of great migration of people. Wave succeeded by wave, aggressive tribes from East and North crushed upon the weakened Rome Empire. These peoples were on the stage of formation of early class society, but well possessed of the military technology of the Iron Age. Goths and related to them Vandals were later joined by Varangians and Danes from the North; tribes of the Mongolian Guns, and then Avars, Magyars, and Bulgarians from the East.

As they advanced, these resettlers devastated towns and villages, murdered citizens, destroyed cultural treasures, and imposed enormous contributions on those left alive. Eventually, they settled down on the conquered lands and founded kingdoms. It was before long that they have been assimilated by the locals, adopting economy and culture to their primitive ways. Against the background of antiquity, this process seems to have been a regress. “Regress was first of all in quantity: lost human lives, ruined architectural monuments and household buildings, population’s falling off, disappearance of pieces of art, destruction of roads, workshops, warehouses, irrigational systems; elimination of sown agricultural crops... But the regress was in quality, too, viz. in technology, having left the West disarmed for a long time... the morals were getting low...” (19. P. 35 — 36.) However, considering human history as a whole, it was a progress – a step back taken in order to take three steps forward later —to Mediaeval, industrial and postindustrial civilizations.

At the end of Middle Ages a wave of resettlement came again, but in a minor scope. The torrent of the Tatar invasion flowed from the East and flooded Eastern and Central Europe, Middle Asia, and Caucuses. Converse was a flow of crusaders and pilgrims from Western Europe to the Middle East, the Byzantine Empire, Slavic nations. But this wave, too, dropped soon. It can be stated that characteristic of period of height for each nation is a greater stability for population, which, however, does not exclude external expansion and warfares to conquer new territories. Such is the regularity in cyclical dynamics of historical process which perseveres till nowadays.

Thus, we infer that characteristic of the transition to the Mediaeval-industrial triad of civilizations are different forms of transition, wide range and multiplicity of directions (although with a different speed), and equalization of

developmental levels of local civilizations. It was almost simultaneously that these civilizations came up to the a next historical stage — Mediaeval civilization which spread over a vast area of the Earth.

Middle Ages. Starting from the 9th Century center of the world progress replaced to Europe again. (Although it would be right to speak of a multi-pole world, with each pole keeping to its own rhythm). By the middle of the 13th Century the Mediaeval civilization in Europe reached a stage of height. Towns recovered their leading role. Guild order and merchantry prevailed there, with prerequisites of world market thus coming into existence. Feudal hierarchy ruled in rural communities, which remained predominantly natural, with some elements of communal order. Personal dependency of peasants became even graver. Religious dictate penetrated not only into political and spiritual spheres, but largely into economic life; art took on religious shapes; universities were founded under the church patronage. From the middle of the 14th Century a deep crisis of an early Mediaeval civilization started. That was a transit to the next civilization.

What characteristic features of the Mediaeval civilization became a basis of its contribution into historical, material, economic and spiritual heritage of mankind?

1. Middle Ages were a period when the world religions: Christianity, Islam, and Buddhism were in unbound domination. For the first time ideology in its religious form became a leading factor in society, although its influence upon historical process was contradictory. From the one hand, religion helped integration and stabilisation (under the condition of feudal split and separation). It was, as F. Braudel calls it, a unified cover for world-economies to establish themselves over all continents and for market relations to gather momentum. Additionally, religion supported development of architectural schools (Gothic and Mauritanian styles), art, and foundation of universities.

However, a binding influence exerted by the religious dictate upon free thought, a fundamentalist intolerance, a determination to suppress and eliminate “the unfaithful”, multiple wars initiated by church or ignited by religious motives are quite conspicuous. The eight Crusades (from 1096 – 1099 to 1270) exemplified this tendency perfectly. At times they shaped into specimen of fanatical cruelty (like Children’s Crusade in 1212, when dozens

of thousands of children were lost in the storm in Mediterranean Sea or sold to Egypt into slavery). Crusades brought demolition and robbery to dozens of towns and resulted into loss of scores of thousands on both sides. But at the same time Crusades stimulated the Mediterranean trade and navigation and aided adoption of many eastern technical and cultural achievements.

2. The second specific trait of Mediaeval civilization is a greater personal freedom and a greater personal economic interest felt by peasants and craftsmen, to compare with the rigid non-economic enforcement practised under the slavery formation. A multi-chain, hierarchical property for land and peasants' bonds to land in one or another form made up a prevailing background for economic relations in country. The results were the loosely restricted rights of suzerain, multiple contributions to be paid to suzerains and church, and labor conscription that provoked peasant uprisings. Similar to these relations was a harsh reglamentation in towns (crafts workshops and merchant guilds).

Many towns became hotbeds to freethinking and "heresies", rise of trade and architecture, restoration of science and beginning of a new education revolution ("university revolution"). There are enough reasons for this process to be identified as the third in history 'urbansitic revolution'. 'Mediaeval town and workshop craft, — emphasizes M. I. Tugan-Baranovsky, — were a soil for the growth of Western civilization, for all that exceptionally peculiar order which was to enhance mankind to an unprecedented cultural height. Town created a new social estate to be destined to lead the way of social development in the West: bourgeoisie". (14. V.I. P. 321.) The culmination in growth of new towns falls onto the second part of the 13th Century. In Germany only there were more than 3 thousand of them. (9. V.3. P.89.)

The major success in Middle Ages was accomplished by town-states of Northern Italy – Venice, Genoa and Florence. There, republican rule was firmly established. Venice and Genoa battled with each other for supremacy in seas and set up some colonies on the Mediterranean and Black Sea shores. The flow of wealth gave Venice a chance to build unique palaces in the lagoon which remain the world cultural treasures till nowadays. Florence, having no access to sea in its availability, developed specialisation in wool production and set up first wool manufactures. The town's splendid architectural and fine

arts glorified themselves over civilised world. Florence turned into one of the centers of the Italian Renaissance. It was in Florence that industrial bourgeoisie, together with wage workers, appeared for the first time on the historical scene. During the following two civilizations these estates were to play major principal parts on these scene. (2.P.126-129.)

Trade expansion, transit to market economy, a next in turn demographic rise resulted not only from development of crafts and achievements of workshop organisation, but also due to a progress in agricultural technology, horse plough betterment, and three-field crop rotation.

3. As regards political sphere, this period is full of strife led by feudal monarchies (kingdoms), many of which were called so somewhat nominally and supported by power of church hierarchy, against the self-will of “multi-level” vassals, against feudal split and separation, which provoked innumerable gory clatters and wars.

Trade and political empires and unions, supported by one or another religion, would take place of world empires of antiquity, based on military conquest. Ideological basis of the Byzantine Empire was the Orthodox branch of Christianity. There were many attempts so as to take advantage of its Western, Catholic counterpart for the sake of restoration of the Saint Rome Empire. But it was the East where the ever largest Mediaeval empires emerged. Based on the Moslems gains, the Arabic Caliphate stood for several centuries: under the Umayyads dynasty (with the capital in Damascus) up to the middle of the 8th Century, under the Abbasids (with the capital in Baghdad) up to the 13th Century. (22. P.102.)

The Mongolian Empire reached an enormous size. It was established after Genghis Khan's invasion to China, Middle Asia, Caucasus, and Russia, and then was extended under Batu Khan (1227-1255) to further over Russia up to Poland and Hungary. The Golden Horde, one the Empire heiresses, stretched itself from the Irtys river to Crimea and lower reaches of the Dnieper and Danube; Russian principalities paid it a contribution up to 1476. Tamerlane, one of the Gengisids (1336-1405), made devastating raids to Middle Asia, proclaiming Samarkand to be his capital, Iran, the Caucasus. He crashed the Golden Horde, captured Delhi, and Asia Minor. (Ibid. P.110-115.)

In India the Great Mughals Empire had been existing for more than

three centuries (1526-1857), Akbar (1556-1605) who put through a number of radical economic and political reforms being one of its outstanding representatives.

Since the 14th Century the Osman Empire began evolving. After having embraced Asia Minor, it captured Sophia in 1386, defeated Serbia on Cosovo field in 1389, and in 1453 under the lead of Sultan Mehmed II conquered Constantinople, the capital of the Byzantine Empire, to transform it later into Istanbul. At the end of the 16th Century Selim I the Terrible defeated the Mamluks and conquered Syria and Egypt. His son Suleyman I the Magnificent subjugated Belgrade in 1521, Hungary in 1526, then Crimea, Moldavia, and Walachia. At the end of 16th Century the Osmanids took over Greece and Shirvan (today a part of Iranian Azerbaijan). (22. P.119-122.) The Osman Empire fostered a system of military feudal rule resting upon a strong army of yanizary who were raised of captured Christian boys and the powerful fleet. Islam was a domineering religion. The Osman Empire stood till the mid-19th Century and many times acted as a foe of the Russian Empire.

Trade and political unions were forming in Europe where, as Fernand Braudel emphasizes, the two poles existed at that period. (9. P.92.) One pole arose in central and northern part of the continental Europe, under the leadership of Brugge (later succeeded by Lubeck). This pole is also associated with the rise of Hansa towns whose trade routes coated the entire world. Another pole was made up of Italian towns, with power concentrated in Venice and Genoa republics which battled permanently against each other for the supremacy in the region. Venice, having no agriculture, mineral resources, or even water supplies, as it did, managed to spread its influence over entire Western Europe, with some exceptions, the Mediterranean and the Black Sea coast but due to the powerful fleet, developed trade, diversified crafts, and rich culture. Venice evolved into a model of formation of market infrastructure and relatively democratic political order, tolerant to different religions. It turned into concentrated symbol of the newborn capitalism.

4. Technologies of the Mediaeval civilization saw none of such impressive leaps as were under early slavery formation, or under industrial civilization. Agricultural technology, although supposing an application of three-field system and better plough, developed in extremely slow pace.

'Revolution of mills' (working by wind and water), became the basic energy resource for craft. Fernand Braudel even speaks of the first industrial revolution, which manifested in the spread of felt manufacture mills in England (150 units in the 12th – 13th Centuries), sawmills, paper mills, those to mill grain, etc. (Ibid. P.561.) Use of paper and gun powder, development of clock production, use of lenses, spectacles, color glass, marine compass, and ship steering wheel could all be well seen as largest innovations of that time.

5. It may be worth distracting attention aside from endless destructive wars and religious chase to see what a significant improvement in living standards of population, especially in towns, was achieved. Progress in agricultural, craft, construction, and transport technologies, as well as energy revolution, were here of major benefit. Population grew fast. For instance, in Europe it grew from 27 million people in the year 700 up to 73 million in 1300, i. e. by 2.7 times, while in the previous 500 years it dropped 2.5 times. (19. P.230.) It pushed up construction of many palaces and churches of a new architecture, rise of many large and middle-size towns both in the West and East.

Pre-industrial (early capitalist) civilization. Started from the middle of the 14th Century, some signs of an oncoming crisis came into view, indicating the transit to a next (the pre-industrial) stage. 'That tremendous spurt of Europe collapsed with the unprecedented fall of the 14th — 15th Centuries (1350 – 1450), in the time of the Black Death which was perhaps both the result and the cause of it. The economic decline which was underway since the bread crisis and starvation of 1315 – 1317 preceded the epidemic and was favorable for its sinister work'. (Ibid. P.564.) Within the centennial interval 1300 — 1400 population in Europe fell away from 73 million to 43 million of people, i.e. by 42 percent. Cultivation and ploughing of new lands was stopped, some of earlier arable lands were left abandoned, urban population declined drastically. Extremely bad harvests of 1313 – 1317 gave rise to increase in prices, caused famine, and eventually burst into a wave of uprisings and upheavals in towns. (Ibid. 103 – 105, 230.)

However, from the middle of the 15th Century a new and a long period of rise began developing in Europe in a two-pole way. One pole existed in Italy of the Renaissance (with a center in Genoa), another was situated in the

North of continental Europe (with a center in Antwerp) and later in England (London). The peak (and the breaking point) of this centennial cycle, according to Braudel, falls onto 1650. It came to an end in 1733 – 1743. (9. V.3. P.73.)

What name could be given to the fifth civilization cycle? Historical literature usually refers to it as ‘the beginning of a New Time’. This was a great period, lasting from the 14th to the 19th Centuries. But, to begin with, it is far from being really ‘a new time’, for it is half a thousand years back from now. Secondly, this name does not bear any specific attribute describing that specific historical stage. Thirdly, the time framework of the period is too broad, as it includes both the industrial revolution and the Great French Revolution, while each of them has been a major “watershed” in social dynamics.

In Marxist literature, the epoch of the 14th — 18th Centuries is treated as a developed feudalism, or absolutism. But this approach leaves aside some important traits and events of the epoch, such as the process of initial capital accumulation, the way made by capitalism to domination in economies of Western Europe and North America, and the two first bourgeois revolutions in the Netherlands and England.

I. M. Diakonoff suggested to call this period (the sixth historical phase in his chronology) the stable-absolutist feudalism, considering the following features to be its main diagnostic traits: introduction of an efficient fire arm (manifesting the end of troops of armored landlords); establishing of the estates of bourgeoisie and wage workers, which has to do with perfection of means of productive, and specifically with weaponry technology; formation of national mentality, and emergence of stable absolutist states. (22. P. 152 – 157.) However, this definition of the epoch and its signs fails to convey the idea of the main trait, viz. building of economic, social, political, technological, and ideological prerequisites of industrial society. Role of fire arm in historical process should not be exaggerated.

There seem to be more reasons to call this civilization *pre-industrial*, or *early-capitalist*. It conveys a main tendency of social dynamics in the countries which were in the van of historical process and a transitional character of the stage which formed a basis for the peak of the second

historical super-cycle, the industrial civilization.

Great geographical discoveries of the late 15th Century, together with the growing danger from the Osman Empire (after the fall of Constantinople), necessitated that trade routes moved to the Atlantic, Northern, and Baltic Seas. Thanks to their overseas gains and sea power Portugal and later Spain obtained dominant positions and the superiority. Antwerp became the center of the world trade and economic power in the first third of the 14th Century. Genoa, and then Amsterdam, succeeded it in the first quarter of the 17th Century, which London did at the end of the period (housing, as it did, about 550 thousand of people in the year 1700, it counted the largest city in Europe).

At the same time it was a period of struggle waged by trade and bank bourgeoisie for political power. The brightest manifestations of that struggle were the revolutions in Netherlands and England.

The Renaissance, the Great Scientific revolution, the Reformation in Germany counted among main symbols of the epoch. The beginning of industrial revolution was prepared by dominant role of manufactories, widening use of coal, development of mining and metallurgy industries. Fernand Braudel emphasizes that ‘the whole process took place in the general atmosphere of scientific and technological discoveries: that was a time when hundreds of Italians, sharing the passion with Leonardo da Vinci, filled their notebooks with sketches of wonderful machines’. (Ibid. P. 567.) Similar processes were going on in other European countries of equal developmental level.

The climax in the fifth civilization cycle, its stage of maturity, falls upon the 16th Century. It is recognized by historians: ‘The 16th Century, a period of the demographic and economic rise, manifested itself in growth of population, increase in a share of precious metals in money market (due to the gold and silver flow from Hispanic colonies in America and the advanced technology of silver extraction in Germany), international trade expansion, rise of efficiency in agriculture, enlargement of industry, and improvement in standards of living for most part of population ’. (25. V.3. P.11.)

Western European countries – Italy, Great Britain, the Netherlands, France, and Germany — appeared to be in the epicenter of pre-industrial society. It was the place where new ideals and political movements were in

progress, bourgeois economic relations established and absolutist states set up. They brought intestine feud to an end, and they promoted better political stability and security of the property which resulted from initial capital accumulation.

According to I. M. Diakonoff, it was approximately at the same time that the strong absolutist state was formed in China. It rested on accelerated growth of towns, regional labor division (which led to emergence of manufactures), developed trade and money circulation (as early as since the 12th Century paper money were introduced). The top of the period was reached under the Ming dynasty (1368 – 1644). However, in China estate of radical bourgeoisie had not been formed; the Manchurian gains (1644 –1674), and then raids of Western colonizers, threw the country back for a long time. Turkey, Iran, Mongolia, India, south-eastern Asia did not manage to step beyond verges of Middle Ages. If with some delay, Russia and Japan started their movement to the new historical epoch. (22. P. 197-204.)

What did this epoch bring to enrich the treasury of historical heritage?

1. The most significant milestone was *the upsurge of spiritual life* that gained a brilliant embodiment in the Italian Renaissance (in the 14th –16th Centuries). Its historical importance is on par with that of the first intellectual revolution of the 4th – 6th Centuries B. C. in ancient Greece. In fact, it is with the restoration of the ancient Greek heritage that we speak of the Renaissance, the epoch of humanism, lasting approximately till the mid-19th Century.

Chronologically, the Italian Renaissance is divided into several phases. These are: the proto-Renaissance (the second half of the 13th– 14th Centuries), the early Renaissance (from the 14th Century in literature, from the 15th Century in fine arts and architecture), the high Renaissance (the end of the 15th – the first quarter of the 16th Centuries), and the late one (the 16th Century). In other countries of Western Europe (France, Netherlands, Germany, England, and Spain) the Renaissance started unfolding half a century later.

Humanism puts a human being first, a free and creative personality liberated from religious dogmata and open to rejoice of existence, sense, and understanding. This approach manifestly expressed itself in the Great Scientific Revolution that laid ground for modern science in various branches of understanding. Great discoveries in astronomy, some theoretical and

engineering sciences, philosophy and medicine proved to be the highest achievements of this Revolution. J. Bernal estimates this breakthrough to be an intellectual revolution resultant in foundation of scientific communities (such as the Platonic Academy in Florence, the Royal Society of London for the Promotion of Natural Knowledge in England, and the Royal Academy of Sciences in France).

Achievements were no less impressive in literature (Dante, Petrarch, Bocaccio, Erasmus, Cervantes), theater (the Italian comedy del arte, the dramas of Lope de Vega and Shakespeare), fine arts, sculpture and architecture (Leonardo da Vinci and Raphael, Giorgione and Tician, Michelangelo and Durer).

2. Contrasted with antiquity, when scientific thought mainly developed apart from practice, the scientific overturn of the Renaissance progressed along with a comprehensive *technical revolution*; it fed itself from practical achievements, and satisfied practical demands in turn. It was manufacture that became a ground for cheaper prices for variety of industrial products, and it was division of labor, introduced in manufacture, that give an immense rise to the labor efficiency comparable to that in craft workshops.

More than of anything else, production of fire arm (cannons, arguebuses, muskets) gained ground and pushed forward adjacent industries. Progress in fleet opened new opportunities for seafaring. With work of dependent peasants and domination of serf labor, agriculture was the only sector which did not show much progress.

3. *Economic relations* of pre-industrial civilization are characterized by pushing forward borders of market and consolidation of market itself which grew to cover all inhabited continents, and by gradual expansion of capitalism over trade, industry, maritime transport, and partially agriculture. First in Italy, and then in Amsterdam, Paris, and London, a market infrastructure was established, a perfect mechanism for trade, circulation of promissory notes, and bank and stock exchange to keep functioning. Economic power was gradually changing hands, escaping from landlords, aristocracy, and church to belong to trade, financial, and industrial capital. Capitalist relations were penetrating agriculture, involving it into market turnover. Personal dependency was circumscribed to narrower limits; wage labor became spread

not in town only, but touched village, as well.

Now, it should be reminded that all tough forms of initial capital accumulation were subject to K. Marx's quite extensive, and very scrupulous and imaginative interpretation in Chapter 24 of the first volume of his 'Capital'; there is no need to reproduce it here. Let us suffice with stating that it was a period of triumphant march of bourgeois economy all over the world. It was a period when everywhere multiple local and regional markets mingled into united and national ones, being tied closely to international trade.

Western Europe was ahead in economic progress at that time, being the very place in which historic turn to capitalism and its first stage, "manufacture capitalism", occurred: 'We treat here one of breaking points in European history, when its stream had made a sharp turn from an exhausted feudal order of the old regime to a new capitalist formation. Originally, the new epoch which was particularly characterised by the development of the first shape of bourgeois production relations (i.e. 'manufacture capitalism') made itself felt in the countries of advanced economic order, in Holland and England. Together with that, there were more or less bright evidences testifying to the substantiality of new relations in economic order of many other countries on the continent". (25.V.4.P.5, 6.) At the same time, to the East of the Elba serfdom took firm roots, to be evolving to the extremely harsh shapes since the second half of the 17th Century when emerged some initial signs of economic crisis to hit Europe later.

4. As regards social and political spheres, the pre-industrial civilization saw many diversified tendencies.

Its largest achievement was the formation of stable absolutist sovereign states that helped to limit outrages of self-willed feudal lords formerly oriented on the law of might; it also permitted to build better conditions for trade and production inside the countries.

Advancement of humanism could not fail to lead to a sharper struggle for political equality, abolishment of the feudal hierarchy along with the unrestricted power of sovereigns and self-will outrages. Merchantry republics were established in towns. The bourgeois revolutions in Netherlands and England resulted into greater political influence of the "third estate". However, at a state level, the supreme authority still belonged to a monarch, aristocracy,

and the top of the church hierarchy; England seems to have been the only country where a breach had been broken in this unity due to the growing influence of Parliament; the traditional republican order was kept unchanged in Venice.

At the same time it was a period when social conflicts, folk uprising, and gory civil and religious wars surged up. Monarchs and sovereigns continued to wage endless wars (Hundred Year's War between England and France in 1397 – 1453, European-wide Thirty Year's War of 1618 –1648) and needed in a growing money flow, which they could have obtained, if made heavier a tax press over emerging bourgeoisie and peasants. It led to frequent revolts; the most noteworthy among them were the Jacquerie in France and the Peasants' war in Germany.

5. Maritime travel and great geographical discoveries led to formation of the world colonial empires. After the discovery and conquest of America, Spain became the first of them. Portugal and Britain also made their claims to grow into colonial empires. There were endless wars to conquer and divide the colonies again and again. Establishment of the bourgeois order was based on violence and annihilation of the whole nations and their cultures.

Different destinies have fallen to the lots of Latin and North America. Spanish and Portuguese overseas tributaries, which were ancient societies in their last stage, or in the next to last phase, made a violent leap by Middle Ages. Feudal relations prevailed there, with a certain touch of slavery. Later, mixed national states were going through formation and substantiated in the 19th Century due to liberation revolutions and wars under Simon Bolivar's guidance. In North America, the British colonies which were taking shape in the early 17th Century fostered bourgeois relations combined whimsically with feudal ones, while in southern cotton-growing states a set-back to slavery was traced. An energetic nation built up in the U.S.A. out of agile people born in Europe chose to be in the van of political relations characteristic of industrial society (the War of Independence of 1775, the Declaration of Independence, adopted in 1789, the most progressive for the time Constitution, the Bill of Rights of 1791). It was the U.S.A. that fostered the order of liberal democracy which later became model for Europe and the whole world for two hundred years.

Nevertheless, on the whole this cruel epoch made up a tremendous move forward in the world progress. 'It is just in this epoch, often referred to as the time of the 'great breakthrough', that fundamentals of modern world have been laid in the different spheres of human life. And it is just from this epoch that many threads lead to our world; it was then that problems emerged that have been solved or await to be solved in the 20th Century. Pre-history of capital, the onset of the capitalist era which determined historical development in Europe for centuries ahead and tied up with its history, into a tight and often tragic tangle, life of other peoples and continents, entails the greatest shifts and qualitatively new transformations of our epoch. The Renaissance and the Reformation brought into existence roots of contemporary knowledge." (25. V.3. P.6.)

The height and the sunset of the industrial civilization. If we start counting the age of each civilization from a transitional period, then it should be stated that the crisis and the sunset of pre-industrial civilization and the transit to a next stage cover altogether the late 17th Century and almost the entire 18th Century. At that time the growth rates of population surged up sharply: in England, number of inhabitants increased from 5. 8 million people in 1700 up to 8. 2 million people in 1790 (9. V. 3. P. 582 — 583.) However, possibilities so as to provide for vital wants of increasing masses of people and at the same time to supply the luxury of royal courts and nobility on a narrow basis of manufacture production and colonial trade were getting less all the time.

Enormous gains from the robbery trade with India, Indonesian islands, Africa, and America, and from a flow of stolen precious metals and spices were close to an end. Europe sustained catastrophically bad harvests. A transformation in the technological mode of production became inevitable. And it came, shaping into a form of industrial revolution in the last third of the 18th – the early 19th Centuries.

Let us discuss a chronological framework and phases of industrial civilization. First of all, one should distinguish historical boundaries of capitalism and industrial society. Establishment of capitalism in epicenters of the world progress refers to the pre-industrial civilization. As for industrial society, it comprises phases of flowering, stability, and sunset of capitalism,

i.e. the time when it created an adequate material basis, and the machinery and factory system as its organizational embodiment. The core of industrialism lies in a machine character of production and labor organization, which has left its mark on economic, social, and political relations. For machine is a great equalizer, leveler; hence the tendency to equality in level of education for employees, in that of development of various regions, and in political life.

The phase of formation of the industrial society proper covered the last third of the 18th — the early 19th Centuries; its epicenter was located in England with further replacement to continental Europe and North America. The phase of intense expansion lasted till the middle of the 19th Century. The next phase can be well spoken of as a period of stability in development of industrial society. It seems that industrial society had been living through the phases of its rise and maturity before the World War I began. Then came the phase of its sunset, which since the last quarter of the 20th Century has been transforming into a transitional period to postindustrial civilization. Nevertheless, we are aware of other approaches. V. I. Lenin thought the sunset of capitalism to be its entering upon the stage of imperialism in the late 19th Century. He envisaged that the end of that stage, together with entire capitalist system, would happen by the 20s of the 20th Century. History, however, testifies that vitality of capitalism was underestimated.

I. M. Diakonoff grants to the capitalist stage of historical development a short time — little more, than a century, that is, from bourgeoisie's gaining political domination in leading countries of Western Europe in the middle of the 19th Century (after the parliamentary reform in England in 1832 and revolutions in France and Germany in 1848) till the first hydrogen bombs testing in the U.S.A. in 1952 and in the U.S.S.R. in 1953. (22. P. 207, 348.) We however see both initial and final phases of the life cycle of industrial civilization go far beyond this frame. The transition to industrial society started unfolding in the last third of the 18th Century ever since the time of industrial upheaval and the Great French Revolution. The last brief upswing of industrial-capitalist society was traced in the 50s and 60s of the 20th Century; the year 1973 may be considered as the fatal data of the beginning of its fall.

Soviet historiography took it for granted that 'the new era in history of mankind' should be counted from the October Revolution in Russia in 1917.

But events of the last decade showed that it had been just one of these turnovers abounding in the phase of sunset of industrial society. The October Revolution marked the beginning of a long quest for a way out of the crisis, driving this search to path of socialist ideals. However, mankind did not follow this way, but assimilated something useful from the experience which has been accumulated by a very high price. History preferred the third way out of a great confrontation between capitalism and socialism: the formation of post-industrial society. That is why we can consider the onset of transition from industrial to postindustrial civilization in the last quarter of the 20th Century as the largest “watershed” of modern history.

Taking into account regularities of historical process, we can emphasize the following traits characteristic of industrial civilization:

1. Greater society's homogeneity in national or global scope built conditions for *cyclical dynamics* of society to reveal itself more exactly. In developed countries (and the entire global economy as its boundaries were getting wider) an economic crisis shook society with a regularly one time in decade. There are growing evidences to contours of semi-centennial ('Kondratieff') cycles, to a rhythm in upgrade of machine generations, technological orders, and wavy-spiraled dynamics in other fields of society's life. The rhythm of crisis was getting more accurate in the 19th – the beginning of the 20th Centuries. The First and the Second World Wars deformed the cycles' pace, while the postwar rise brought some hope that crises could be avoided within regulated market economy. However, the deep global crisis of 1973 — 1974 which coincided with a phase in the next in turn Kondratieff's cycle, blew out these illusions. Since then global economic crisis of middle duration recurred with an enviable regularity (1980 — 1981, 1991 — 1993). Fernand Braudel stressed a continued and deep character of the evolving crisis: ‘...the turn of 1973 — 1974 opened a durable decline... But more menacing is the modern crisis, which does not leave us alone. Rather than a tornado, it is more of a flood of a slow and appalling water flow, or a sky, inexorably heavy with lead clouds. All grounds of economic life, all levels of experience, wether recent or past are put under the question... The last word escapes us, and altogether we are unable to grasp the exact interpretation of these long-term cycles which seem to follow some definite, though still

unknown to us regularities or patterns in way of tendency...’ (Ibid. P. 77.) Life proved such a diagnosis to be true.

2. The growing mechanization, concentration of production, and spread of *machinery systems* bound tightly in one chain of production not only within a single plant, but a country, or a number of countries (international monopolies), and in some time, on a global magnitude (trans-national corporations), were all the factors that have turned society into a set of large, middle, and small-sized technical systems which have lost their former independence and which keep to a unified rhythm as they work, getting through phases of rise and fall, crisis and innovation synchronisedly.

Industrial society gives priority to technology. Technological progress underlying economic growth and production competitiveness rests upon achievements in science, particularly in those of its fields which might contain an opening for innovation success.

3. Human being of the industrial system is a creator of machines; he builds and operates them. But machine production designed to satisfy his needs, makes him more and more obedient and imposes its rhythm upon his life; succession of generations in technology endangers him with unemployment. In such a way, the demiurge of the machine world turns into its slave.

The triumph of the machine world terminated the epoch of humanism. Traces of this fact are to be readily found in culture. A mass culture, mechanised, standardised, completely lacking an ability to distinguish national differences, completely untied off the heritage of humanism, arose and tended to become essentially an industrialized anti-culture. This tendency was especially manifest in the 20th Century, in the sunset phase of the industrial civilization.

Crisis of spiritual sphere in the transitional epoch extended over half a century, taking ugly forms at the end of the industrial and millennial cycles.

4. *Economics* of the industrial epoch saw many contradictory tendencies. The mighty and lasting rise of productive forces; the improvement of living standards for broad masses of people in developed countries are its achievements beyond any dispute. Due to the wide-scope technological application of science and the grown power of industry, efficiency of labor

increased by dozens of times. Most of families find it ordinary today having comfortable homes supplied with TV-sets, household conveniences, computers, video-systems, or changing cars frequently, or taking travel tours.

But much as impressive this progress is, it was obtained by a huge cost. That a deformed structure of national and global reproduction lacks perspective is getting more and more clear. The well-being and prosperity of the few developed countries draws on ruthless use of labor and natural resources of the developing ones.

The epoch of free competition lives only in our memories. Having come through joint-stocking, economics has developed up to dictate of monopolies which planted their roots well in a mighty state bureaucracy. In the second half of the 20th Century one could trace a swift rise of transnational corporations that have become powerful integrators in the leading sectors of the world economy. From its facade, capital seemed to be getting more democratic, as wider strata of population, buying shares and bonds, were called proprietors. But this deceiving democratic screen hides a narrow circle of the economic (and perhaps political) elite behind.

5. No less contradictory tendencies were typical for political, state, and legal spheres of the industrial epoch. The concentration of economic might could not fail to lead to accumulation of political power, to dictatorship shadowed by a screen of democracy. The tendency became general, shaping into marginal manifestations as totalitarian regimes were established, which they sometimes did, making use of deep crisis and tumult to come to power through democratic proceedings (as was in Germany in 1933). The powerful industrial mechanisms of ideological influence and “brain wash” created a base for such regimes, uniform political mentality, and formation, by using these factors, mass political parties.

While it was the monopoly of a certain class, estate, caste, or a dominant religion, that struggle for political power had revealed itself in the years before, the industrial society offered an opportunity to form the ruling elite through winning elections by political party. One-, two- and multi- party political systems came into existence. Having come to power, parties gained the key positions of the state bureaucracy. This process has taken its ugliest form in the totalitarian countries, when a dominant party turned into rod of

political life, and the political and state elite merged.

The industrial society established the legal order, which presumed equality of all citizens and social strata before the law and priority of the law over regulation of legal relations.

There is a number of phases, which are quite perceptible in the progress of all institutions of political life during the course of the industrial civilization: the period when bourgeois democracy was established and spread, resulting from several bourgeois-democratic revolutions (in the Netherlands, England, North America, France, etc.); the period of the triumph of democracy in the second half of the 19th Century in developed countries (with some modifications in Great Britain, the U.S.A., France, Germany, and other countries); the period of sunset, with these regimes changing in their antipode in totalitarian states since the 20s of the 20th Century and almost till the very end of this century.

Rhythms of civilizations in Russia. There is a comprehensive tendency to be traced in the three large cycles in the evolution of the feudal-capitalist world civilizations. The general stream of the world progress spread out wider, and rhythms of the progress came to be more synchronised. Every local civilization, as it went through the stages of historical way which were similar to, and bound with, these of its neighbors, however enjoyed its own unique destiny and its own rhythm, which now was approaching to, then changing to a reverse motion from, the rhythm of the countries in van. A local civilization may have appeared at some moment in the epicenter of radical changes to recede to the background, to the periphery of main stream as soon as it proved to perform its historical mission and to make way for younger and more energetic civilizations carrying the mighty charge of matured transformations and less burdened with the heavy heritage of accumulated traditions and established economic, social, and political institutions.

Let us consider peculiarities of ‘hand-writing’ of local civilizations and mechanisms bonding them with the dynamics of the three last world civilizations, using in the way of illustration historical destinies of Russia, the country, in the past and present of which general and local tendencies of the world progress are interlaced in a bizarre way. Occupying the largest territory in Eurasian continent, Russia whimsically expresses tendencies in inter-action

of dynamics of the Western and Eastern local civilizations, reflected in the country's unrepeatably historical rhythm.

During a transitional period (the 6th – 8th Centuries for eastern Slavs) the unions of tribes were shaping and dissolving, possessed of some traits of a state, but clan relations prevailed: in the 6th – the early 7th Century there was the union of Ants, Slav land-cultivating clans (located in lands between the Dnieper and Dniester rivers) and that of the tribe of Dulebs, eastern Slavs (in the upper reaches of the Western Bug river and tributaries of the Pripet river). In the 6th – 9th Centuries tribe unions abounded (the Polyans, Drevlyans, Severyans, Ilmen Slavs, Radimichs, Krivichs, Vyatichs, Tiverts). The Polyans and Ilmen Slavs played the leading role in building of Russian land, forming an alliance of multiple tribe unions. One of the most brilliant periods in Russian history is the formation and flowering of Mediaeval civilization in the 10th – 12th Centuries (Rus of Kiev and Novgorod).

The economy of initial phase of this civilization mainly relied upon cultivation of land and cattle-raise in forest-steppe and river vales, and hunting and wild-hive bee keeping in woodlands. On the shores of rivers, the main traffic routes of the time, appeared the towns of Novgorod, Kiev, Belosero, Ladoga, Polotsk, and Smolensk, which fostered various crafts (items of metal, wood, cloth and etc.) and construction (building of homes, towns fortification, etc.) Applied art flourished, including items of jewelry and decoration. The religion was pagan. The political order bore some democratic traits. There was Veche (a kind of people's gathering, where the most important questions were risen and discussed).

The first wave of Mediaeval civilization reached its peak in the 11th Century, under Yaroslav the Wise (1019 – 1054). The Kiev Rus was one of the largest European states in his reign, spreading from the Dniester and Vistula rivers to the Don and Volga rivers, from the Northern Dvina river to the Taman peninsula (Tmutarakan). The most significant role in the formation of the great state, and the development of political, economic, and familial connections with western and northern European countries, and with the Byzantine Empire belonged to the Christening of Rus under the Prince Vladimir Svyatoslavich in 980. The written language gained ground, and magnificent temples were built. Two of them, the Sophia cathedrals in Kiev

and Novgorod, survived, striking with their architectural design and colorful fresco paintings. A number of towns increased from 25 in the 9th Century up to 90 in the 11th Century. They were fenced with walls; churches and palaces of princes were built up inside. The social division of society was completed; peasants followed communal traditions, paid contributions to princes and their armored troops, but they were neither slaves, nor serfs; the feudal top with prince in the head constituted a military estate; clergymen kept aloof; craftsmen were arranged in some kind of workshops, which lacked the accurate reglementation characteristic of early-Mediaeval towns in Europe; merchants also emerged.

The historical evolution of Novgorod, another center of early feudal civilization in Russia, deserves a special consideration. One of the first Russian towns, Novgorod rose due to its trade connections with Western and Northern countries, the developed craft, art, and literacy (famous Novgorod birch bark letters testify to the wide spread of the written language in Novgorod), solid feudal-democratic traditions of the Veche.

After Yaroslav gained his thrown in 1019, which was largely due to the help of Novgorod, the town was granted independence. Hence it no longer relied on Kiev's authority, which was developed and fixed in the reign of prince Vladimir. The Yaroslav's Deed which was bestowed upon Novgorod for centuries, determined, like the Great Charter of Rights in England did in 1215, city's relationship with the power of sovereign.

After prince Vsevolod Mstislavich was ousted from Novgorod in 1163, Veche elected posadnik (a governor) and archbishop. It also invited prince to perform the offices of the military leader, and not a ruler with unlimited power. Novgorod managed to avoid Tatar-Mongolian invasions and to enhance its positions in the period when other Russian lands were split and separated. Novgorod merchants (united in trade corporations) bought and delivered to Europe fur, hemp, blubber-oil, wax, sea fung, some craft items in exchange for metal items, arms, cloth, jewels, wine, and adornment. Novgorod had much in common with Hansa towns, and Hansa's board was permanently located in the city.

'The Old-Russian state built up in the Eastern periphery of the European continent played an outstanding role in shaping the face of

Mediaeval Europe at large, its political structure, international relations, economic evolution, and culture. In the 9th – 11th Centuries it exerted influence upon Byzantium, Khazar Khaganat, Bulgarian states in the Volga region and Balkans, covered Central and Western Europe against Pechenegs and nomadic Polovets, and by its fighting against German invaders changed the balance of forces in the Baltic, Central and Northern Europe for a long period of time'. (25. V.2. P. 212.)

Nevertheless, in the early 12th Century the Kiev Rus began declining to its sunset. Feudal wars had already become frequent under Vladimir Monomakh (1113 — 1125). They exhausted the once mighty military, together with the economic, power of the Old-Russian State, which proved to be helpless when was faced by the Tatar-Mongolian invasion. In 1223 Russian princes were crushed by Genghis Khan hordes in the battle of Kalka; in 1237 — 1238 seventeen towns in Middle Russia were conquered and destroyed (among others were Vladimir, Ryazan, Moscow, Torzhok, and Kozelsk); in 1239 — 1240 Pereyaslavl, Chernigov, Kiev, and other towns in the south of Russia were grabbed. For more than two hundred years Russian principalities stood dependent on the Golden Horde, regularly paying it the enormously big *yasak*, a contribution. It was, according to A. S. Akhiezer's estimation, the first 'national catastrophe' in the history of the country, 'which was caused by total disorganization, decay of the state rule, domestic conflicts between parts of society, and helplessness in face of external force'. (4.V.1. P. 80.)

Starting from the 14th Century a new cycle began in the Russian history, the second stage of Mediaeval civilization; Muscovy became the epicenter of the cycle. The city's location was however aloof of the trade routes of the day. Ivan I Kalita, the Grand Prince of Moscow (1325 — 1340), having gained the *yarlyk*, an authority issued by Tatars, for the great principality of Vladimir, headed the struggle for collection of Russian lands. The culmination of the cycle falls onto the late 15th – the first half of the 16th Century. Ivan III (1462 – 1505) joined Yaroslavl, Rostov, Tver, Vyatka to Moscow principality, gave a terribly short shrift to Novgorod, the first Russian republic, which lost its freedom and independence thereafter, and concluded liberation of Russia from Tatars rule in 1480. Ivan IV the Terrible followed this line and claimed himself to be 'Tsar of all Russia' (1542). By that time the

population of Russia reached 6.5 million of people, there were 160 towns. About 100 thousand people lived in Moscow, the capital city. Craft developed, primarily iron-making and work in leather; salt deposits were wrought. Architecture and construction saw the rise. In the late 15th – the early 16th Century Moscow Kremlin was built (with participation of Italian architects), the Pokrovsky Cathedral (Vasily the Blissful) in the Red square (the middle of the 16th Century), Church of Ascension in Kolomenskoye (1532). The icons painted by Andrey Rublyov, Dionisy, Theophanes the Greek are the masterpieces of fine art of that period. Chronicles were written in monasteries. In 1553 Ivan Feodorov published the first printed book.

A three-field fallow system prevailed in agriculture, yielding sufficient harvests. Feudal relations became steadfast. Peasants were personally dependent, but enjoyed right to change their owner once a year (in St. George's day). Landlords and gentry received metayage from peasants. Legal relations were regulated by the Code of Law of 1550; *Zemskiye Sobory* — The Assemblies of Lands, some kind of an estate pre-parliament, were meeting periodically, and local land authorities were also arranged (the 50s of the 16th Century).

A peculiarity of Russia of that period, according to Fernand Braudel, was the pressing role of the state: 'In Russia the state stood like cliff amidst the sea. There was an equally general sensation of the impact produced by its all-mighty and self-will both on towns (whose 'air was *not* free' to the contrary of the Western Europe), on the conservative Orthodox church, on masses of peasants (which primarily belonged to the Tsar, and then to landlords), or on *boyars* (major feudals) themselves, bent to obedience... Moreover, the state took under its control the most important kinds of exchange, as it monopolized trade in salt, potash, vodka, bear, honey, fur, and tobacco... To the strong state corresponded the society which was kept in hand, doomed to produce a surplus product by the expense of which the state and the ruling estate lived; for without this ruling estate the tsar would fail keeping vast masses of his peasants, who were the main source of his incomes' (9. V.3. P. 456, 458.) The state supported expansion to the East in order to gain Siberia; in the hundred years period from 1550 to 1660 the boundaries of Russian tsardom were widened from the uplands near the Urals

mountains to Chukka region and the Russian Far East; the distance from the West to the East increased from 2. 1 up to 6. 2 thousand kilometers.

However, this mighty state was wrecked in the early 16th – the late 17th Century while being through transit to a next in turn historical cycle. A tumult reached its utmost level in Time of Troubles. That was due to economic causes, too. The starvation of 1569 – 1571 murdered hundreds of thousands of people. Peasants fled in great masses to the edges of the state. Population of Moscow fell off by three times. Cultivation of many lands was severed. Gentry were getting poor. ‘The rule of Ivan IV left the country utterly ruined. The destruction of authoritarianism doomed the dynasty to termination... Disintegration made a step beyond the point of irreversibility, making the breakdown of state inevitable. Some historians reckon that one third of the population of the Muscovite Kingdom was lost out of starvation (1601-1603)... The state fell as a result of localism riot, as a result of power’s transformation into the picture of evil in peoples’ eyes. The country for the second time plunged into depths of a catastrophic chaos”. (4. V.1. P.97 — 99, 101.)

The process of the recuperation of society, started after Zemsky Sobor elected Michael Romanov to be the Russian tsar in 1613, proved to last out for a long duration. The formation of Russian historical cycle, analogous to pre-industrial (early-capitalistic) civilization, extended over the entire 17th Century, and the acme of its rise falls onto the 18th Century, from Peter I’s energetic leap and ‘revolution from above’ up to the rule of Catherine II (1762 – 1769).

What are the traits characteristic of that epoch? Peter I resolutely took the course to getting closer with the western countries, ‘hacked out a window’, as a Pushkin’s poem had it, to the Western Europe, removed the capital to Petersburg, and built it similar to west-European towns according to the designs of talented architects. Resting upon the state power and defeating attacks from outside, nobility’s resistance, *strelets*’ (archers) and peasants’ riots, Peter I succeeded by relying on a policy of iron rod to reduce the gap from prosperous and manufactory Western Europe where bourgeoisie was quickly getting force and power. One should not think that it was a violence over history, breaking natural course of events; that Peter’s breakthrough was

lost by his heirs. So-called 'natural pace' could just retard Russia's progress and to bring the country to the periphery of global development, or turn into a colony of European powers, or something similar to that, like happened to ancient civilizations of India and China. Changes of the Peter's epoch reached the point of no return, they rested upon new leaders in policy, economy, science, and culture.

All these helped to bridge the gulf between Russia and Western Europe. 'When economic Europe attacked Russia, the latter had already been on the way that protected its domestic market, its own crafts' rise, manufactories it possessed by the 17th Century, and its active trade. Russia had even accommodated itself splendidly to industrial "pre-revolution", to the general upswing of production in the 18th Century. Due to the state's will and help mines, smelteries, arsenals, new velvet and silk manufactories, and glass plants appeared on the territory from Moscow to the Urals'. Yet enormous handicraft and home-made production was still kept working. 'By G. Blume's reckoning, in the 18th Century Russia's industrial development was equal to that of the rest of Europe, and sometimes even surpassed it'. (9. V.3. P.478.)

A desperate leap into the future draw on the strength of changes in mentality, values, knowledge, and skills of an active part of the society. None of a soaring flight of spirit of freedom, similar to that of the Renaissance in Europe, was evident in Russia; humanism was rooted poorly. In truth, there was no free person, all and everyone depended on the tsar's self-will. Enslavement of peasants took increasingly and coherently more rigid forms. Peasantry set forth solders for permanent wars, workers for building towns, palaces and new plants; it was levied with constanly growing duties so that to compensate expenses of state and nobility, rising like a coming storm. Nevertheless, even under these austere conditions Russia saw the rise in spiritual life, — in science, education, and architecture. This rise was big enough to introduce the secular print (1708), which allowed to enlarge publications on science and these with the focus on education, to open the Academy of Science (1724), to bring out the first newspaper *Vedomosty* (1703); to enable young gentry to continue education abroad, to invite talented scientists, officers, navigators, shipbuilders, architects, and artists for services and offices in Russia, to establish military schools and naval colleges, to found

Moscow University (1755), to stimulate M. V. Lomonosov for his multilateral activity, to open the first professional Russian theater in St. Petersburg (1756), to create the Academy of fine arts (1757); and to set off the whole sequel of geographic expeditions. It was the period for Russian science and culture to take a sharp rise, and for the whole country to make use of 'the window to Europe' for wider exchange of spiritual values.

But dynamics of economic relations in Russia was more complicated and contradictory one. There was a struggle between two tendencies. On the one hand, the growing numbers of manufactories (many of them employed wage workers), the fast expansion of seafaring and trade, and the brisk penetration of foreign traders into Russian market led to the origination and development of capitalist system and the formation of stratum of bourgeoisie, which was gaining economic and political power. The assault of a young and aggressive capital was evident and irresistible, although it met much more difficulties than in Western countries. In the late 18th Century there were 200 mining enterprises in Russia, and about 10 million tons of cast iron was smelted; there were 2, 094 enterprises in processing industry (1, 200 of them were manufactories), 81.7 thousand people were employed there (including 33. 5 thousand wage workers); more than 1, 700 fairs worked regularly. Bread export increased by 16 — 17 times for the period of 10 years and reached 12. 8 Russian pounds a year in the early 19th Century; iron shipment abroad was 3. 8 million pounds in the 80s of the 18th Century.

On the other hand, there was the traced tendency to affirm feudal yoke, first of all in village. The right to change the landlord (St. George's day) was cancelled, there was a brisk traffic in peasants with no land attached, as if they were slaves. Costs of metanyage and freedom redemption were getting higher; landlords could condemn their peasants to penal servitude, or military service. Peasants fled away to the state periphery by growing masses, which resulted into large peasant uprisings (like that under Pugachev's lead).

The contradiction of these two elements could not but become a hinder in economic and technical progress: the wageworker is more efficient than his harnessed fellow. Participating in the stream of world progress as well as approaching centers of the pre-industrial civilization, both achieved due to unprecedented efforts in the first half of the 18th Century, was gradually

getting less conspicuous. Russia was driven to the periphery, and if retained any power in the world affairs, it continued to rely only upon the might of the enormous state of military force and landlords. Napoleon felt the utmost of that power as he, with his bayonets, tried to bring bourgeois orders, victorious in France, to Russia.

Suzerains and landlords ruled with a practically unshared domination in political and judicial spheres. Attempts to effect reforms were made periodically (under Peter the Great, Catherine the Great, and Alexander I); nevertheless, the reforms did not change the nature of political power and state relying on the effectiveness of its gendarmerie. The reforms of 1775 — 1785 established local gentry assemblies and town dumas. But peasantry had received no rights altogether. Advanced thinkers were getting more and more dissatisfied which turned them into subject to penalize. The sharp turn towards reaction was most evident after defeat of the Decembrists (1825). Russia kept following its role of a stronghold for the serfdom-absolutist order.

The 19th Century for the Russian history became a period of crisis of feudalism and of first steps in society's transit towards industrial civilization. Productive forces of the country were restrained by serfdom. From 1800 to 1860 population of the country grew 2.1 times, while grain yields increased just by 42 per cent, meaning the decrease per capita by 32 per cent. Smelting of cast iron rose 1.7 times (getting lower per capita), which in England it did 24 times for the same period. Iron shipment abroad had stopped, but grain export increased by 5.4 times.

Chronologically industrial civilization in Russia covered the period from the 60s in the 19th Century till the late 20th Century, i.e. about 1.5 centuries. Within the framework of this historical cycle we can identify the following large stages:

1861 – 1916 was a period when industrial civilization was stretching out with an accelerated speed. It was a time of industrial overturn, firm establishment of capitalism, and its entering upon a phase of imperialism. These were years of the sharp rise in science, culture, and education; simultaneously, there were first signs of a nationwide crisis coming into view (defeat in the Russo-Japanese war, the revolution of 1905);

1917 – 1964 was the period of the nationwide crisis and attempts to

find a solution within the framework of the socialist option of development, without taking into account any victims and by expense of an excessively strained energy. But it was the period when the country won the Great Patriotic War and built the mighty military-industrial power;

From 1965 onward has been the final phase of industrial civilization, with unceasing and futile attempts to transform socialism by putting through reforms. This phase led to a next in turn nationwide crisis, the partition of the U.S.S.R., agonizing search of new ways and radical changes over the society.

Like all mankind on the verge of the 3rd millenium, Russia has found itself in a state of transit from the super-cycle which has comprised the triad of Mediaeval, pre-industrial and industrial civilizations, to the super-cycle from which only the fist link in the future triple chain, i.e. postindustrial civilization, is taking shape.

Let us consider in details the core tendencies of each stage in the modern Russian history.

The period of industrial overturn and affirmation of capitalism splits into five middle-term cycles which to a large degree coincided with the rhythm of global economic cycles.

The period of 1861 – 1871 was marked by nation's going out from the crisis and putting through several reforms which comprised all regions of social life (viz. on land, local self-government, judicial system, education, town, and military), let the opportunity to effect transformations without lapse into sharp revolutionary shifts, and to continue positively pressing for reforms. While many aspects of these reforms, especially peasantry, bore a semi-measure and compromise character, they prevented the society from a destructive explosion and permitted to put into effect some beneficial changes.

1872 — 1882 were the years of accelerated industrialization, rise in the standards of living, science, and education. Extraction of coal increased 3.5 times in this decade, oil production grew 32. 8 times, steel smelting grew 27 times, machine-building products grew by 62 per cent, railway length enlarged by 62 per cent. Capitalism was firmly established as a dominant economic order.

1883 – 1892 was the period when industrial production and transport continued to develop, although with a lower pace than they did in the previous

decade (coal production grew by 84 per cent, oil extraction increased 5.9 times, steel smelting grew 2.1 times, — however machine building achieved growth of mere 6 per cent, — and railways length enlarged by 33 per cent). Social contradictions were getting sharper. In the late 80s – the early 90s a wave of counter-reforms rolled, enlarging split between the society and the state.

1893 – 1903 was the period of accelerated industrial rise, which was primarily indebted to the mass inflow of foreign capital. Russia surpassed the developed countries in the economic growth rates: in the 90s the annual average rate of the growth of industrial production (in 50 regions of European Russia) reached 6.2 per cent, while in Germany it was 5.1 per cent, and in England it arrived at 1.7 per cent. But agriculture, with the average allotment in peasant's ownership decreased from 4.8 dessiatinas (2.7 acres) in 1861 to 2.6 dessiatinas in 1900, did not develop. The agrarian crisis burst out, leading to poor harvests of 1889, 1891 and 1892; bread shipment abroad fell.

From the one hand, the period of 1904 – 1916 was characterized by a new industrial rise (the average annual growth rate of production was 8.9 per cent in 1909 – 1913), expansion of railway network, rapid augmentation of banks and joint stock companies, and creation of monopolies.

'In five years (1908 – 1913) industrial production increased by 51 per cent, the whole number of employees grew by 31 per cent... All industries were on the increase, especially advanced ones, such as steel production, metallurgy, oil extraction, energy sector, and agricultural machine building. Moreover, in the leading sectors witnessed the unprecedented process of production concentration. This process was turning into a tendency... National income grew every year. The period from 1908 to 1914 could be called with full right "the golden age of the Russian capitalism". Nevertheless, in 1913 the general level of industrial production in Russia was still by 2.5 times less, than that in France, by 6 times below the same index for Germany, 14 times lower than that of the U.S.' (13. P.54, 55)

The attempts to reform agriculture within the western model approach (Stolypin's reforms) led to expansion of areas under crops in 63 regions from 81.2 million dessiatinas in 1904 up to 138 million dessiatinas in 1913, to improve equipment of peasant and landlord households with modern

machinery – cost of agricultural apparatus grew from 163 million rubles in 1906 up to 408 million rubles in 1913; 849 million pounds of grain was shipped to export in 1910. No doubt that all these were indications to economic rise, helping Russia to catch up with the centers of world progress. However, by the end of the period the lag was quite significant.

Social and political contradictions grew suddenly sharper after Russia's shameful defeat in the war against Japan. Started by the Blood Sunday on the 9th of January 1905, this process led to the uprising in Moscow and resulted into a wave of the governmental terror and the general sense of disillusion (1906 – 1908). At the end of the period Russia was drawn into the World War I that revealed all the country's contradictions.

What is the main outcome of the first semi-centennial industrial cycle in Russia's history?

1. Russia managed to make quite a fast move forward along the way of industrial progress and to begin reducing the gap which separated it from the leading powers entering just then upon the third Kondratieff's cycle (the U.S.A., Great Britain, Germany). But the gap still remained too large, and reforms bore a character of half-measure. Russia lacked resolution, time, and social forces to challenge the quasiferdom relations in rural communities. At the end of the period Russia found itself among moderately developed countries, such as Austria-Hungary, Spain, and Japan, lagging behind the leading countries by 10 — 15 times according to the integrated index, and surpassing the level of India only 4 times. Recurrent crises which coincided with the world ones became quite common.

2. Sharp contradictions combined with national traditions put Russia among the leaders of the world intellectual progress, although the level of literacy in Russia was still lower than in more developed countries. The intellectual elite formed in Russia was engaged almost in all fields of spiritual life; there were illustrious celebrities with the names known globally — D. I. Mendeleev, I. M. Sechenov, I. I. Mechnikov, I. P. Pavlov, A. S. Popov, V. I. Vernadsky, G. V. Plekhanov, M. I. Tugan-Baranovsky and others in science; I. S. Turgenev, L. N. Tolstoy, F. M. Dostoyevsky, A. P. Chekhov, M. Gorky in literature, composers of the *Moguchaya Kuchka* ('the Mighty Five') and P. I. Tchaikovsky in music, I. E. Repin, M. A. Vrubel, N. K. Roerich in painting, F.

I. Shalyapin, L. V. Sobinov in singing. This list is far from being complete. One could hardly find a country where so many bright and top level intellectual stars appeared within such a short period of time; probably, only the Renaissance of Italy could match. And that is the point of the common paradox of history: sharp social and economic contradictions make thought search new, un-conventional solutions and ways out of crisis.

3. The socio-political contradictions of the period were no less intensive. The compromise and the half-measure character of the reforms in the 60s of the last Century had however created impulse to push the country well ahead by capitalistic way of development, but there was not a single large social force which would be satisfied with this compromise and the benefits it had brought. Landlord-feudal strata, having kept significant part of land and property together with a key political influence, tried to turn history back, or at least hinder its motion. But ability to produce any effect upon society escaped them; they were repeatedly making mistakes. Large bourgeoisie (in alliance with foreign capital) grabbed key positions in economics, but it still lacked political weight and experience in leadership, comparable, for example, to their U.S., British, or French counterparts. Bourgeois democracy as a political order has not been formed altogether; attempts to build something similar to it with the help of Dumas which were periodically dismissed were no success. Proportional weight of small prosperous households and small bourgeoisie grew to some extent, but this stratum was dispersed and did not represent a mighty force. In 1913 population mainly consisted of the poorest smallholders (21.5%), half-proletarians (33.6%), and proletarians (19.6%) who virtually had no property altogether. Riots followed riots, revolutions succeeded one another. Attempts to put through the peasant' and Stolypin's reforms so as to ruin the rural community and to plant a layer of small owners in the village was a failure. Several years would pass, and communal order with all its marked equation, conservatism, and hostility towards innovations and business initiative would recover in life. In socio-political sphere Russia was a century behind the countries which led the way in the world historical progress.

4. Russia became more open towards the outer world, having established a variety of new connections. In 40 years (from 1860 to 1901) Russia's foreign trade increased its volume 7.5 times, and in 1910 export

surpassed import by one third. The export structure, mainly consisting of raw materials, already took shape; grain accounted for the share of 51.6 %, other grocery products accounted for 14.5%; oil, ore and wood items were 12.3 %. Import mainly consisted of metals, metal and chemistry items (21.2 %), manufactured goods, or raw materials from which they were manufactured (33.8 %).

Foreign capital flushed hastily to Russia, its share in the total investment accounting for 47 % in 1860 – 1880, and capital investment in manufacture amounted to 72 % of the whole industry. Capital brought advanced foreign technologies, market mechanisms, and enterprising spirit. Of course, a considerable share of the profits went outwards; however, in a general scope, due to the active foreign investments and internationalization of Russian capital the country gathered momentum in its industrial growth.

The second long-term industrial cycle began with the deepest nationwide crisis and embraced almost half of the Century (1917 – 1964). Within the cycle one can identify several large phases:

1917 – 1923 - the time of the sharpest all-national crisis which was set off by the defeat in the World War I, the revolution of 1917, the Civil war, and came to an end after the socialist scenario for Russia's development became unfolding.

1924 – 1934 — the period of struggle between different options within the socialist scenario – from a liberal course of the NEP (the New Economic Policy) to a totalitarian-bureaucratic alternative. The stage was finalized by the defeat of the liberal-market version, the devastation of peasant households, the substantial depression of the country's intellectual power and the deep crisis of 1930 – 1933;

the cycle of 1935 – 1952 included the Great Patriotic War, when a large part of the country's population and national treasures were destroyed. After the victory the country managed to recover its pre-war level in most sectors, but the economic structure was deformed heavily (military sector prevailed, agriculture and consumption sectors were undermined); the world socialist alliance came into existence at the expense of isolation from the other world.

1953 – 1964 were the years marked with the attempted reconstruction

and recuperation of the socialist model in terms of Khrushchev's reforms. The growth rates were accelerated in economics, and the progress in sciences and technologies was really outstanding, since *otepel*, 'a thaw', gave a second wind to intellectual forces. However, it was terminated by 'light frosts' in the end of the period, the next in turn social and economic crisis, and the undermined unity of the 'socialism camp'.

What were the principal achievements and failures of the second long-term industrial cycle, and how did it contribute into the historical genotype of Russia?

1. Having found itself at the focal point of the deep world and national crisis to result into the destruction of economy, the death of millions of people, the split of the Russian Empire, and the Civil war, Russia chose a marginal scenario to conduct a daring experiment, which was to embody the ideal of socialism for the first time in the human history.

What were the reasons of that experiment, why did it happen to be Russia?

First of all, the socialist doctrine goes back to long ages ago. It reflects the natural desire of indigent strata to improve their position by re-dividing accumulated treasures.

Secondly, the acute pitch reached by social and economic conflicts in the period of sunset of industrial civilization promised no future for capitalism, and raised a question of choosing further way and finding new bearings. Socialism and creation of a non-crisis regulated society appeared to be the most appropriate direction for many people of that time.

Thirdly, there were vigorous revolutionary parties in Russia; there were strong traditions of *obshchina* — community, whose history numbered many centuries, and which had much in common with socialist ideal. Poor and indigent layers prevailed. Brought to marginal condition by the overall and incessant crisis, poverty, and lack of any rights, these people were ready to accept extremists' slogans. Lack of any significant layer of entrepreneurs, able to lead the way towards the bourgeois order, democracy, and rule-of-law state also played its role.

However, as the experiment went on, it became clear that all these premises were not sufficient to build a vital and stable socialist society, to

embody communist ideals. It turned out that these ideals had serious defects: they suppressed individual initiative, they had principles of re-division behind them, not these of construction, and they weakened economic stimulus for an inventive and hard work, for innovations and entrepreneurship. A society built on these principles is unable to surpass market bourgeois economy in production efficiency, technical level, and product quality. Rule of equalizing and aggressive mediocrity, resting upon state apparatus and a single party monopoly, oppresses personality and its creative elements, and sets up order of a bureaucratic equality in lack of any rights in the face of outrage.

However, some achievements of social policy which were first effected in the U.S.S.R gained recognition and spread all over the world not only in the countries which entered the path of socialism after Russia, but in many developed countries (social-market economy in the Federal Republic of Germany, the Sweden model of socialism, 'social partnership' at Japanese companies, etc.

2. The second semi-centennial cycle had altered the Russian economy so radically that there was not left in it much from previous civilizations.

The nationalisation of industry, banks, transport, construction, and foreign trade led to annihilation of private capitalist order. The war and devastation undermined the economics. In 1920 industry production reached only 22 % of the 1913 level, gross agriculture production retained 67 % of it. But in 1925 the country managed to surpass the pre-war level in agriculture, and in 1927 it was done in industry. The attempt was made to stimulate economic development by promoting advanced technologies and large industries within five-year plans, and by putting into effect the so-called GOELRO (the state plan for electrification of Russia). Some results were apparent: in 1928 the level of 1913 was surpassed in industry by 32 %, and in agriculture by 24 %. The New Economic Policy, restoration of private sector and market economy were of a key importance in attaining such results. Barriers that had hindered economic growth in tsarist Russia and within the period of military communism, were removed.

But the rise did not last long. In 1929 – 1933 Russian economy plunged into a new crisis, which was mainly due to the the policy of enforced collectivization, as the village was 'stripped of peasantry', and the most

efficient, hard-working, and market-oriented part of prosperous peasants was executed or exiled to Siberia. As a result gross agricultural production fell by 23 % (in cattle-breeding by 52%) in 1933 comparable to 1928; it led to slump in food and light industries. While with the help of inflation (in 1940 the level of retail prices was 6.4 times more than that in 1928), manipulating statistics, and having redistributed resources into heavy industry, the government managed to hide the crisis, it burst out in reality and led to the death of millions of people from starvation in 1932 – 1933. It was not before 1934 that economy showed some short rise again.

Signs of a next in turn stagnation and decline were getting clear in per-war years mainly due to the mass repression and annihilation of the most qualified and active part of population. The decline was stopped by draconian measures as to enslave labor. The war hit heavily the country's economy. By the end of the war and in the first subsequent years the pre-war level was surpassed: in 1950 the national income were higher than that of the 1940 1.6 times, industry production increased 1.7 times, and level of production in agriculture was recovered. Nevertheless, the cited data shows cost statistics decorating the real dynamics in too many ways. In reality these achievements looked humbler.

The brightest achievements related to the last stage of the second cycle. The growth rates of economy were exceptionally high, enabling the U.S.S.R to keep a balance with the U.S.A. in military area and to become a center for the world socialist system which by that time covered one quarter of the world territory and included one third of the world population. Soviet Union made a strong appeal to the liberated countries of the third world which chose to enter a non-capitalist way of development. Socialism ideals gained the world acclaim to such an extent that some Western countries made following them part of their policies (Sweden, FRG, Japan). The U.S.S.R claimed it had built the developed socialist society and looked forward to the highest communist phase to have been attained during the course of two or three decades. (Khrushchev's impatient slogan: "Our generation will live under communism").

The Russian economy evolved by a one-sided trend, with an ugly over-growth of heavy and military industries and a weak progress in sectors

working to supply needs of population. By 1960 share of production accounted for 50.8 % within the structure of national treasures, while it accounted for 45.6 % in the U.S.A; the cost of home buildings was 19.0 and 29.6% respectively in the U.S.S.R and U.S.. Industrial power was retained at the expense of low living standards of population, and also due to the unprecedented centralisation of decision-making in economy and domination of the bureaucratized state property.

3. There was established the unique model of *sociopolitical* relations which corresponded interests of formation of totalitarian state and of overcoming social and political differences. Social structure was ultimately simplified, including working class, peasantry, and 'working intelligentsia' — intellectual workers; all of them were bound in their rights and freedoms by some sort of a serfdom (peasants had no passports with record of their identity and were obliged to work out a minimum norm of workdays; workers and office employees had no right to change their employer). The privileged state-party elite was formed; indeed, it became a new ruling class with decision-making authority not just with regard to property, but to life and freedom of other citizens. Repressions reached a tremendous scope. That is what the social structure of a totalitarian state was about, and it was reproduced in other socialist countries. Only at the last stage of this cycle, since 1953 some steps were taken in order to mitigate the totalitarian character of the state, to rehabilitate repressed people, and to introduce some political freedoms. But these steps were only half-measures which failed to change the fundamentals of political and social order.

National differences became officially recognized; national cultures received support; backward edges of national territories were developed. There was a mixture of nations; some of them, though, were wholly penalized without any litigation and exiled. But actually national differences were continuously ignored, as the industrial equalizing machine and totalitarian state dictated.

4. Socialist ideology proclaimed equality, personal freedom and flowering of spiritual sphere, but, probably, this sphere was most victimized by the system of barracks and bureaucracy. Intellectuals were the most persecuted and despised group. It is true, however, that the revolutionary

explosion provoked the unprecedented surge of creativity, imagination, and emancipated culture. But it was before long that the authorities began methodically putting upon culture a tough and ideologically repressive strait-jacket. Any attempts of non-standard and self-dependent thinking were immediately persecuted whenever they did not fully correspond to ideological dogmata, most particularly those in culture and art. Those who dared to persevere were sent to prison camps or executed. By the process of several consequent waves society became devoid of intellectuals. By the first wave, which came during the civil war, a part of intelligentsia was exterminated, and some people were forcefully deported abroad. The second wave introduced a series of gory court proceedings to be carried on in regular intervals, and a tremendous surge of the methodically prepared repressions run according to the well-composed plan. The third wave came after the war, bringing about the new repressions. The fourth one was made by the migration of discontented people in the 60s and later. Of course, these niches did not stand empty; scientists, men of letters, and journalists abounded, but only those obedient to the regime, at least outwardly, were let to continue their work. A free thought cannot be placed behind bolt and bars; scientists were needed in order to develop military technology, to explore prestigious scientific tasks, and to represent the soviet culture abroad. Thus a limited freethinking was allowed, but under the tough control.

Nevertheless, spiritual life continued to develop. Quite a few successes which won international acceptance were achieved in natural and technical sciences (especially those tied up with the military-industrial machine), in education, and preservation of national heritage. The slackening of ideological pressure in the post-Stalin time stimulated a vigorous rise of intelligentsia's activity. The thaw did not last long, however; the party control was restored, but it could not stop processes which undermined the spiritual basement of the regime.

Attempts to reform socialism and its sunset constitute the main content of the third long-term cycle of industrial civilization in Russia which began in 1964. Within the framework of this large stage were the following phases of middle duration:

1965 – 1984 were the years marked by the failure to reform socialism,

to impart socialism some traits of market economy, but to preserve the party-state monopoly. The futile endeavors resulted into obvious stagnation and into society's decay. The premises for general crisis accumulated and grew ripe.

1985 – 1998 was the period when attempts were made to change the society radically, at first with the help of Perestroika. Unexpectedly to the reforms' initiators, they led to the breakdown of the U.S.S.R., to the deepest overall crisis, crash of the socialistic ideals, collapse of the system of state and party monopoly and planned regulation of economics, general chaos and tumult, and explosion of social and national conflicts.

From the 90s of this century till the end of the first decade of the next century there is, and will be, the period of a painful escape from crisis, a gradual crystallization of new ideals of the future society, further rise of premises for post-industrial civilization, search of the place for Russia and countries related to it in the world historical progress.

What tendencies have been made out at this new stage of historical coil, and what have been its main results?

1. The socialism as a model of social development underwent the second circle of trials and tribulations (under conditions of peace), confronting capitalism at the last stages of industrial civilization. At first these tests seemed to proceed successfully.

But in the undercurrent of what seemed a triumphant movement seeds of future crash of socialist society were getting ripe. All attempts to effect reforms over socialist regime so as to make it fit to the changed conditions, undertaken by A. N. Kosygin, Yu. V. Andropov, and, in the case of the most radical one, by M. S. Gorbachev in the final stage of the period, met no success. But what matters is neither failures and mistakes made or unmade by this or that leader, nor any natural disasters, but the basic nature of the accepted model itself, its inner sins and inability to turn major contradictions of the industrial epoch in favor of a human being.

It does not mean that the whole way made by Russia in the course of these seven decades, full of extreme strain and unbelievable suffering, was a tragic mistake or a succession of failures. Much of what the country discovered and suffered has contributed to the treasury of the world experience and to the historical genotype of mankind. Now it has become seen

as the heritage belonging to many countries. But that does not cancel the main premise. The model of the state bureaucratic socialism which was implemented in the U.S.S.R and adopted by some other countries has no future in history. This lesson is really of a paramount importance for whole mankind. Now every nation will think more and more again before it decides on taking the same path in history.

However, the course taken by reformers of the 90-s, aimed at driving the country back to the market economy of the epoch of initial capital accumulation was doomed to the failure. It succeeded only in making the crisis deeper and increased people's suffering. It was the second coil of the crisis which began from the August 1998 before this fact has been introduced to our awareness; Russia looks for its own way to the future in carrying out a painful search and trying to learn from its own mistakes.

2. Socio-political order underwent a severe test, as well. The purpose which underlied this order was orientation at erasing class and national differences. The secondary aim was to effect a gradual transformation of the state based on proletarian dictatorship into the so-called 'state of all people'. This state, too, was assumed to cease to exist in the future. This order stood and passed most severe tests in the years of the World War II, though the passover was paid by enormous losses. However, it found itself unable to settle efficiently the urgent tasks set forth by the evolutionary transformation of the society during the peace time. 'The undestructible moral and political unity of the society', an undisputable socialist achievement as it used to be seen, in reality was a myth.

The policy of 'erasing of distinctions' between working class, *kolkhoz* peasantry, and working intelligentsia, between town and village, between workers of mental and intellectual labor, between nations and ethnoses, if suited the tone set by the industrial civilization, with its total standardization in everything, was contrary to newly born tendencies of society's diversification, to the people's growing realization of their own national and social interests. The stubborn ignorance of these differences prepared social explosion and the disintegration of the U.S.S.R, as well as multiple conflicts between nations.

However, the new social order which sprang up from the fragments of socialism has no historical perspective. It brought about the exuberant

polarization of incomes and social stratification, impoverished most part of population, and exacerbated social contradictions. It is nothing more than a stage in the transition towards a new social order to be resting upon extension of partnership, both in level and quality, between layers of different wealth, nation, and confession.

One-party system, dictatorship of the single party, which enjoyed the full economic, political, and ideological power, was the stronghold of the social and political order established in the U.S.S.R. This monopoly, resting upon the all-mighty party apparatus and tough discipline observed by millions of party ordinary members, was destined to cause an utter decay. Multiple attempts to reform the party, such as, for instance, a restored practice of regularly party national meetings, adoption of new programs, staff rotation, and supplementary education for members failed to bring efficient results. The mighty apparatus resisted radical innovations, squeezed out creative employees, and did not spare efforts to protect its monopoly and dominant ideology dogmata. The party proved incapable to head the oncoming upheaval.

For time was ripe for a multi-party system, for a confrontation between multiple parties and movements however difficult it might be to draw any distinctions between some of them. Democratic slogans may be just a veil covering the self-will of corrupted bureaucracy. It is going to take quite a time for the political structure of the new society to take shape which would be adequate to the democratic post-industrial society. A possibility that such a transition might be effected through a dictatorship set up in order to do away with the chaos still remains, though return to the totalitarian state is unlikely. Lessons of history must yield some benefit.

Some measures were undertaken to re-organize the soviet state, to urge Soviets to a more active work, to make them more democratic, to enhance the role of republican and local authorities, to strengthen social legal order, and to limit functions of punitive bodies. But all these, to be sure, was not enough to overpower the totalitarian nature of state. Some legislative acts were passed, with the objective to build the judicial base for democracy. But these, too, could not help establishing a rule-of-law state, as long as the party dictate, 'the telephone right', and outrages in the center or periphery were remained.

Dissidents were still persecuted in different forms up to reprisals in court (although this persecution never reached into the scope of the previous stage). During the stagnation period the state apparatus revealed the growing tendency to corruption and to interweaving with organized crime. The signs of an oncoming crisis in the state-judicial system were everywhere; and soon it came to deliver a crushing strike over the old system.

However, the essay to enter upon the new level of state rule by state's receding from economy, the sharp deterioration of its social function, and strategic and innovational function, was a mistake. It resulted into a graver crisis in society, upsurge of crime, an increasingly mightier shade economics, helplessness of great masses of common citizens in the face of organized gangs and corrupted bureaucracy. This bitter experience demonstrated that instead detriorating the state the emphasis should be laid on modifying its functions and enhancing its role in making of basis of social market economy and democratic rule-of-law state.

3. The country boasts many achievements in developing and improving the society's technological base in the first decades of the period under discussion. Science developed in accelerated pace; the U.S.S.R. was the undisputable leader in peaceful use of nuclear energy and space. But as time went on, some tendencies to a stunt in technical progress emerged, to a lag in realization of the fifth technological order (especially in civil machinery), obsolescence of production facilities, and some decline in growth rates of labor efficiency. Measures were taken periodically in order to stimulate innovation activity, but they failed to improve the situation significantly. The country was loosing the competition in sciences and technologies to developed countries. Under such conditions tendency to a technological degradation of economy and the gap separating Russia from the world leaders were getting more and more conspicuous.

4. As regards *economy*, significant contradictions were apparent at the third coil of the Russian industrial development. The priority of the military-industrial system and heavy industry brought about economical disproportion: agriculture permanently lagged behind and was unable to meet needs of population in food stuffs; manufacturing of consumer goods accounted for about one fourth of the total industry production, and the queue for dwelling

was growing. The state-owned property dominated without any rivalry, some attempts to reanimate kolkhoz-owned property turned to be of a small efficiency. Personal subsidiary smallholdings, the main source of self-sustenance for many people in the early years of the period, answering population needs at the beginning of the period, became drastically limited. There was the growing influence of shade economy. There were incessant efforts to reform the management of economy, intended to stimulate motivation of employees, enterprises, and regions in production efficiency. But these efforts were never more than a temporary success, they could not change the economic system based on exploitation of employees by the state bureaucracy, on priority of militarism, super-centralization of management, limitation and oppression of market mechanisms and stimulus. It was the simple fact that the planned socialist economy failed to prove its supremacy over the regulated market economy dominant in developed capitalist countries, in spite of constantly declared advantages of the former.

In the first half of the 90s the process of stripping economy of the state property got underway. Actually, this period was a phase of initial capital accumulation, occasionally in most parasitic forms, pushed ahead by a galloping inflation. It was unfolded against the background of growing influence of shade economy and flight of capital abroad. The crisis threw the Russian economy back in decades, and living standards of population dropped twice.

5. There seemed to be no dispute about country's achievements in spiritual sphere (science, education, and culture). Receiving a significant support from the state, the soviet science (especially fundamental research in natural sciences) took a leading place in the world in many fields. However, research related to military technologies enjoyed the priority. (About 3/4 of the state financing of science was assigned to this sector). But the quantitative growth in science brought about a deterioration of quality. Social sciences were totally saturated with ideological stuff and developed apart from the world humanitarian sciences. High level was achieved in education, especially in universities and colleges; the number of certified specialists often exceeded one which was needed, while the quality of their training was gradually getting lower. Culture could not boast remarkable achievements for its

development was bound by the ideological dictate. Much attention were paid to development of cinematography, television, library system, and book publishing, but their content were under strict party control and getting more and more alienated to life. The adoption of the 'moral code of a communism builder' could not stop even for a short while the growing tendencies of the social decay and the corrupted morals. Although religious persecution became less in scope, as compared to the previous period, it was never really stopped.

It became clear that socialism had not brought flowering in spiritual sphere and rise in creativity, and that tough ideological control is a hinder for spiritual outgrowth.

A deep crisis has stricken the spiritual sphere from the 90s. The funds for science, education, and development of culture were being drastically cut. Brains' drain and migration of talents reached a giant scope. But deep inside this process premises of a new rise in spiritual activity are getting ripe, like it happened under critical situations in Russia many times before.

6. The consolidation of the U.S.S.R. military and political power has resulted in formation of a two-pole world. The U.S.S.R. became the leader of socialistic countries united by the Warsaw Pact and the Council for Mutual Economic Aid, whose influence has reached southeastern Asia (Vietnam) and the American continent (Cuba). Some developing countries from Africa and Asia, getting notable military and economic assistance, were inclined to support the U.S.S.R.. The U.S.S.R. played a vital role in the activities of the UNO, in the formation of the OECD, and reached military parity with the U.S.A.. The U.S.S.R. made a stupendous contribution to bringing armaments race in weapons of mass annihilation to a stop and to liquidating the most dangerous kinds of weapons.

In fact, there was the world empire with the U.S.S.R. in the head. But this empire turned to be unsolid, it rested upon military power and economic assistance. A row of events in Eastern Germany, Hungary, Czechoslovakia, and Poland revealed that people in these countries did not accept the enforced order. A split emerged between two leading powers of the socialist camp, the U.S.S.R. and China, and this split was constantly enlarging. The military parity with the U.S.A. and support of the allies were reached at the expense of the hypertension of national economy. As long as the Soviet power

deteriorated, the Empire began cracking, first in Eastern Europe, and finally it crashed together with the U.S.S.R. and the Council of Mutual Economic Aid at the beginning of the 90s. Pressed by the common disarmament spirit and by the destructive economic crisis, the main part of the military industrial system was dismantled, and the defense potential was largely lost. The world ceased to be the two-pole system. But Russia managed to preserve its positions of the world power.

By the end of the last cycle of industrial development it became clear that the chosen way of development had no future. Russia entered upon a transition period to the postindustrial civilization which is abounding with shocks.

If to sum up the results of the historical way made by the local Russian civilization for a period of thousand year, it may be stated that its specific trait, rather than being a unique Eurasian character, is in the fact that Russia, largely synchronising its pace with the general rhythm of history, as it did, sometimes lagged behind, sometimes caught up with the vanguard countries, and now and then took on a hard mission to search and experimentally explore new ways of historical progress (the conception of 'the Third Rome', Peter I's breakthrough, spiritual leadership in the late 19th Century, and the socialist experiment). These rushes were paid heavily, but were enough for the pioneer temper of the active part of the nation to cool down for quite a while.

3.2. Man being in mediaeval and industrial societies

Growth in population. The second historical super-cycle is first of all characterised by the demographic explosion, which is especially true with regard to the industrial society. While within the nine centuries from 1, 000 B. C. up to 900 A. D. the population of the Earth increased from 80 to 320 million people, i.e. by four times, in the next eleven centuries (up to 1990) population reached the figure of 5, 670 million people, i.e. 17. 7 times more (and in the last 1.5 hundred years the figure multiplied 4. 7 times). These were the paces which the whole history of mankind had never seen. Such a huge growth was due to a tremendous progress, decline in the rate of lethality and significant increase of duration of life. It also testified to the unparalleled growth of labor efficiency, which permitted to feed a growing number of consumers, and to multiply an average number of material products and services per capita, while cutting at the same time significantly a number of employees in production.

But the tendency had some negative features, too, especially in densely inhabited countries due to the limited availability of resources and the extreme pressure on environment. And it is not population growth which is singularly to blame. There was an uneven distribution people over inhabited areas. In 40 years which passed after the war (from 1950 to 1990) the number of people living on the globe increased by 3, 190 million, i.e. by 225 per cent, while 80 per cent of them falls upon developing countries (including China and Vietnam), whose share in the general figure has grown within this period from 45 to 74 per cent. We must take into account that this is the poorest part of the globe population which is essentially incapable of providing itself with adequate conditions of life. The gap between developed and developing countries in labor efficiency and personal income per capita reached 10 — 15 times and has not been changed significantly within the last decades. By the end of the 20th Century this gap has grown into a combustible problem of North – South relationship and has caused a lot of conflicts. The industrial civilization proved incapable of levelling gaps in living standards of different countries and local civilizations. Developed countries effloresced largely due

to a ruthless exploitation of peoples in colonial and dependent countries, their poverty and starvation. Only few of these nations have managed to attain the modern level (countries of the Middle East, rich with oil, Southern Korea, Singapore, Thailand, and some others).

Dynamics of human needs and abilities. Changes which came over the nature of human being for the period of 1. 5 thousand years of the mediaeval industrial civilizations are incomparably less in scope than those in it which occurred within 7 thousand years of the first three civilizations. Nevertheless, a tremendous progress has been achieved, attended by a variety of dramatic tribulations; it has molded a modern human being with his different needs, diversified abilities, and a large volume of quickly outdated knowledges and skills.

In a transitional period from antiquity to the mediaeval society the place which was previously held by the free citizen of Greek poleis, or the Roman state, an optimistic creature with much affection towards the beautiful, a philosophical-inclined person successful in cultivating soils, in craft, and participant in elections of his ruler, was taken over by the belligerent, ignorant, narrow-minded, and cruel king with his suite of landlords and armed force which was for all practical purposes a gang of highwaymen, successful in wars, raids, and robberies. This place was also obtained by the peasant suffocated with rent, forfeitures and military raids, permanently scared by both heaven and earthly penalties for a legendary sin and his own deeds, humiliated by philosophy of pessimism and wretchedness, rejecting earth pleasures in favor of the bliss beyond, and with an ethical code of a fake sympathy and hypocrisy.

The European of the late antiquity was superseded by the young, energetic, and vigorous barbarian, although less overburdened by knowledge and contenting with poorer living standards. He was quick to absorb all which preserved a vital capacity from the previous society; Christianity did a lot to help him, having become a sort of capsule to house and to pass from one civilization to another scientific, cultural, and ethical genotype, although significantly impoverished and distorted.

In the East, in Byzantium, India, China, Persia, and Middle Asia the way from the man of the Iron Age to the modern man was somewhat more

smooth and even, and had less fluctuations. A collapse came later, when these countries became colonies or semi-colonies of the aggressive capitalist nations of Western Europe which conquered countries, once being in the vanguard of the world progress, and stunted their cultural development for centuries. The colonization of America was the most destructive one for ancient civilizations.

During the course of all three civilizations of the second historical cycle the position of man in society was undergoing changes, as if following the swings of some pendulum of freedom. Begun from the personal freedom and relative equality of inhabitants of antique poleis, where slaves had no rights at all, the pendulum swung back into the lack of freedom and dependency from a multi-level hierarchical society of Middle Ages which was essentially permeated by non-freedom in any link. Peasants, equal within their community, depended upon their suzerains. These, in their own turn, were the vassals of a supreme suzerain, for they served with their command in the royal military, depended upon royal justice and outrage. Both suzerains and a king spiritually depended on the church. The religion blessed, and art glorified the estate hierarchy and obedience of inferior to supreme, promising Kingdom of God as a reward for earthly submission and suffering. Both Christianity and Islam emerged as religions of the oppressed one, but then turned into pillars of hierarchy, a mechanism of spiritual enforcement, which encouraged executions of those adherent to a different faith and persecuted heretics.

Pre-industrial civilization, the Renaissance, and the Enlightenment were another swing towards freedom and civil equality. This epoch invoked spiritual growth of personality and resulted into the triumph of human spirit. The ideas of science, art, and democracy experienced by antiquity were revived again; towns of Venice, Florence, Genoa, Amsterdam, Toledo, and others were flourishing. They turned into the centers of spirituality where political liberties and unbound human spirit rule together; each of them became a focus to attract craftsmen and architects, poets and artists, merchants and bankers. Universities grew into strongholds of freethinking.

But establishment of personal freedom could not go forward painlessly. Feudal suzerains wished to strengthen their power and killed those who dared resist, permanently waged wars, administered justice, and meted out a punishment. The Church tried to raise its power and economic might,

provoking massacres of people of other faith and persecuting heretics. Dozens of thousands of people suspected to be heretics, and great thinkers among them, such as Giordano Bruno, were burnt alive in ceremonial 'autos-da-fe', or 'executions without blood shedding' as they used to call them with an immense hypocrisy.

Under the sunset of pre-industrial civilization, the Reformation and then counter-Reformation, the absolutism regained its strength. Persecution of dissidents resumed, a scope of non-freedom increased together with oppression of peasants and craftsmen, and the orgy of outrage and Inquisition. The feudal hierarchical order was doomed. Bourgeois freedoms, rooted, as they were, in the idea of civil equality, priority of personality, equal opportunities in competition were triumphantly established. The English and French Revolutions and the War of Independence in the North America were the key factors to launch the whole process. Freedom of personality and competition turned into the symbols of the bourgeois faith. They became prerequisites for the rise and blossom of the industrial civilization. They opened a way to swift development of science, inventions, and education, which now were liberated from the fetters of religious dogmata. Religion had to step back, being pushed by a power of the mind, and being forced to adjust itself to changing conditions of social life.

However, in the 20th Century, as the industrial civilization approached its sunset, the pendulum again swang to servitude. The economic basis of this civilization included transforming the human being into a screw of the enormous industrial machine obediently pleasing the interests of monopolies which well corresponded to those of the state bureaucracy. The Nazi rule in Germany, the fascism in Italy, and Stalin's regime in Russia were a setback of the gloomiest times of Middle Ages. The highest achievements of intellect and the best working hands were passed to insatiable Militaristic Molech which murdered dozens of millions of people in the world wars and put mankind to a brink of thermonuclear self-annihilation.

Family underwent changes, too. A large patriarch family, usually consisting of three generations, was common in the feudal village or the gild town. Large families were characteristic of the ruling elite, as well, creating grounds for conflicts and crimes when time came to divide heritage. Family

mainly rested upon an economical basis, while the ruling elite vastly took in consideration political and property values in dealing with matrimony. Marriage and family were sanctified and supported by church.

Growth of personal freedoms and supremacy of market relations undermined the family of the past; increasingly losing positions, it survived chiefly in the village. Family did not retain its former economical significance, especially among proletariat and intelligentsia; independent women became more active. Family bonds remained stronger in eastern countries, where they were deeply rooted in traditions and rested on Islam support.

Dynamics of requirements of human being and family, initiated progressive shifts in society and at the same time was subject to their own influence. Proportion between biological and social needs was changing undulatingly. During the transition towards Middle Ages there was a shift in favor of biological and material needs, comparable with the golden age of antiquity. Destruction of productive forces, when a part of population was annihilated and cultural treasures were destroyed, and decline in labor efficiency simplified human needs, made them primitive, aimed first of all at survival of a human being or a family, preservation of a community or a town. This survival, to be sure, needed to be desperately defended. Naturalization of economy entailed a shrinkage of the range of economic needs related to exchange and market; concerns with the ownership and sale of land, and appropriation of feudal rent gained the priority. Sociopolitical needs were limited to the narrow boundaries of the community, guild, or vassal dependency. Spiritual needs, influenced by the Christian and the Muslem asceticism and dogmatism, were attenuated and simplified.

There was a number of factors, which, operating together, destroyed the narrow boundaries of natural household and placed the emphasis upon economic interests. These were formation and development of local, national, and continental markets, the quick rise in craft, manufactory, and, from the early 18th Century, machine industry, increase of the strata, whose well-being depended on the state of the market, tougher competition no longer impeded by barriers which were removed from its way, introduction of loans and banks. The human being of the bourgeois society is a *Homo Economicus*, no matter what place he occupied in the developed system of the social division of labor.

Sociopolitical needs were secondary to economic ones. Political freedoms and civil equality, gained with so much strain and trouble, are supposed to provide equal opportunities for competition and to protect property, both purchased or inherited. The state apparatus, courts and legislation serve the same goals.

Spiritual needs, too, were subjugated to economic requirements, although they often went beyond the boundaries of the latter. The growth of well-being, diversified activity, progress in international connections required a well developed science, culture, and art.

Cyclical dynamics was also apparent in development of human abilities substantiated by the help of knowledge and skills. Complication and multiplication of activities in the pre-industrial and especially in the industrial society, a widespread application of scientific achievements in production, management, and the military required a new level of abilities, knowledge, and skills from a wide range of employees. Thus a system of general and specialised education, and professional training were first built up. There were primary, monastic, and parish schools, gymnasiums, lyceums; a smaller part of population could afford studying at universities. Later emerged a network of different technical schools and colleges in which technological and engineering staff was educated. Manufactories and enterprises continued to practice apprenticeship which was immediately connected with production.

Functional illiteracy and professional incompetence of some employees grew significantly in transitional periods due to sharp changes in conditions of manufacture and life. Millions of people changed their professions, knowledges, and skills which they had previously acquired, but which then proved to be outdated. Thus a stimulus was formed for reorganization in the quality of education, a stimulus which evoked a new generation of employees who better met the demands of the epoch with regard to intellectual and professional capacities.

Mechanism of motivation. The necessity to survive, to continue succession of generations, and to provide for one's family underlies the mechanism of motivation of human being as a biological species. This biological and at the same time economic stimulus, entering the foreground under crisis conditions, acquires an increasingly complicated structure and

content by making every new step under conditions of fast division of labor and development of product exchange. A historical and moral component, the family's expenses for cultural needs, began to be counted to cost of labor and socially necessitated expenditure for labor reproduction. In the feudal capitalist society there was constantly increasing part of people who did not participate in manufacture of goods and services, but presented a growing demand for them on the virtue of onwership of some property, or of economic and non-economic enforcement. Here we encounter with the work of another mechanism of motivation; it is striving to accumulation of the wealth, or the political and military power due to exploitation of employees in manufactures that it is all about. Both the non-economic and the economic enforcement to labor exist in all epochs, supplementing each other; but the proportion between them differs. In the feudal society the personal dependency of the peasant was a prevailing element which co-existed with the economic dependency (suzerain's property of land). The personal dependency varied from a comparatively mild metayage to a savage serfdom as was practiced in Russia. At the same time, there were different forms of economic enforcement and wage labor which already existed in manufactures, services, and intellectual activity.

In the pre-industrial society economic enforcement was gradually getting more and more significant. The employee was deprived of his own means of production, and hence forced to sell his working power in order to support himself and the family. However, the initial accumulation of capital was associated with various kinds of violence, while serfdom, or milder forms of dependency, still prevailed in the village. The industrial society saw economic enforcement turn into the main and prevailing method, although that did not exclude an occasional recourse to non-economic ways (slavery in the U.S.A. before the Civil War of 1864, prison camps in Nazi Germany and Stalin's GULAG; different forms of feudal and semi-feudal exploitation in colonies and so on). The state-bureaucratic compulsion to labor was especially severe at the phase of sunset of the industrial civilization, which precipitated the deep crisis to overtake it.

We, however, should not circumscribe mechanism of motivation by the framework of compulsion, whether economic or uneconomic. Labor may

be a creative expression of human talents and abilities which brings joy to man due to the realization of his plan and ideas and the creation of something new. There was always a mechanism of creative motivation which ennobled labor and turned it into an attractive search of ways to approaching the fixed target. Of course, this creativity was least revealed in the work of a slave, or a serf, and was manifested in the work of an architect, sculptor, scientist, or composer.

The doctrine of Christianity houses some elements which urge a human being to work and reveal his talents, and Protestantism and Calvinism look at someone who does not evolve potentials planted into him by the superior will as a sinner. Creative stimuli to labor were becoming increasingly delienated, though lost grounds under the years of crisis.

There was much specificity about the way in which the eastern countries where Islam, Buddhism, and Confucianism (China), or Shinto (Japan), dominated developed human needs, abilities, knowledge, skills, and mechanism of motivation. There individual inclinations, capacities, interests, and freedoms played a submissive and secondary role, while interests of the state and collectivity were put first, and the family was built up stronger. That was blocking up revelation of individual abilities and talents, which was typical of the western industrial epoch. The lack of self-fulfilment grew in one of the factors to hinder society's progress and helping to keep colonial dependency of many countries.

3.3. Acceleration of technical progress

Every following civilization is a step forward in the technological mode of production which man applies according to his new knowledge and skills; it also is a step forward in acquiring a new set of technical means, technologies, and forms of production organization. But technical progress does not go evenly along an ascending line, or an exponent. It was, let it be stressed, a regress that initiated the transit to the second historical cycle in the former centers of antiquity. 'After the fall of ancient world tools became coarser, and products were simpler due to a general process of the barbarization. Europe partially broke ties with the culture of antiquity (except for Byzantium). Taking over Greek and Roman experience, Barbarians used to change tools according to their needs. In each sector technologies and methods of labor were developed in a pure empirical way and in extremely slow pace'. (15. V.2. P. 45.) To that we can add that not only Byzantium, but many other countries of the East saw none of a long pause like that in their technical progress. While it was the beginning of the 2nd millennium that Europe surpassed the technological level of antiquity, not only China and India had exceeded the Greek and Roman achievements in particular fields, which however had not found wide application in practice, but had become superior to them in a general scope of technical progress several centuries earlier that date.

Technical revolutions under feudalism. In the history of the last three civilizations, as a transitional period was close to the end, one could trace several technological overturns which are characterized by the transition towards a number of essentially new technologies, technical devices, and organizational forms of their realization in main spheres of human activity (not only in production and understanding, but also in military affairs).

The technical revolution of the mediaeval society unfolded in Europe in the 11th – 12th Centuries and began from the overturn in agricultural and military technologies. By this time the transit from hoe-tilling to more advanced plough-tilling was completed. Three-field fallow system was

commonly practiced; together with use of organic fertilizers it provided fertility of soils and stable harvests. ‘Three-field system was an important factor in the progress of individual small households and increased productivity in agriculture: in cultivating one hectare of soil labor efforts became three times less, while now they could support twice as much people. In the 14th Century the three-field system triumphed in great open spaces of the Russian vale’’. (Ibid. P. 41.) It means that Russia was two centuries behind Western Europe in this matter. Progress in agricultural technologies afforded additional labor surplus which became a source for town development and greater social diversification.

Military turned out to be another stimulus for technical progress. Feudal wars were raging unceasingly. The human mind was focused on inventing both offensive and defensive lethal weapons. Arbalest entered into martial practice, supplying the flight of the heavy arrows both with range and power. Mighty swords, sabers, war axes, and poniards were put into use. Gunpowder which was invented in China and then become spread over Europe was immediately followed by a new kind of weaponry, firearms, which was rapidly developed and advanced (pulwerts — metal pipes shooting cut stone balls; cannons mounted on guncarriages; heavy guns – arguebuses). A wide set of devices was invented for sieges; there were ballistaes and catapultes; Byzantines applied ‘the Greek fire’ which filled the besieged with horror; gunpowder charges were used to explode fortress walls and gates. But, at the same time, this process was stimulating to better the design and construction of more and more fortified castles and fortresses, as well as impregnable towers.

The quickly growing demand for agricultural, military, construction, and home-used technology brought an overturn in mining, metallurgy, and tools production. Copper, iron ore, and later coal were extracted with the use of mining method (sometimes mines were 500 meters at depth). Methods of smelting cast iron, steel, and copper production, and those to obtain needed alloys and Damascus steel were improved. In the 11th Century hammer welding, hot forging, heat treatment, art forging, encrustation, and bells casting were known and used. Development of trade and far away military raids contributed to production of carts and carriages for nobility, construction

of paved roads and bridges over the rivers. Multi-deck sailships, furnished with cannons, were designed. Compass made seafaring endeavors in navigation more reliable.

Mass use of watermills and windmills, whose design was undergoing permanent improvement, became a basis for revolution in power supply. They served as energy sources in a wide variety of production. Europe, especially in its northern part, was strewn with windmills. Mechanical clock, from tower machinery to pocket watch, marked the culmination in technical progress of the epoch. After mastering production of paper, which was originally processed out of rag, printing emerged, introduced by German craftsmen and inventor Gutenberg in 1434. This fact was a real overturn in education and culture.

Fernand Braudel believes the period of the 11th–13th Centuries to be the first industrial revolution in Europe, which consisted of agricultural revolution (three-field fallow system, use of horse with a padded shoulder horse collar); energy revolution; and urban revolution related to demographic rise. (9. V. 3. P. 563.)

Technical achievements of this period inspired Roger Bacon as far ago as in 1260, centuries before Leonardo da Vinci and Jules Verne, to predict the great future for the machine. 'It can well happen that machines will be built, which will propel the biggest ships to move faster than if they would be packed with rowers, and that carts will be constructed, which will be able to move with an amazing speed and without animals' help, and that flying machines will be created, too... Machines will also penetrate into the depths of rivers and seas...' (Ibid. P. 565).

The wide spread of guilds uniting the workshops of single families was a factor which helped progress in crafts. Guilds made tools of craft labor more specialised, saw to the uniformity in technologies and manufacture of the goods in which art of masters was imprinted, and helped to expand cooperation of labor. But by the end of the 16th Century the tough regimentation and technological conservatism turned them into an obstacle, which began largely hindering progress in technology and making way to emerging manufactories, whose advancement was based on division of labor inside production.

The comprehensive technical revolution of the manufactory period, the one that formed a next technological method of production, reached culmination in the 16th Century. Great geographical discoveries and expansion of international trade were beneficial for swift rise in shipbuilding and facilitated revolutionary changes in the related fields. Progress on furnace process and use of coal provided society with cheaper metal. The inflow of raw materials from the new sources, i.e. colonies overseas, acceptance of more efficient technological methods to process them, expansion of markets, growth of population, and increase of incomes helped to a fast outgrowth of wool, cotton, glass, porcelain, and other manufactories. Printing was undergoing a rapid boost, too: by the year 1500 scientists were acquainted with 40, 000 publications. The book becomes instrumental for acceleration of technical progress and application of new scientific knowledge in practice.

The new technology became a basis for firearm manufactory production, especially that of artillery, various guns, and pistols. Weaponry yards and arsenals came into existence. The Navy came to be equipped with more powerful board cannons.

The manufactory became the main form of organization of production within the second technical revolution of the feudal epoch. Division of labor and specialised instruments of production were the key components of its basis. Manufacture prevailed in Europe from the middle of the 16th till the end of the 18th Centuries; it laid the groundwork for labor productivity to make a leap by a higher level, for development of mass production (which the guild system failed to do), for an initial phase in formation of capitalism, and for some improvements in technologies and for scientific ideas to be applied.

The industrial rise resulted into growth of towns, turning them into centers of manufactory production. Structure of nourishment was improved for vast majority of population. Consumption of grain, fish, meat, wine, beer, and sugar rose; population began growing.

What were the main results of technical revolutions under the feudal epoch?

First, begun by the overturn in agriculture and military, these revolutions brought the technological basis of craft production and construction to a radical transformation, as they found application for a wide

variety of tools and new materials (first of all, steel).

Secondly, new, more efficient methods of using water, wind, and falling water energy were developed, such as watermills and windmills; the transit to coal provided the quickly growing production with a reliable energy basis.

Thirdly, development of shipbuilding, great geographical discoveries, and brisk international exchange pushed forward territorial boundaries for technical innovations, and helped to make technological levels of development in the main regions of the inhabited world approach each other.

Fourthly, the technical revolution of the pre-industrial civilization coincided in time with the beginning of unfolding of the second scientific revolution, which drew closer science and technology, helped to implement some of scientific ideas and built new efficient ways for scientific understanding.

And finally, shapes of production organization made their way from the peasant's or craftsman's family household, through the guild order to the manufactory which was based on division of labor, cooperation, and specialised instruments. In such a way, pre-requisites were created for machine production, for the plant or factory, to come into life.

Industrial revolution and technical overturns of the industrial society. The industrial civilization, with its correspondent technological mode of production, dates back to the industrial revolution, which was unfolding from the 60s of the 18th Century in England; at first, the technical overturn burst into textile industry, resulted from invention of spinning machine, mule-machine, and Jaquard loom. The opportunity offered to drastically increase labor productivity and thus cut yarns and clothes costs. From 1785 to 1850 cloths production in England grew 50. 6 times, while its price declined 5. 5 times; cloth made up half of the British export of that time. (9. V.3. P. 591.) It goes without saying that products of craft could not compete with industrial production. Craftsmen broke in thousands.

Wide use of textile machines demanded a new and comparatively cheap energy source, a machine-engine. In 1784 James Watt invented a steam machine equipped with a flywheel, a choke, and an automatic governor, which could keep textile machines working with a constant speed. Grounds for the

invention were ripe long ago, and it spread with the fantastic speed. By 1835 the cotton industry – then the leading industry of England – used up to 30 thousand horsepower of energy produced by steam machines, against 10 thousand horsepower obtained from water source. (Ibid.)

Creation of machines opened grounds to accept new methods of iron and steel production using coke, to expand coal extraction, to introduce a railroad transport and steam shipping (after steam locomotive and steamboat were invented).

The second stage of industrial revolution was also started in England by switching from production of machinery on the previous base of manufactories over to constructing them with the help of other machines. The machine building industry emerged and began swiftly developing, and industrial technology thus acquired its base, which provided its technological structure with more uniformity and pushed it to a soaring growth. The lack of natural pigments provoked creation of artificial dyes and launched development of chemistry. Machine factory appeared in England as an adequate form of application of machine which came to take the place of manufactory.

The new technology of machine production spread over agriculture too, which was partly so due to the fact that the latter could become an additional manpower resource for the vigorously growing industry. ‘The revolution in agriculture marked itself the same radical shift in people’s activity that the industrial revolution had done. In course of its progress a need in farm labor to work up foodstuffs diminished, and the tendency to towns’ attractivity for broad layers of rural population clearly manifested. Having originated in England, the mechanised agriculture soon was planted into the discovered American lands, and then, after decades, into most densely populated rural areas in Europe’. (7. P. 291.)

Thus, England became the center of the technical revolution, which transformed radically a technological foundation of its entire economy and then rapidly expanded over the North America and Western Europe. That, again, increased the gap in the technological level of economies between leading countries and most of countries of Asia, Latin America, and Africa, where pre-industrial technological methods of production still prevailed,

conserved under the colonial supremacy of developed countries.

A next technological overturn of the industrial epoch unfolded in the middle of the 19th Century: it became a logical continuation of the industrial revolution. Its core consisted of heavy machinery manufacture, production of steam locomotives, construction of railroads and navigation channels, and steamship building; all these industries were developed at a high speed. Electrical magnetism was discovered; telegraph, dynamo-machine, and gas engine were invented. Chemical industry was also undergoing a vigorous development.

However, there were no such revolutionary innovations which had been characteristic of the late 18th Century; rather, it was a stage at which these innovations had to be mastered and spread, while the previous technological mode of production still prevailed in many countries. 'The middle of the 19th Century was not the period of radical technical transformation to be compared with the changes of the 18th Century. It was rather the period when manufactory methods underwent incessant betterment all the time and were applied in a wider and wider scope. When England rivals emerged on the historical scene, the country managed to keep and even multiply the advantages which it had acquired as a result of the industrial revolution. For some period of time the country virtually served as an industrial workshop for the entire world'. (Ibid. 304.)

A magnitude of the technical revolution at the late 19th – the early 20th Century was much larger. Energy producing industries became its core in conjunction with a transit from steam and coal towards electricity and liquid fuel, mastering of methods of mass production and transmission of electrical energy to far away distances. Use of electricity for operating machines, for communication and lighting, and a stormy development of electrical engineering also constituted the main kernel of these changes. Development of oil extraction and refining methods, and obtaining a set of liquid oil products with their subsequent use in the engines of inner combustion resulted into a significantly cheaper cargo transportation and passengers travel. New kinds of transport appeared (a car and an airplane). Electrification of production and everyday life opened new opportunities for energy translocation and separation, for bettering working conditions, and transformations over remote

regions.

The car and the airplane brought about revolutionary changes in transport and provoked a shift in several adjacent industries, such as metallurgy, machinery manufacturing, and chemistry. A need appeared to increase cheap steel output, to arrange mass production of steel and rolled products of different kinds and quality, and to develop nonferrous metallurgy. After this need was met, that in its own turn gave a push to mining industry, exploration, extraction, and enrichment of minerals, and provoked reassessment of mineral resources in colonial countries.

Progress in chemical industry permitted to arrange mass production of dyes, catalytic agents, pharmaceutical products, and mineral fertilizers. The utilisation of all these in agriculture, together with using tractors and a set of other updated agricultural machines and methods, laid a basis for technological overturn in this sphere, made it possible to increase yields of main crops and cattle productivity, to rise labor efficiency in agriculture, and deliver it from a lot of working hands badly needed in industry.

Achievements in science and technologies laid the groundwork for the next in turn technological revolution in military. Emergence of military aviation and tanks, construction of mighty military fleet, creation of new explosive stuffs, poison gases, and using radio in communication – all these was giving a boost to armaments race and built a base for the First and then for the Second World Wars, where dozens of millions of people perished, while economy and culture of many nations suffered the tremendous damage. Inventions of the human mind turned against their designer.

What are the main features of technical revolutions in the epoch when the industrial society was established and then reached its maturity?

First, science played more important a role in transformation of technological base of production, as compared with technical overturns in the previous civilizations. The scientific discoveries and large inventions directly propelled a row of new, stormy developing industries (electrical technology, engine building, aircraft industry, oil refining, mineral fertilizers, etc.). Production was increasingly turning into a technological application of science. In its turn, the technological progress brought additional advantages into understanding.

Secondly, the technical revolutions of industrial epoch used to happen on the basis of machine production, making deeper a range of transformation whenever it was applied. System of machines permitted to overcome narrow boundaries of manual labor and opened opportunity for a further increase in its productivity by a series of leaps.

Thirdly, new natural productive forces were put into service for the human being. Power source was found in coal and steam, then in oil products and electrical energy. Set of goods, made out of mineral and wood raw materials, widened; use of these materials in production gained larger scope. Mining industry and agriculture, which witnessed the very beginning of productive economy, got a second wind.

Fourthly, radical changes came over organization of labor. Industrial giants, interacting with each other, displaced craft workshops and manufactories. Resulted from enormous scope of technical metamorphoses, joint stock companies came into life. In the late 19th Century first monopolies emerged. Collectivization of labor reached a tremendous magnitude.

Fifthly, technological progress and machine production caused major changes in structure of personnel and level of employees' qualification. A number of scientists, engineers, and technicians immediately involved into process design, production, and use of complicated technology, grew immensely. Requirements to workers' qualification also were heightened. All these, taken together, provoked another revolution in education.

Sixthly, labor efficiency rose due to a series of technological overturns; many products (especially those made at new production lines) were sold at a cheaper price, their assortment enlarged, and quality improved considerably. This process, much as uneven it was, brought a general augmentation in efficiency of reproduction and living standards of most part of population in developed countries.

Seventh, contradictions in technical progress became more exacerbating and operated on a larger scale. A need to recurrently update machine generations turned into a material basis for economic crises every so often coming to shake the capitalist economy, with millions of employees being sacked. Labor intensity grew, and ties by which the human being was attached to the machine were getting tougher. Advantage was taken of some

technical achievements to build means of annihilation, with local and world wars gradually gaining an unprecedented destructive character.

The technological revolutions of the 20th Century. It is characteristic of the technological overturns of the 20th Century, the epoch, when the industrial civilization aged to its sunset and the postindustrial one came into being, that the main moving forces to renew material and technological basis of society – viz. scientific intellect and its substantiation in new generations of technology – are closely interlaced. This fact was made out to be a ground to speak of scientific and technological progress revealing itself in recurrent waves of transformation which are called scientific and technological revolutions (STR). Any significant progress in technology would not happen without new scientific ideas to be borne and to come through technological exploration. But without adequacy in modern instruments and devices to process accumulated information progress in science will not come either. Today the tendency to a reciprocal permeation, a merger and integration of science and production, is gaining the upper hand.

A consistency in cyclical dynamics in science and technique, and in succession of machine generations and technological orders, can be vividly seen today. The unified scientific technological cycle, whether middle-term or long-term, has included, as its organic part, a phase when the new idea (whether being scientific discovery or large invention) must consistently undergo through genesis and then technological exploration to become later the basement for a technical innovation, a new technological trend or generation.

Not only a wavy cyclical dynamics of science and technology continued in the 20th Century, but it also gained new integrated forms. We believe that there were the STR of the middle and the end of this century.

The first STR manifested in developed countries in the 50s and 60s of the 20th Century, although its initial scientific base was created by a raw of large scientific discoveries and inventions, which were made in the earlier decades. The largest discoveries in physics, chemistry, biology, and technical sciences served predestinated the fact of its origins; the first STR combined three scientific and technological directions: researches into the theory of nuclear energy; quantum electronics, building of laser technology,

transformers of electronic energy; cybernetics and calculating machinery, building of computer generations.

In order to realize the scientific and technological overturn some basic changes were to be effected. Machines with partially programmed governors and processing centers came into life together with automated lines and automated systems of management of production and enterprises; nuclear energy, first having served a good supplement to heat power, then started displacing it. Synthetic materials – thermosetting resin, plastics, man-made fibbers got a vigorous boost. When gas-turbine engines were introduced, this led to an overturn in aircraft industry. The non-stop steel pouring technology was invented. Developing cosmic spaces, resulted from the synthesis of several scientific and technological fields (mathematics, space science, theory of management and computing, metallurgy and instrument making, missiles and optical machinery) became the most eminent advancement in science and technology in the 20th Century. Technical progress entered everyday life on a large scale.

Chemistry boasts such achievements as the discovery of new ways to purposefully influence the structure of matter, to synthesize materials with particular qualities tailored in advance, to obtain herbicides and pesticides, and to reproduce mechanism of catalytic processes. Achievements in biological and medical sciences became a keystone for building vitamins-producing and microbiological industry, and to obtain first generations of antibiotics. Building of nuclear and thermonuclear weaponry of an enormous destructive force, together with missiles to deliver it to any point of the globe, secret work on chemical and bacteriological weapons, production of new generations of aircraft, helicopters, tanks, artillery, machine-guns, advanced types of military ships, atomic submarines – all these accomplishments of military technological revolution of the mid-20th Century brought mankind to the brink of self-annihilation. Armament race went beyond any boundaries which have something to do with reason; further accumulation of lethal weaponry lost any sense on the virtue of the simple fact that once being used, even due to a someone's criminal adventure or a fatal accident, it must be capable of destroying all life on the Earth.

Breath-taking successes of the first STR however go along with some

shade effects they produce. The unparalleled involvement of natural resources (primarily, mineral ones) into production accelerated their depletion and polluted the environment to such an extent that some mining and metallurgy regions turned into areas endangered by an ecological catastrophe.

All these caused the crises which unexpectedly hit the world in a succession (in technological, energy, ecological, economic, and social fields) in the 70s. The second STR, which manifested itself in the last quarter of the 20th Century, became the material basis to overcome the crisis and marked the beginning of a transit towards the postindustrial technological mode of production.

The synthesis of the three currently basic trends of science and technology: microelectronics, biotechnology, and information technologies made up its core. These trends reflect fundamental achievements of quantum physics, molecular biology, cybernetics, and information theory. The building of large and super-large integral schemes has paved way for micro-processing technology, a miniaturization and greater autonomy of technical systems in all sectors of economy, and contributed to a more rational use of resources. Opportunity to vary and change structure of hereditary substance by using genetic engineering was taken to build bacteria strains possessed of usefulness for the human being, to influence hereditary mechanism, and to build entirely new technological processes and materials. The new information technologies, perfect means of accumulation, processing, and traffic of information outline horizons for understanding and management of complicated processes in nature and society, and building of local and global information systems.

Basic directions of the second STR lay the groundwork to qualitative transformations in all spheres of production equipment. Development of programmed production lines, robotics, flexible production systems, and automatic design systems open a perspective for multilevel automation.

Depletion of traditional energy resources and their high potential danger to environment force to search for, and put into use, non-traditional, practically non-exhausted power supplies (solar, wind, tides, etc.), and to utilize high temperature super-conductivity and microprocessor technology which can keep energy in. But the real energy revolution awaits us yet ahead.

The iron era in the course of which, for almost three millennia, iron

served as a main construction material, is coming to an end. Priority is given to materials with pre-planned qualities – composites, ceramics, plastics, man-made resin and items molded out of metal powder.

The world is coping with brand-new technologies: geobiotechnology in extracting mineral raw materials, low-waste, or non-waste technologies in processing raw materials, membrane, plasma, laser, electrical impulse technology, etc. All these novelties permit to gain the final product in a shorter time and by making fewer efforts, to skip some intermediate operations and processes.

Radical shifts go on in communication and transportation technologies. Fiber-optic communication lines, space, facsimile, and cellular communication are fairly making upheaval in the entire sector. A set of brand-new innovations is being introduced in transport (vessels with an air pad, screen-crafts, railroad transport on magnetic suspension, electro-mobiles, etc). However, these innovations are entering our life in a slow pace. Transport revolution goes forward with some delay. This factor combines with growing prices for oil fuel to result into relatively high tariffs for transportation services. Meanwhile, the large cities are virtually stuffed by cars beyond any reason.

Following the first ‘green revolution’, the second one is coming over. It is held that its chief priorities are production of ecologically clean food with the help of biotechnological methods; an environment less polluted with herbicides, pesticides, and mineral fertilizers; use of microprocessing agricultural machinery and intensive technologies in order to provide programmed harvests. Yet these achievements of the second STR are being slowly planted, while millions of people in developing countries are dying of malnutrition.

When scientific and military utilization of the outer space was characteristic of the first STR, the second revolution is aimed at using it for production. The time of scientific heroic deeds and competition of priorities with no costs taken into account has mainly been over. Satellites are launched on commercial terms, since modern communication cannot work without them. Space offers an opportunity to rear crystals, and to apply unique biotechnology.

The second STR brought radical changes into forms of production

organization. Small and medium-size enterprises which follow flexible production programs and can change them easily are taking place of industrial giants. They are united into structures of the 'mild' integration, i.e. consortiums, associations, financial industrial groups, which enable them to react swiftly on market changes and cut overhead expenditures. Small and medium-size business of Japan, Italy, France and other countries produce more than a half of their gross national product, creates new jobs and is apt to a flexibly reaction to innovations.

Use of computers (especially PCs) and information technologies allowed to make automatic some delicate and complicated managerial tasks in production, economy, and social processes, to search for better grounds in decision-making, and to perform control of goods and decisions' follow-through. It was recognized that management without human being was an illusion, which as such was dismissed, but it however became clear that making decisions on strategy or policy in any matters without a needed information, by using the trials and mistakes method, is extremely inefficient. Indices of automatization and stocks supply in management have become close to these in material production.

The sphere of exchange proved to be a beneficial field of the technical overturn. To carry out researches into marketing or flexible pricing, to study state of market, to process banking and commercial information modern information technologies are a vital necessity.

Brand-new medical equipment, new medicines made up by employing biotechnology, new methods of diagnosis and treatment are coming into life today. Computerizing education helps to make teaching intensive, and to catch students' attention.

In this epoch of scientific and technological revolutions the rhythm of progress in science and technology revealed itself with surprising accuracy in periodical succession of technological orders and generations of technology, which are the material basis for Kondratieff's economic cycles of mid-term duration.

What are, then, the main results of the first two revolutions in science and technology in the 20th Century?

First, the two elements of progress, science and technology, which

were priorly largely independent, but closely interacting, have become integrated into the unified stream of scientific-technological progress, thus having accelerated the speed of transformation in material basis of society.

Secondly, a sphere to implement large innovations has become wider. In fact, almost all sectors of production of material and non-material sphere have transferred to the modern scientific and technological basis. Development of home electronics and telecommunication networks has transfigured everyday life, and let many families in developed countries to be embraced by the world information space.

Thirdly, STR brought radical changes into production level and forms of its organization. Today, production is specialised, diversifies, concentrates, and integrates in yet a different way. The first STR was making production more concentrated and global, and built up a network of scientific and technological monopolies and transnational corporations. However, the world technical crisis bared a danger of monopolism to basic innovations and gave a push for making production less concentrated, for developing of small innovations businesses.

Fourthly, the first STR and a next in turn military technological revolution have led to construction of such a mighty weapon of mass annihilation, that lack of sense and extreme danger of its application became quite obvious. For the first time in millenniums limits were deliberately set up to the scientific and technical progress in this area, while some kinds of weapons are limited within an agreed range of application, or even annihilated. It means that needs of the military sphere have stopped to be the main impulse of scientific and technical progress and to serve a hinder to its use in civil areas.

Fifthly, the first STR set the tune of a long period of intense economic growth, when the newest ideas and technologies were involved into production on a mass scale, and natural resources were quite cheap. The second STR is characterised by transit towards ecologically clear and resource-saving technologies.

3.4. The economy of mediaeval and industrial civilizations

Striking changes have happened on the third floor of the pyramid of society, in structure of economics, ownership relations, exchange and distribution, in mechanism of economic management.

Dynamics of economic structure. Let us begin with the changes which have taken place for one and a half thousand years in structure of economy, in a ratio between reproduction sectors, inter-branch complexes, levels of reproduction hierarchy, in technological, economic and cost structures of the gross domestic product. The data given below in the Table 4 indicate some very important tendencies.

Table 4. Dynamics of economic structure of the mediaeval, pre-industrial and industrial civilizations.

(Per cent to the gross domestic product, assessment)

Blocks of macroeconomic model and indices	Transitional period (the 6 th century)	Mediaeval civilization (the 12 th century)	Pre-industrial civilization (the 16 th century)	Industrial civilization		
				The middle of the 19 th century	The 60s of the 20 th century	
					The USA	The USSR
1	2	3	4	5	6	7
Reproduction structure						

<i>Reproduction sectors:</i>						
Personal consumption	50	40	30	39	27	20
State consumption	12	13	15	15	16	24
Intermediate product	15	19	20	23	24	26
Initial product	15	15	13	12	8	13
Intellectual product	3	5	7	8	10	8
Market infrastructure	5	8	10	12	15	9
Total:	100	100	100	100	100	100
Structure of industries						
<i>Inter-branch complexes:</i>						
Agro- industrial	45	35	25	15	6	12
Production of consumer goods	7	8	10	13	15	8
Machine-building	7	7	9	12	15	9
Fuel and energy	6	7	8	10	9	11
Construction materials	5	6	7	8	8	9
Construction	10	11	11	11	10	12
Transport	6	7	7	8	7	8
Military-industrial	7	10	12	9	11	17
Science and technology	-	-	1	3	4	3
Social	4	5	5	6	6	7
Foreign economic	3	4	5	5	7	4
Total:	100	100	100	100	100	100
Hierarchy structure						
<i>Reproduction levels:</i>						
Household						
Individual	60	45	30	20	8	15
Regional	30	40	45	55	65	50
National	10	10	12	10	7	8
International	-	5	10	10	10	22
	-	-	3	5	10	5
Total:	100	100	100	100	100	100
Technological structure						

<i>Technological modes of production:</i>						
Relict	60	20	10	5	-	5
Mediaeval	40	70	10	5	-	2
Pre-industrial	-	10	75	10	8	15
Industrial	-	-	5	80	92	78
Total:	100	100	100	100	100	100
Economic structure						
<i>Property forms:</i>						
Personal	25	25	25	20	13	20
Small private	35	30	25	20	12	5
Large private	5	20	30	45	50	-
Community	20	15	10	5	5	20
State	15	10	10	5	10	50
International	-	-	-	5	10	5
Total:	100	100	100	100	100	100
Cost structure						
<i>Cost elements:</i>						
Material expenditures	20	25	25	30	25	30
Depreciation	5	8	10	10	12	8
Wages	50	40	30	25	20	17
Social consumption	5	7	10	10	13	12
Savings	5	5	8	10	12	13
Non-production consumption	15	15	17	15	18	20
Total:	100	100	100	100	100	100

1. About a double decline in share of production assigned for personal consumption is to be found in reproduction structure, mainly by virtue of the significant growth of intermediate commodity (due to the technical progress and developing division of labor), services in market infrastructure (due to market development and widening exchange), and state consumption (militarization of economy, expansion of bureaucratic apparatus and state property). Share of ineffectual product grew three times, reflecting the multiple increase of employees engaged in science, education, and culture. The socialist version of the late industrial society stood in contrast with its capitalistic counterpart for a less personal consumption and especially market infrastructure, while state consumption (due to a swollen party-state

bureaucratic apparatus and exuberant defense expenditures) and initial product (the high weight of mineral, agricultural, and forestry raw materials) accounted for significantly higher a weight.

2. Branch structure of economy underwent significant changes. If during the transitional period and in the mediaeval society agriculture and crops processing industries played the main role (a more important than in antiquity), by the mid-20th Century share of agro-industrial complex (AIC) dropped 4 times, that permitted to free a large number of employees for manufacturing tools (a more than doubled share), consumer goods and services, materials (metals and chemistry items), weaponry, and for science-industrial, social, and foreign economic functional complexes.

In the economic structure of the U.S.S.R. military-industrial and fuel-resources complexes prevailed, while consumer goods and services sector, machinery manufacturing occupied a less important place. A bigger share of agro-industrial sector is explained by its low efficiency.

3. In hierarchical structure of economy share of natural households dropped many times, as compared with the transitional period; they covered most part of the family needs in the middle of the 1st millennium. Individual reproduction at small and large manufacturing and service enterprises grew approximately two times. Share of regional reproduction remained at the same level. Ever since medieaval civilization share of national reproduction showed swift rise, while the end of the industrial era brought impetuous rise of share of international one.

Socialist version was characterized by a higher specific weight of national (mainly in military-industrial complex and transport) and household levels, while individual and international levels were represented with lower range.

4. Dynamics of technological structure of economy reflects a shift in technological methods and orders. During the transitional period relict technologies inherited from previous civilizations prevailed. In each next civilization a technological method which was characteristic of it was dominant, while remains of the previous method and some springs of a new forthcoming one coexisted in the time scale. Dominant technological orders succeeded each other periodically.

In the economy of the U.S.S.R. pre-industrial manufacturing methods constituted a significant share in the mid-20th Century (more specifically in subsidiary small holdings and households, in agro-industrial sector and services); industrial technologies pertained to military-industrial, fuel-resource and transport complexes.

5. *Economic* structure, correlation of different kinds of property, and sphere of market relations have undergone a radical change. Although the setback to community and small private property was characteristic of transition to feudalism, then share of large private property (including one belonging to monopolies and joint stock companies) began growing; it increased 10 times by the middle of the 20th Century. Share of state-owned property declined at first, but it grew again in the period of state-monopoly capitalism, and turned into the dominant form under socialism. Share of small private property declined, but nevertheless it kept its position in agriculture (family farms) and service sector. International property emerged, related to capital export and development of international monopolies, and its specific weight showed a quick rise.

Natural household was the main economic pattern during the transit to feudalism (while a step back was made in market relations as compared with antiquity), but later on market was swiftly gaining ground to become the main form of exchange in the industrial society, with remains of natural exchange reduced to minimum.

Under socialism market relations were deformed by an interference of the plan-bureaucratic apparatus; market infrastructure were cut to a minimum.

6. Dynamics of cost structure is characterized by the growing share of depreciation and material expenditures (resulted from the rise in technical and organic structure of capital) and of the part of the basic product, which was redistributed through channels of public consumption (for healthcare, education, and pensions) at the expense of the notable, more than double, decline in share of remuneration of labor (while real incomes were increasing) as the immediate result of the increased labor productivity. The tendency to augmentation of surplus product in cost structure can also be identified, which was especially true with regards to surplus product assigned for accumulation. The socialist version was characterised by greater material input per unit of

production and less share of remuneration of labor.

Transformation of economic orders. Starting from the transit to the early class civilization, a multiplicity of orders was always keeping as a characteristic trait of economics, and no doubt it will keep this trait in the future. But composition and proportions of economic systems based on different patterns of property and respective patterns in distribution and exchange do constantly change. That is why the structure of succeeding modes of production in economy is never homogeneous, but always full of peculiarities; the structure is different, too, at correspondent phases of local civilizations. Nevertheless we could find dominant tendencies which can be explained by the cyclogenetical and cyclicodynamical approach to economic relations.

The method of reproduction of labor force, as considered from a socio-economic point of view, changes from civilization to civilization. The more trade character of economics was, the larger share of family needs was covered due to purchase of goods and paid services. However, a significant share of personal services has no character of trade. Family functioned on principles of self-service, but increasingly fell back on market for supplying its needs (especially in towns).

Small-scale commodity order, based on a labor-obtained private property, prevailed in towns of mediaeval Europe and also in countries of the East; it embraced the village, too, where feudal relations were nevertheless dominant and combined with natural households of peasant families. A vast majority of goods in mediaeval towns was produced by craftsmen (united in workshops) and sold by small traders; then the sector of paid services was gradually shaped. But as capitalistic order emerged and began developing, the manufactories, first, and then factories, plants, large capitalist enterprises displaced small-scale commodity order to a roadside from the highway of economy development. The triumph of machine production and abundance of cheap products forced many small producers to go bankrupt and to be later turned into wage workers, or to join up the quickly growing service sector, or to start wandering and begging, open to severe penalties.

The drop of employment in agriculture was of benefit for rapidly developing industry and especially to service sector. In the U.S.A. by the

middle of the 20th Century half of the population was employed in services. Both in agriculture and service remained niches for small-scale commodity order. To some extent free lance professions – those of advocates, writers, and artists – could be considered belonging to the order by virtue of their virtually being small entrepreneurs.

Small-scale commodity order was almost entirely displaced in socialist economy, largely due to the enforced collectivization. That grandiose, painful experiment however has proved a need to retain this order in those economic niches where large production is of less efficiency and producer's efforts may be a more substantial contribution. Actually, small-scale commodity production continued to work in the Russian village and services, taking different forms of 'shadow economy'.

Adaptation of small peasant households to feudalism and then to capitalism drew on various cooperative enterprises, which took on the trouble of connecting the village with the market. Communities were one of the pillars of the feudal society, especially in Russia and some countries of the East. They maintained self-organization and mutual assistance between peasant households in the village and saw to feudal rent to be paid in due time. Capitalism destroyed community; but the latter kept resisting for a long time, and recovered again, like Fenix. Thus in the 70s of the 19th Century the revival of community order (after the peasant reform was effected) was apparent in Russia. All the efforts of P. A. Stolypin to undermine the community and to form a layer of small private owners in the Russian village were swept away by the equalising redistribution after the October revolution of 1917. The NEP (New Economic Policy) forced social dissolution in the village and succeeded in partly severing community traditions. But, owing to the collectivization, they recovered in a modified form of kolkhoz.

Although such a tenacity of community had the positive effect, since the community was helping the village to survive under critical situations, more often it acted as a conservative force. Recurrent re-partition of land hindered progress in agriculture and care to be taken for keeping land fertile. S. Y. Vitte emphasized that 'the community is responsibility of a decent, diligent and sober worker for an idle and drunken one'.

Slavery order survived periods of mediaeval and pre-industrial

civilizations as a relict order, mainly in countries of the East. However, after the discovery and colonization of America it was unexpectedly revived; slave trade quickly gained ground; it was only in the 60s of the 19th Century that slavery was abolished in North America, i.e. in the period of the apogee of industrial civilization, and might never have been destructed, if there had not been the civil war between the Northern and Southern states. Slaves' labor could be practiced under conditions of plantation economics, as they were procured at a very low price. For some time slavery was economically justified.

Feudal order, presented by large landlords and dependent small farmers, (coloni, who prevailed as early as in the 3rd – 4th Centuries A. D.) originated from inside of the late slavery society. In China it took over the dominant positions in the 3rd —4th Centuries. In Western Europe (the Kingdom of Franks) feudal property (feodum, estates, ancestry lands, senioriums, church, and monastery property) became prevalent in the 6th – 7th Centuries. Slavery prevailed in Byzantium till the middle of the 7th Century, while feudal relations (backed by the strong community) got the upperhand only in the 9th – 12th Centuries.

Feudal order in Russia was shaped on the basis of large land property in the 9th — 10th Centuries, when community lands would be taken by *knyaz*'— the prince, and free community members were converted into 'smyerds' (serfs). These depended on him and paid him the tribute. Then princes used to pass their lands, together with smyerds, to *boyars* (landlords) and monasteries as land gifts (granting also the right to collect duties). In the 9th Century feudal ancestry lands, processed by dependent peasants, were going through formed. In the 12th Century prince's warriors and servants, who formed a basis of the future nobility, got land plots (together with dependent peasants).

After the deep crisis of the 13th – 14th Centuries was overcome, the process of the making of feudalism in Russia gathered a high pace in the 15th– 16th Centuries. Landholding of ancestral lands and monasteries was firmly establishing itself, while state and private-owned serfdom enlarged. From the end of the 15th Century landlord's ownership became wide spread due to the instrumental progress in landlords' economy and feudal rent.

In the 16th–17th Centuries the feudal order entered a deep crisis. Bitter serfdom and rise of feudal rent curtailed capacity for reproduction in peasants' households. A number of starvation years grew: there were such 34 years in the 8th Century, 38 of them fell onto the 14th Century, the 16th Century numbered 38 such years; 64 years brought famine in the 17th Century.

The 18th Century saw the restoration of the feudal order. Peter I took advantage of achievements of the pre-industrial civilization to apply them under conditions of harsh serfdom (including construction of armory and metallurgy plants, and serf-employed manufactories).

Free towns occupied a notable place in mediaeval economy. Theirs was a specific pattern of life, a mix of feudal and capitalistic traits. Feudal nobility, church, and state power were keeping strong there, but at the same time small craftsmen and traders prevailed; large traders, workshop heads, bankers possessed the economic power; freedom-loving spirit was fostered in the universities and maintained by writers, artists, and actors.

Capitalist order in its initial forms (of trade and banks) originated yet from the depths of antiquity, although then it could not develop significantly. From the end of the mediaeval civilization these elements were being restored and enhanced in free towns to be widely developed in industrial civilization. The largest phenomenon of the period was emergence of the industrial capital – first on the basis of the manufactory. Thus prerequisites for enlarged reproduction of capital as a self-growing cost were laid. The peak of the process was reached in the 16th Century.

The ultimate victory of capitalist order over feudal pattern happened in the developed European countries at the beginning of the 19th Century, as a result of industrial revolution and the succession of bourgeois revolutions. For the capitalistic mode of production it was the Age of its sunrise and zenith. Capitalism was established in most countries of Europe, North America, and involved into its orbit many countries of Asia, Africa and Latin America as colonies and semi-colonies.

Sweeping away all the obstacles on the way of capital accumulation and introduction of machine technologies, resting on mighty impulses of enterprising and competition spirit, keeping capital, which lept at new industries and regions as it chased profit, highly mobilized, the capitalist

order brought the extremely high paces of economic growth, and, in the long run, the considerable rise in living standards for developed countries.

The capitalist order went through several steps as it developed, flexibly changing forms and mechanisms. Capital came out from the circulation (trade and usury capital), and it was mainly through this sphere that it had carried out initial accumulation. But when its time was due, it invaded production by a wide front and transformed radically its economic conditions. At first, individual private capital prevailed, when capital-property and capital-function were merged in the whole, and the proprietor was an active entrepreneur himself. But later needs of large investments — into metallurgy plants, railroads, channels, etc., — surpassed capabilities of individual capitalists. The time of share capital came. Capital-property and capital-function were divided: a hired manager was put to see to production to bring income to a shareholder.

Monopolist capitalism became the next stage. It permitted to concentrate enormous capitals in new capital-consuming industries, providing them with enlarged reproduction and monopolistically huge profits with the help of monopolist prices. It was not an agreement inside a group of capitalists, moneybags. Getting monopoly profits by the redistribution of surplus value became an economic need; otherwise there was no chance to run large scientific, technological, and investment projects, or to meet increasing needs of reproduction. But the negative features of system showed themselves with no delay: monopolies are not interested in basic innovations unless and until the invested capital is not repaid; monopolist prices allowed for receiving super-profits even within a low efficiency of production. Monopolies became the highest and ultimate form of concentration of production and property; having exhausted themselves, they opened way to a more flexible and efficient small business, which largely saw its revival in the last quarter of the 20th Century.

The state sector in economy existed and played a notable role during the course of all the three civilizations. Usually it did not act as an independent order, but just serviced a dominant economic mode of production. State property became an important source for feudal relations, as it covered expenditures to support court life and to wage feudal wars, which was

especially manifest in Byzantium, the East, and Russia.

In the epoch of capitalism the initial significance of state sector fell, because the state in classical bourgeoisie relations sufficed itself by the role of a 'night guard' intended to keep order inside the country and pursue interests of the ruling class. However, the world wars of the 20th Century, the deepest crisis of 1929 – 1933, and difficulties in enlarged reproduction drastically enhanced the significance of state sector and led to the formation of the state-monopoly capitalism. Since then, bureaucracy was allowed to interfere into processes of production and limit freedom of market competition. The state-monopoly capitalism turned into one of the marks of the future sunset of capitalism.

Our account of dynamics of economic relations in the industrial civilization would not be complete until we touch such a conspicuous phenomenon of the 20th Century life as socialist order, which was established in the U.S.S.R. and other countries which followed it. Socialist order was thought to be a converse of capitalist one as the system governed by the whole of people, based on a non-crisis growth and planned economy.

However, historical experience of the last decades altered opinions on the content, advancement, and future of the socialist order, for it proved to be not an antagonist of the state-monopolist order, but its twin. The state socialist property fully disconnected the immediate producer from means of production, outcome of his labor and surplus product. Planned character was felt in violent invasions into economic processes, in voluntarism and hazardous activity, which has brought the partial destruction of productive force due to collectivization in the U.S.S.R. and 'the great leap' in China.

Socialist experiment did not result from someone's mistake or an evil will; it would never have been established and survived for the most part of the 20th Century without some basis of objective reality, and backing from masses and intellectuals. This experience had its positive role; not only because it proved some possible directions of development and widely spread communist doctrines to be erroneous, but also because some of its methods with regards to social and economic regulation, which it had offered and worked out, proved to be good and were taken up by Japan, Sweden, France and other countries.

The triumph of market. In the transitional period, at the stage of genesis of feudalism, market was thrown back as compared to the level reached by the civilisation of antiquity. Regress was traced to the most extent in Western Europe and other territories which had earlier belonged to the Western Rome Empire, where towns were destroyed or undergone a decline; craft production, trade, and monetary systems were undermined; trade routes which were building up for centuries were broken. But in Byzantium, India, and China, too, the breakdown of trade relations with their antiquity, together with invasions of barbarian tribes, limited the sphere of market. Only barbarian tribes of Central, Northern, Eastern Europe, from the territories of contemporary Russia, passing from semi-natural to feudal relations, took a step forward, having embraced the remains of the ancient culture.

Yet till the period of the mediaeval civilisation market had already regained positions. Its geographic boundaries were pushed forward, embracing almost the entire Europe, most part of Asia and Northern Africa. New trade centres, free towns and their unions, appeared; trade forms were making progress. Promissory notes came into being, old trade relations were restored, and new one emerged.

These achievements were largely exceeded under the pre-industrial civilisation. Commodity exchanges, trade companies, and a network of banks came into existence. International trade (especially with America and India) brought an enormous influx of wealth and provoked 'the revolution of prices' of the 16th Century. Initial capital accumulation, which was going on mainly within trade, created way to its penetration into production and originated capitalist manufactories. Nevertheless, turnover sphere remained home to a newly born capital.

But a real triumph of market came in the industrial epoch, when capital fully permeated production sphere, especially in industry, transformed it by drawing on scientific technologies and swiftly growing market demands. Industrial capital won a leading position, displacing trade and bank capital, but by the end of the 19th Century it merged with the latter two and became the financial capital. The entire society became interlaced with market relations, with a small niche reserved for the family household: the human labor force, delivered of feudal fetters and man's own means of production, became a

main product for sale.

The final period of the second super-cycle of market relations came in the 20th Century, in the period of the sunset of industrial civilisation. The free competition of independent producers gave way to monopolist and later state-monopolistic regulation, while the socialist economy was subject to an open attempt to dismiss market and to make transit to semi-natural economy with preserving some of commodity-money forms. This attempt provoked market crisis, inflationary waves, undermined economic stability, stock-piling, and decline in efficiency of production.

Exchange in products (sale, trade) is the primary and original form of market. At first, it was developing in its simplest: a craftsman or a peasant would sell home-made product. Later between the producer and customer the middleman emerged, a merchant who cornered products and sold them on market, taking on himself additional cost, transportation and sale risks

Permanent sales outlets, shops, specialised in various species of goods, were set open to bring comfort for consumers. In London there were 50-60 shops in 1663, and 300 – 400 by the end of the 17th Century. (9. P.55.) Hawkers, small traders, who delivered small bunches of goods to villages and homes, were vigorous in their quest for buyers.

The restoration of fairs in mediaeval Europe was a large event. Thousands of sellers and buyers gathered there, affairs were concluded, credits were given, festive gatherings on the streets were arranged, with vagrant musicians and singers gave their performance. There were hundreds of fairs in small and large towns. However, starting from the 12th Century, they gave way to wholesale trade: ‘Because of the growth of population, already catastrophic enlargement of towns, and a slow consumption betterment, wholesale trade could be developed only beyond the fairs customs, having arranged itself independently. This autonomic system with its warehouses, barns, storage and packhouses revealed the tendency to take the place of fairs, which were going through their sunset phase, thanks to its regular character, which made always to keep memories of the location of the shop’’. (Ibid. P. 81.)

Exchanges became the ultimate form of trade development. Here large series of homogeneous goods were in trade without being delivered to the place of sale. Exchanges came into being at the beginning of the 15th Century;

first one set up in Brugge in 1409, to be succeeded by these in Antwerp (1460), in Lion (1462), in Amsterdam (1530), in London (1554), in Hamburg (1558), and in Paris in 1563. Traders, or their mediators brokers dealt with trade operations, bill discounting, and insurance bargains.

It was a 'pure' trade, increasingly abstracted from the real goods, with speculative games on rising, or cutting prices. But it was the place for prices to be determined right there, which set standard for the entire world of market.

The two main commodities, labor (labor force) and land, existed under specific conditions of trade and regulation. Trade accounting system was being elaborated. Trade was carried on for the sake of getting trade profit and leveling it to average profit. It also built and shaped structure of demand and through this structure it determined structure of production. Trade reacted swiftly to any change of demand. Thus trade helped to self-regulation of market economy.

Recurrent glut of circulation channels resulted in inability to sell more and destruction of part of the goods. This glut turned into an indispensable sign of regularly returned crisis and trade wars. But mankind has not invented any other method to efficiently exchange millions of different goods made by dozens of millions of producers and needed by hundreds of millions of consumers, and it will hardly do in the visible future. The attempt to replace market exchange with the planned and centralized distribution of goods which had been undertaken in socialist countries, was little success and thus rejected by economic practice.

Money market, together with trade market, was also making an evolutionary way from civilization to civilization, and getting more and more sophisticated. In the early stages of feudalism there were already different money systems helping exchange in goods. Use was taken of precious metals which performed a lot of monetary functions, being a measure of cost; means of exchange; payment; savings (accumulation of wealth); world money. Growth in international trade set off the total expansion of moneychangers who carried out a bank function of a sort. But the mass inflow of silver and gold from America caused the strongest shock in European monetary markets to the effect of devaluation of monetary metals and price rise.

Permanent lack of money for waging wars and meeting the needs of

royal courts and treasuries forced states to conceive a falsification of money and introduce paper money. Mercantilist policy, aimed at preventing the outflow of the gold, however did not brought positive results. State began issuing paper money beyond a measure which would be reasonably determined by mechanisms of money exchange. Thus, inflation was given a start. Functions of money emission and control of money exchange were gradually passed to state banks. These banks began coming into being since the 15th Century (in Barcelona in 1401, in Genoa in 1407, in Amsterdam in 1609, in Venice in 1619, in England in 1694). Initially, they were only operating with deposits and money transfer from one account to another.

After the promissory note was invented, soon followed by the shares and bonds, a specific kind of a market, securities, came into life. Banks and exchanges began making operations with them. The first fond exchanges appeared in Amsterdam in the 17th Century. But it was only in the 19th Century, after joint-stock companies were first set up and issued shares, that stock interactions gained the impressive volume on the market.

Taking into account the degree in the development of credit (both private and state) and of the enormous bank network, one can state that the logic of market evolution caused division into the market: trade market was supplemented with the money, credit, and fond markets. We could also add two specific markets: the manpower market (more exactly the market of labor force) and the market of natural resources, or, more precisely, the market of property rights of natural resources, rights which were sold and mortgaged with the help of mortgage banks. Interaction of these markets formed a complicated, contradictory, and dynamic fabric of economics of the modern society.

Formation of the mechanism of market regulation. Market is in principle a self-regulating pattern of economics for the self-restoration of permanently violated proportions and the possibility to overcome the recurrent crisis which it provides. The value of market lies in this guarantee of preserving of gradually evolving economic genotype and ensuring simple and extended reproduction.

Price serves a main regulator for market economy. It performs several functions. First of all, it is the function of universal measure of production

efficiency both at micro-level (for separate producers) and regional level, and also within national economy and in a scope of international exchange. And it is exactly the basis on which the second, stimulating function of price is built on, for price gives an opportunity to gain super-profits and gain larger market share for those manufacturers who produce goods of better quality and with less expenditures. Price is the result from a compromise between vendors' and consumers' interests; it is a mighty instrument of artificial selection of the strongest parties in economic rivalry for the customer. Price facilitates capital accumulation, ensures expanded production, helps to introduce innovations, and to make progressive shifts in economic structure.

These functions of price were realised differently on various stages of market development in recent 1, 500 years. The split of the market, once united within the framework of the Rome Empire, into a variety of isolated, less developed markets, brought multiple prices spontaneously fixed on different local and regional markets for the same goods. Accidental factors influenced price levels, proportions, and dynamics. In Byzantium, China and India the mechanisms of price which had been formed at previous stages were kept and developed.

The augmentation of exchange operations and growth of local and regional markets brought averaging of cost and prices in wider scopes, and first of all in large towns – craft and trade centers of the forming feudal states. Here a certain, although fluctuating, price level for different goods was going through formation. Mediaeval towns, their markets, shop networks and later fairs served the centers of price self-regulation; the prices were fixed spontaneously, sustaining a minimum of the state influence, but significantly affected by climate and geographical factors, and the existence of natural monopolies. Not only did prices compensate normal expenses for this or that town, but they also turned into profits for producers and merchants which were unequal for different kinds of goods and centers. If small producers wanted just to cover expenses, to raise some money in order to procure goods and pay taxes and duties, then the merchant was stimulated in his activity by the trade profit for the sake of which he undertook expensive and dangerous operations, delivering goods to other towns and nations. Gap in prices and trade profits between different towns and countries helped to move goods,

stimulated cut of expenditures and rise in quality of the goods.

At the next stage, in the period of a free competition, territorial borders for cost and price formation were pushed forward tremendously. In the centers of international trade (Venice, Genoa, Brugge, Antwerp, Lion, and later in London, Paris, Humburg, Leipzig, Moscow, in large towns of the East, in Boston, New-York and others) exchanges determined prices for the main goods. The great geographical discoveries involved America, India, some countries of Africa and South-Eastern Asia into the process of cost and price levelling.

Initially, *cost-type prices* prevailed, reflecting conditions for reproduction of the groups of goods within the region, nation, or the world market. However, establishment of capital in main production industries, providing an amplifier opportunity to re-flow it from one sector to another in the desperate quest for a higher rate of return, gradually led to the formation of the price of production which averaged the rate of profit in different industries and areas of capital use. (In a case of natural monopoly of land, under-surface resources, forests, or water, price included yet another element — duty to owners of natural resources, which may have shaped into differential, absolute, and sometimes monopoly rent). There was a great fraternity of capitalists, in disregard of the sphere where capital worked. That does not mean that the utopia-born principle of total levelling was introduced. One who run his enterprise or venture better, cut costs, and introduced technical innovations, under equal price situations, was rewarded a specific premium for being smart, agile, dodgy, and resourceful, — a premium of super-profit. Cutting prices and thus widening the volume of sales, this capitalist could afford increasing the mass of profit. That stimulated his rivals. In such a way, the mechanism to fight for rise in production efficiency and cutting costs, characteristic of a free market and competitive price setting, was introduced. It became the most powerful leverage for self-regulation of the market economy.

However, technical progress, together with development of large innovations and capital-consuming spheres of heavy industry, required savings which did not fit within the limits of the average rate of profit. The logic of capitalistic reproduction forced to make the second large exception from the general rule of the formation of average profit and production price. Apart of

the natural monopoly-based rent, the price of the monopolized goods came to embrace was now the monopolist super-profit for the goods which consumed most capital. Thus, monopoly price was formed. It was marked by a level of profit which surpassed an average one. But this excess was not unlimited. Competition both inside a single sector, and between sectors, went on, and, what was more important, consumers' demand and a chance for it to be switched over onto other goods kept the price within certain limits. The source for such super-profit was decline of profit rates in non-monopoly industries and redistribution of profits.

Therefore, a transition from cost price to production price, and then to monopoly price, was dictated by the objective need to ensure a proportional economic development and conditions of reproduction under the drastic differences in technical and organic structure of capital. Although monopolies were never too tired to use this mechanism for dictating prices (as long as it stood to reason) and gaining monopoly profits in a volume that surpassed economic needs. The structure of the monopoly price counted in an opportunity to get super-profit at the expense of raising prices, or uncutting them in time, instead of implementing risky and labor-consuming innovations, making use of large inventions, conquering new markets, and reducing costs.

This contradiction became even more manifest during the transition towards the state-monopoly establishing of price in the 20th Century. In order to cover the rapidly growing military expenses, social and ecological expenditures, to support the growing apparatus, it was not enough for the state to draw on traditional income sources, viz. taxes and incomes from bonds sales and the growing state sector in economy. The state actively interfered with processes of establishing price, and supported redistribution process with the help of prices which were becoming increasingly disconnected from costs. Prices turned into a cripple mirror of cost and efficiency.

It may seem more reasonable that all-mighty monopolies must have resisted bureaucratic interference into this sanctuary of market economy, the process of establishing price. But they actively supported and used this interference for their own benefit. After having been accumulated in the budget, taxes and other incomes served as a source for the state military and other orders. That always was a tasty piece of a cake which never failed to

bring super-profits. Backing from the state, from the one hand, consolidated positions of monopolies in their rivalry for domestic and foreign markets. But it also supported farmers and poor population, smoothing social conflicts and promising such a beneficial economic order last forever.

Lord John Meinard Keynes, the outstanding English economist of the 20th Century, laid a theoretical basement for state-monopoly price-making and moderate inflation. He claimed deficit financing to be an instrument for preventing and smoothing aftermaths of economic crises. In another words, state was assumed to take on support (at the expense of growing taxes and budget deficit) for bankrupt enterprises in order to prevent mass unemployment. Keunes considered price rise to be more a reliable method to take part of income from workers, than a direct cut of salary.

By having fully disconnected prices away from costs, the state-monopoly pricing became a crucial factor of distortion of economic structure. It became practically impossible to detect real cost and efficiency of different goods and services, innovations and project decisions, to asceratin shifts in assortments and macroeconomics structure. It was a quasi-market, one of the signs that economic system of the industrial society was aging. That economic order was doomed. In the last quarter of the 20th Century some traits of restoration of a competitive market economy became apparent.

Planned pricing was another form of a state interference in market processes. The need for the Soviet State to interfere with pricing was claimed in 1918, and the Pricing Committee of the Supreme Soviet of the People's Economy was found. They were many essays to hinder the crazy price rise in the economy destroyed by the war and to place obstacles in the way of the wild outburst of speculation. During the years of the military communism such pricing lost any sense, in view that state chose to directly distribute industrial production; inflation was gaining momentum in the black market. But in the NEP years the state pricing was restored again, adjusted to market regularities, aimed to implement the certain pricing policy, and to revive the pre-war proportions of prices.

But soon the interference with pricing and other market mechanisms on a part of party-state bureaucratic apparatus was resumed, together with mass violations into economic processes, openly aimed to undermine market.

These led to the deformation of the market. The planned price-setting was established. Its substance was perhaps best unveiled in the following fragment from the pre-war manual on economy: 'price is a fictive item set up by the plan'. Price levels, proportions, structure, and dynamics were less and less reflected real cost proportions. Prices were turned into a mighty lever to redistribute income to the benefit of the ruling class and state monopolies. The latter are no less dangerous, more uncontrollable, and more powerful, than the capitalistic monopolies.

Domestic prices were isolated from world ones, which practically eliminated the influence of the progressive tendencies of the world market.

It will be unjust to say that the planned pricing had no objective roots and some positive elements, especially under conditions of crisis (for example, in the years of war, in periods of the world crisis of 1929 – 1933 and then in the 70s). It helped to sustain prices against a speculative growth and to supply the vast majority of the population with some goods at moderate prices, when rationing system of distribution was introduced. Price reforms were undertaken periodically, targeted to fill the gap between prices and costs.

Both systems of state-monopoly and planned pricing have lived themselves out. But it does not mean that state pricing regulation should be fully rejected. Now it works in a smoother way as to not to prevent a healthy market competition and at the same time to protect it from monopoly interference.

Together with market self-regulation, a delicate mechanism of market state regulation was shaping and undergoing transformation at different stages of succession and development of civilizations.

Market implies certain rules of the game; without them no good order in exchange, elimination of abuses, or settlement of unnumerable private law disputes are ever possible.

Feudal legal outrages survived for a long time. However, the rules of law which corresponded to the interests of market and these of its agents were in the long run set down in multiple legislative acts related to economic activity. It was not until the beginning of the 19th Century that the most complete system of law, which was fully adequate to the established bourgeoisie industrial society, was formed. It was the Code of Napoleon, which

made the name of the Emperor not less and probably even more immortal than his famous campaigns and battles. Thereafter, the rules of civil (private) law were developed and added by new rules in view of new economic and financial institutions coming into being (such as anti-monopoly law, legal regulation of fond exchanges, registration and operations of joint stock companies). International exchange and development of economic integration helped to improve the international private law and brought to existence a system of legal norms which was supported by the authority of the UNO and its structures, and also international integration unions and economic organizations.

Development of a powerful tax and budget-financial mechanisms was another direction of state regulation of market. One of the most important state tasks is ‘to perform a close or distant control of economic life, to organize turnover, both manifestly or not, in wealth, and especially to grasp a significant part of the national income in order to provide for its own expenses, its administration, or war’. (9. V.3. P. 521.) Use was made of the remedies which proved good, such as coinage and falsification of coins, with setting them at an enforced exchange rate; invention of all sorts of paper money; imposition of elaborate direct or indirect taxes and levies. But these traditional resources income were soon exhausted. Then state debt — a new effective method to withdraw incomes out the sphere of exchange was developed. State enforced rich people to subscribe for loans and issued bonds, some kind of state promissory notes, which guaranteed their owners regular interest payment and final redemption of a loan.

These steps were most persistently taken in England. Historians referred to these measures to transform state loans and set up control over finances as the English financial revolution, which lasted almost a century with small exception (1688 – 1756). That experience was taken over by other bourgeoisie nations which encountered the same difficulties.

State of nations’ finances was reflected in the state budget. At times it was found out that expenditures exceeded incomes, in which case new taxes, loans, and duties were duely conceived; royal farming were introduced, and offices in administration were sold.

Contradiction between state financial system and finances of

enterprises, banks and private money of individuals permanently reproduced itself. By taking on expenses to support some public institutions which were vital for the market, giving orders for armaments and other public spending, the state performed the useful functions for private enterprises which should not have been left unpaid. But systematically the state needs used to go beyond the sound, necessary for reproduction and market regulation limits; taxes and other withdrawals of incomes from business operations or from personal incomes were becoming exuberant. Production, trade and services were made economically unjustified, but aggravated the parasiticism of the state apparatus. Thus many a collisions were provoked, which often brought kings and parliaments to overthrow. The burden of state expenditures became especially apparent and backbreaking in the 20th Century and was one of the causes of state financial crisis, which resulted into less state interference into economic life.

The utmost of this crisis saw socialist countries, where the state enjoyed a practically unlimited right of redistributing incomes and took on itself functions of financing most investments and maintaining social support, to say nothing about unbearable military expenditures. On the one hand, it undermined business initiative and any motivation to improve economic activity or for sounder use of resources, as omnipresent financial bodies would take out the benefits of such activity at any rate. On the other hand, a number of dependents, not only citizens, but also unprofitable enterprises and collective farms grew, as these were sure that they would be never let go bankrupt. Instead, as they knew that for good, they would be eventually given support through income redistribution at the expense of the well doing companies. It was the system of total vertical and horizontal exploitation, of developed custody. Under such conditions, efficiency of reproduction could nothing but to deteriorate.

3.5. Evolution of the social and political system.

Sociopolitical relations, to large extent inherited from previous epochs, underwent deep transformation and passed through several cycles before they reached the current state. Periods of changes in social structure, sharp political conflicts, revolutions, and wars would be succeeded by these of relatively calm and stable development, but it was only a lull before the storm to come. Regularities of socio-political development revealed themselves through historical events. Let us turn our attention from the unbound and tempestuous kaleidoscope of events to try identifying the main stages and tendencies of the period under review.

Sociopolitical cycles. One can identify several super-long (centennial) cycles in the dynamics of socio-political relations of the previous 1, 500 years.

The first cycle embraces approximately 800 years (the middle of the 5th – the middle of the 13th Centuries). For the mediaeval socio-political system it was a period of establishment and domination. This process revealed itself in the two main types. The first one consisted the formation of feudal social forces and political institutions due to the gradual transformation of prior societies (as was the case of Byzantium, China, India) or their destruction (resulted from the fall of the Western Rome Empire and subsequent synthesis with barbarian tribes which lived on or invaded its territory).

Another way was represented by such a formation of the feudal socio-political system which was immediaty based on transformation of tribe communal relations (which however had already undergone a certain evolution at the stages of the Bronze and Iron Ages), and which avoided slavery. This way was more characteristic of peoples of Western Europe, Scandinavia, Baltic region, and Slavic nations. In both cases the genesis of the socio-political system ended into formation of the two poles, that of landlords (suzerains), under the reign of the supreme suzerain, the king, tsar, emperor, khahiph, etc., and that of dependent peasants bonded with land and paying rent; there were also several social layers (estates or casts): craftsmen, traders, worriers, clergy, and people of a free-lance occupation. A peculiarity of the first cycle lied in a strong influence of the church hierarchy (Catholic,

Orthodox, or Muslim) over socio-political and state-judicial institutions. The last stage of this cycle is characterized by the enlarging of the feudal split and separation, abundance of wars, dissolution of some large states which were built up earlier this stage, and the infamous end of the crusades and Mongolian conquests.

The second socio-political cycle covers a shorter period from the middle of the 13th till the middle of the 18th Centuries. This was the period when the feudal socio-political system became spread, and then went through the stages of maturity and crisis. At the end of the period, absolutism was established in many countries (in France, Spain, England, and Russia), and the world empires were restored (the Spain and the Britain ones). On the other hand, this was a time when a strong class of bourgeoisie was under formation (first of all in the sphere of exchange), and when it first claimed political leadership, which was partly reflected in the Netherlands (1566 – 1609) and especially in the England bourgeoisie revolutions. Peasants also made some claims to be considered a political force, brought to despair by feudal requisitions: in 1358 there was Jackeria in France, and in 1381 the uprising of Watt Tyler in England. From 1524 till 1525 peasants' war was going on in Germany, in 1573 it was the turn for Horvatia and Slovakia to witness peasants' uprising. In 1606 —1607 the uprising of Ivan Bolotnikov raged in Russia. The Church was the largest socio-political force of the period, which possessed the wealthiest lands, collected the tenth of all production, fought for leadership against kings, emperors, and inspired chasing adherents of the alien faith.

Innumerable feudal wars brought countries into ruins and destroyed productive forces. Wars acquired a lengthy character: the Hundred Years' War between England and France (1337 – 1453), the Thirty Years' War (1618 – 1648), in which almost all the European powers were involved. The discovery of America and conquest of India provoked a sequence of colonial wars and then skirmishes for re-division of colonies. The fight for establishment of bourgeoisie political leadership and the democratic order was unfolded. The English Bourgeois Revolution of the 17th Century, which was finished by the formation of a parliamentary monarchy, became its herald.

The third super-long socio-political cycle covers a period from the last

quarter of the 18th Century (starting from the War of Independence in North America and the Great French Revolution) till the last quarter of the 20th Century (the crisis of the 70s, which changed the trajectory of socio-political development and manifested the beginning of transitional period towards post-industrial society). Within the framework of the period one can identify the following phases (viz. the long-term socio-political cycles, to much extent similar to Kondratieff's cycles).

1775 — 1830 were the years of the establishment of bourgeoisie political leadership, resulted from the War of Independence and the foundation of the U.S.A., the Great French Revolution and Napoleon's wars.

In 1831 – 1870 capitalist socio-political system were making a fast spread; national states were formed in Italy and Germany, slavery was abolished and the federal state of the U.S.A. consolidated after the victorious Civil war of 1861— 1865; labor movement started evolving (the First International, the Commune of Paris); the bourgeoisie democracy was established in the majority of the Western European countries .

1871 – 1913 was a phase of maturity for bourgeois socio-political order. The marked features of this order were the confrontation between capitalists and wage workers represented by mass parties; the transformation of capitalism into imperialism; the completion of division of world, and the beginning of the fight for its re-division.

1914 – 1945 was a period, when the crisis of the bourgeois socio-political system of the industrial society began, revealing itself in the two world wars, waves of socialist and nation-liberation revolutions, establishing of the totalitarian states in Germany, Italy, Japan, the U.S.S.R., and in a drastic aggravation of social antagonisms.

1946 – 1975 were the years when the crisis of the industrial socio-political system was unfolding and deepening, the two global systems, two military blocks were formed and faced against each other in confrontation, the colonial system was destroyed and dozens of independent states of the 'third world' emerged, a series of local wars happened against the background of the global cold war and armament race which put the world to the brink of nuclear catastrophe. Completion of the period falls onto the middle of the 70s, when tendencies of socio-political development in the both systems began changing

under the conditions of the world crisis and sharp confrontation.

Resulted from the War of Independence in North America and the Great French Revolution a 'clearance' of feudal monarchies in Europe happened. And though it was the coalition of the monarchs that defeated Napoleon, and he himself had been earlier enthroned as an emperor, there was a bourgeois rule behind all these titles and reigns. They reached their ultimate phase in the second half of the 19th Century, when bourgeois democracy, in one form or another, triumphed in most European countries. But in many countries feudal order still prevailed, as in Russia, China, Asia, and South America.

A new balance of social forces was formed. On the first pole there was the bourgeoisie possessed of economic and political power, and aristocracy tied with power through multiple links (landlords, the church hierarchy, court retinue). Wages workers, peasants, craftsmen, and small traders represented the other pole. A middle layer of technical and artistic intelligentsia, employees of state institutions and private enterprises, military were in between. There were declassed elements, lumpens, at the bottom of the society. Proportion of layers was constantly changed, conflicts fired between them, sometimes shaping into a civil war, or a revolution; the series of the latter burst onto Europe in 1848.

Religious wars, the charactersitic trait of the previous stage, became an exception from the rule. But the accelerating process of national formation emphasized international conflicts, wars for setting or pushing forward borders of new-born states, for a dominant position in European and world space. This tendency was illustrated by Napoleon's wars, followed by the wars for unification in Italy and later Germany, the Russian-Turkey war, Crimean war, Franco-Prussian war, Balkan wars, and, finally, the first and the second World Wars.

Contradictions between metropolies and colonies, peoples of colonial and dependent countries sharpened. These contradictions manifested in anti-colonial uprisings, serverely suppressed (the Sipays uprising in India, and the series of uprising in China).

The state-judicial system was evolving to the general direction of bourgeois democracy by two major historical routes: parliamentary republic and constitutional monarchy. Empires, the British, Russian, German, and

Austria-Hungarian set the political tune. But the presidential parliamentary system which was born in the U.S.A. and based on separation of power was gaining political acclaim. The principle of representative body elected by population met an increasing acceptance. Electorate became wider, with electoral rights granted to the poor, women, and young; principles of bourgeois democracy, such as equality before the law; responsibility and elections of legislative power; personal rights and freedoms were laid into judicial systems of developed countries.

The largest events at the beginning of the 20th Century were the February and October revolutions in Russia, as not only did they cause the overthrow of the tsarist autocracy in Russia, the regime which had proved to be completely powerless by that moment, but a bold attempt of bolsheviks to fulfill socialist ideals in a vast country. The soviet power became a political basis of this system which disavowed the bourgeois principle of separation of powers and proclaimed the dictatorship one class (mainly, that of proletariat in union with the poorest peasants). In reality it was the monopoly on the power, which belonged to the party-state elite.

The social structure in the U.S.S.R. was changed drastically. Bourgeois classes and landlords were literally exterminated, some of them emigrated. Resulted from enforced collectivization, the class of smallholders was turned into dependency on party-state bureaucracy, and became bonded to the land which was made 'collective'. Craftsmen were united into cooperatives, small traders were thrown away from the market. The middle stratum, including an enormous mass of employees, technical and artistic intelligentsia, teachers, doctors, were turned into a layer which was entirely depended on Bolshevik authorities, and was kept under intensely focused attention and control of the propaganda and KGB bodies. The society became a specimen of repressive system of barrack socialism, a cartoon of socialist ideas once proclaimed by socialist utopists and the creators of the scientific communism.

Another tendency of the period was establishment of the fascist power, first in Italy, and then in its fullest and most unfolded form in Germany; some years later the similar regime was established in Japan. On the wave of disappointment and desperation, provoked by the deepest world crisis of 1929

– 1933, fascism meant dictatorship of the top of monopolist bourgeoisie and repressive party-state apparatus, it brought forth the slogan of fighting for vital space, re-division of world, and world dominance. These calls could not but provoke counter actions of the largest bourgeois states – France, England, and the U.S.A. At first they tried to use the growing power of fascism against socialism, but later were forced to join Russia in confrontation.

Having tested itself in Spain and Abissinia in September 1939, the Second World War began. Its initial period was characterized by victories of Germany, which conquered almost the entire continental Europe and entered Northern Africa. After the U.S.S.R., Japan, and the U.S.A. entered the war, it embraced practically the whole world. Mankind has never such a blood-shedding slaughter in its history, The war took dozens of millions of human lives, devastated thousands of towns, and inflicted heavy damages to productive forces and cultural heritage. The Second World War ended in the victory of anti-Hitler coalition and the crushing defeat of Germany, Italy and Japan with their satellites.

From 1946 a new and final phase of the socio-political cycle of the industrial society began. The main significance of this phase is that the confrontation between the two world systems was built up. Simultaneously, the third force was formed, resulted from the disintegration of colonial system.

Balance of socio-political forces inside the countries and on the world scene has been changed. If at the previous stage the three centers of the world policy dominated and fought against each other – fascism, socialism, and the countries of the Western democracy, as the latter two allied their forces to crash the former, now the line of confrontation was drawn between two systems, i.e. the capitalist with the U.S. leadership, and the socialist headed by the U.S.S.R.. The latter system comprised European countries of so-called ‘peoples’ democracies’, and then China, Northern Korea, and Vietnam). ‘A neutral strip’ was formed by minor neutral European countries (Switzerland, Sweden, Finland, and Austria). Confrontation between military-political blocks embodied into certain shapes, as the NATO and the Warsaw Pact were founded.

The nuclear armament drive, the cold war, local wars and conflicts sometimes held out to bring mankind to the third World War, which would be

doomed to be a thermonuclear one (the war in North Korea, the Berlin and Caribbean crises). Multiple attempts to reduce the tension and a mighty peace movement helped to avoid the nuclear apocalypse, but the threat of it still was pending.

Socio-political situation inside the countries also changed, as the zone of the bourgeois pattern widened drastically. Democratic regimes firmly established themselves in Italy, Germany, Japan, and in many liberated countries (India and others). However, there were some surviving islands of semi-fascist regimes, but they discarded marginal forms of dictatorship and found themselves in isolation. After Stalin's death the state-party regime was somewhat mitigated, and the mass repressions came to an end (except for the notorious 'big leap' in China). J. Gelbert and other scholars noted an increasing tendency of convergence between the two systems, although denied by orthodox ideologists of the both parties.

In dynamics of the 'fourth level' of the pyramid of society one could discover, besides super-long cycles of civilizations, long-term cycles similar to these of Kondratieff and partially coinciding with them. The first and the last long term cycles in the sequence bear a character of transit between two adjacent civilizations. A predominant socio-political order, comparable to technological and economic order, is apparent in each cycle of middle duration. Nevertheless, this level of the pyramid also lacks monolithic structure and abounds with a variety of orders, while balance between them is constantly changing.

American scientists identify shorter political cycles of middle duration. As early as in the end of the 19th Century Adams wrote of swings of the pendulum in the U.S. political life which he believed to repeat every twelve years. Arthur Schlesinger, Sen., in his work dated 1949 identified eleven cycles of changes in the political course after the Declaration of Independence was adopted; six of them enhanced democracy; five were hindering it. He disapproved the idea of the pendulum swinging between two fixed points. The cycle does not bring the nation to a previous position; if there must be an image, the most fitting one would be 'a spiral with coils reiterating at higher levels and determining a process of accumulating changes'. (56.P.41-43.)

A. M. Schlesinger Jr. gave the following definition of cycle: 'it is a

permanent shift of a focus of the nation's concentration between the efforts of society as a whole and interests of private individuals'. (Ibid. P. 46.) As the duration of a cycle he took the political life of generation which lasted about 30 years, with changing positions to take place every 15 years. 'Each generation as it reaches political maturity, spends first 15 years to challenge the previous generation which has already been at power and has now to defend it. Then the new generation itself comes to the power for 15 years, while its political activity is weakening, and a new growing generation claims to be its successor'. (Ibid. P. 5.)

Thus, one can identify cycles of different duration in sociopolitical sphere. These cycles are always interlaced with technological and economic cycles, and together with them they flow into the general stream of cyclical fluctuations of historical process.

Social stratification of society and its evolution. The mediaeval society inherited from antiquity a rather complicated social structure to be thereafter modified and enriched with social groups which were adequate to the feudal order. While transiting from the late primitive communal and tribal order to feudalism, this process avoided slavery and took the line of increasing social stratification.

The palette of social relations in Middle Ages was exceptionally motley and dynamic.

At the top of the society there was the class of suzerains and landlords, the clergy, military chiefs who were to this or that extent obedient to a king, emperor, or khalif. War was their main occupation, and in order to raise money to wage the war, they had to collect taxes. Suzerains were surrounded by hordes of warriors, servants, and retainues.

At the opposite pole there was the class of dependent peasants, each possessed of a plot of land to feed him and obliged to share with the suzerain a part of the harvest in a form of feudal rent. Peasants set forth soldiers and equipped them with armory. They were subject of the court of feudal justice and carried out many other duties (up to 'the right of first night').

The extent of personal dependency and peasants' taxation varied from country to country in different periods; from comparatively mild forms of matayage to serfdom with the right to sell, to turn into a soldier, or to penalize

a peasant.

In towns (including feudal republics) one could find the proprietary elite (patricians, the supreme administration, landlords, large merchants, heads of craft workshops, judges, bankers, money-lenders), opposed by a numerous layer of free citizens (craftsmen, small merchants, house-owners) and dependent apprentices, servants, slaves, and poppers, who had no right to speak out their opinion. By the end of Middle Ages the classes of bourgeois society, wage-workers and capitalists-entrepreneurs, were coming into existence, but it was rather an exception.

The fact of belonging to one of the religions or sects – Christian (Catholic, Protestant, Orthodox, Anglican, etc.), Moslem (Sunnites, Shiites), Buddhism, Judaism and so on, played a role of great importance in social stratification in Middle Ages. Religious intolerance which brought on multiple conflicts and wars, was the trait characteristic of the mediaeval times.

Establishment and spread of the bourgeois socio-political order in the 16th–19th Centuries caused radical shifts in society's structure. The capitalist class, embracing quite divergent groups, took the top of the social hierarchy. Its core consisted of trade and financial capitalists who accumulated enormous treasures and invested, if saw it beneficial, them into manufactories and factories, agricultural and construction companies. Part of landlords was also presented, for many of them had started their businesses and built manufactories. In such a way, industrial bourgeoisie was going through formation. After the capital-property was separated from the capital-function, a significant layer of rantiers living on property income arose.

The class of landowners (landlords) held their positions for a long time, but gradually was transformed into an element of social hierarchy of the bourgeois order. Exempting a part of surplus value to its benefit as a rent (whether this be land, mine, wood, water, or town), they performed two functions: on the one hand, capitalists, and hence the whole society through higher prices) payed tribute to the parasitical layer of landlords; on the other hand, levying differentiated rent, landowners levelled conditions of competition in different climate zones.

Working class lived on selling its working force, and was not homogeneous either. A small layer of working aristocracy, highly qualified

workers, workshop masters, and trade union leaders, were not that much different from small bourgeoisie, considering properties they possessed. The main masses of workers, trained up to a certain qualification, and living on sale of their working force, were ruthlessly exploited. Semi-proletarians and seasonal workers held some strips of land to reconciled themselves with their low wages. Lumpen-proletarians lived on accidental payments, theft, and beggary.

There was much change in peasantry's features, now including a number of new layers to be identified within it: that of the village bourgeoisie, which, standing contrast to its urban counterpart, continued to be directly related with production; next, the masses of ordinary peasants, small independent holders, who covered some of their requirements at the expense of their own business (and to this group small craftsmen belonged, too); and the poor, proletarians, semi-proletarians, and farm laborers, who supported themselves by selling their working force, but sometimes running a tiny plot of land to cover partially some of their needs in food.

There was quite a notable layer of small town bourgeoisie: craftsmen, small traders, and owners of small restaurants, hotels, hairdressers and other services. They run small businesses, possessed some means of production, lived on sales of goods and services, and paid different taxes; sometimes they hired several permanent or seasonal workers.

It was in the industrial society that the conspicuous and rapidly growing stratum of intellectuals arose, occupied in science and technology (scholars, designers, engineers, agronomists, and technicians), in fine arts (architectures, artists, actors, musicians), or in economics, as they served as managers and employees at enterprises. The majority of them were 'white collars', i.e. intellectual links of industrial machine, living on sales of their qualified working force; partially they were people of free-lance professions, living on fees and patrons' support.

We have also to mention a layer of officials, providing services for the bureaucratic state machine, and working for salary and pensions.

There was an important social layer of the military, mainly officers and generals. Theirs was a specific position in society. Recruited mainly out of aristocracy and bourgeoisie, they were the chief supporters of the governors'

top, but tended to change it every so often, sometimes felling back to an open military dictatorship.

Religious differences survived in the industrial society, but they lost their former importance. At the same time, a role of socioethnic identity increased, especially in periods when national states were going through formation in Europe in the 18th–19th Centuries and, likewise, when nations' liberation movements were gaining strength and scope in the 20th Century.

Social stratification changed most significantly in a socialist version of the late industrial society. Landlords, capitalists, *kulaks* (wealthier peasants), clergymen were not just ruined economically and judicially, but many of them were also exterminated. Working class was proclaimed to be a predominant force, but virtually was turned into a exploited class under the unbound domination of the state-bureaucratic apparatus. The main part of land and means of production was taken away from peasantry as a result of forced collectivization. Peasants were obliged to work in collective farms' fields for a trifling compensation. They provided for themselves by holding subsidiary small plots and kitchen gardens, which were levied by taxes. It was peasantry that chiefly set forth men for the army. The so-called 'in between' layer – intelligentsia – grew in number due to the enormous amount of engineers, designers, scientists, and those engaged in education and culture, but it was practically rightsless and were always under suspicion for rare acts of freethinking. Instead, at the top of the social pyramid a new governing class was formed, that one including party-state administrators and the top of the military and state security bodies. It was the class that, resting on the party-state apparatus and penitentiary bodies, actually was in command of the 'national' and cooperative property. It appropriated surplus product, governed the society, and ruthlessly oppressed resistance and dissidence. All other society layers were equal in their inequality. This order bears some resemblance of the semi-feudal order, of course slightly modified and covered with socialistic phraseology. National differences were ignored to more and more extent; the ruling elite cut out a-new the boundaries between republics as it saw best according to its will, punished entire nations, and sowed seeds of future national and ethnical conflicts.

The political life, state, and law in feudal-capitalistic societies. In

mediaeval society to govern domestic and foreign policy was a main matter of occupation of a royalty (king, tsar, or emperor) and his retinue – ministers and major suzerains. There were no parties as political institutions. Anger of peasants, craftsmen, and citizens was revealed in uprisings that were the most radical form of political struggle of the time; but usually it was just a matter of changing a governor, or some forms of government, or cancelling taxes which clearly stepped beyond reasonable grounds, rather than changing the order.

It was the bourgeois society and the Great Charter of Freedom adopted in England (1215) before political parties first came into existence, and estate representative bodies were formed: the English Parliament (1265), the General States in France (1302), landtags in German principalities (in the end of the 13th Century). Tory and Whig Parties became the first pure political parties in England. But no sooner than the industrial society consolidated were political parties of any significance in political life. Different political movements were already present in the National Convent of France in the 1790s (Jacobins, Girondins, etc.), with many clear traits of political parties. In the 19th Century each class in Europe and America had its own party, although their structure and basic principles of organizations immensely varied.

At any rate, these were chiefly the parliamentary parties. But since the middle of the 19th Century parties of a different type began to appear, representing interests of the oppressed. Such parties, as Blanquists, the Union of Communists, International, anarchists openly meant to overthrow the currently existing order and to build a new society. By the end of the century social democratic parties emerged in many European countries. During revolutions in Russia among active forces there were two social democratic parties (Bolsheviks and Mensheviks), SRs (Socialists-Revolutionaries), Cadets, Octyabrists, etc. The Bolshevik party gained the upper hand, grabbed all levers and instruments of power, and placed under its total command the state apparatus, soviets, trade unions, and youth movements. They helped to organize communist parties in other countries by means of the Communist International. For example, the Communist party of Germany was built on much the same principles.

Such an ultimate monopolization of political life, as was characteristic of the sunset of industrial society, could not fail to come to a crash. At the

same time there are some signs which speak to the effect that the electorate does not trust large bourgeois and social-democratic parties any longer. Mass political parties, together with totalitarian states, for whose formation and functioning they were built up, is coming to the past. In some countries of western democracies the classic two-party system remains; democrats and republicans in the U.S.A., conservatives and laborists in Great Britain.

The state is the core of political power. It rests upon the system of judicial rules, executive bodies, army, machinery of ideological influence, and economic power. The feudal and capitalist civilizations were characterized by a growing role and mighty of state, although the process was going on the whole irregularly.

In the East countries the state traditionally enjoyed unlimited power over personality; if there was someone or something that changed, it was only the names of the ruling dynasties, who had people's destinies fully in their disposal. A similar system was established in Byzantium, although the state power in the period of genesis of feudalism was largely weakened there, mainly owing to permanent barbarian raids and these of early feudal states, and later of crusaders.

The mediaeval state in Europe passed through three stages in its development: 'origination and formation of early feudal state and concomitantly the genesis of feudalism; the second stage, when the feudal state, with already matured feudal relations, lived through the period of feudal split and separation; and the third stage, when under conditions of monetary economics more centralized forms of the feudal state came to life'. (25. V.2. P. 487.)

Kingdoms which were based on barbarian tribal unions were primarily set up on principles of the military democracy, with a strong centralized power of the military chief and a small permanent squad supported by volunteer corps of free community members.

Elements of military democracy were gradually receding to the past, with widening of authority of the supreme ruler (king, prince, emperor); more and more he rested on permanent support from his troops, state apparatus, and judicial rules. The king was made the supreme landowner and a main receiver of the feudal rent. 'The king was gradually gaining a supreme power not

merely in judicial and military matters, but also in politics and administration. Being restrained by the common law at initial stages of early feudal state, the king became now a source of law himself. Records of common law are now supplemented and formed under influence of state legislation and the Roman law... In transiting from barbarian to early feudal state the king became the owner and proprietor of all lands (which earlier were seen as belonging to people)... Thus, the royal power acts as the first large feudal landowner. Under such conditions taxes, collected, as they always were, mainly from peasantry, were shaping into a form of feudal exploitation of peasants. The state was responsible for exercising this sort of exploitation, which everywhere in Europe exceeded one exercised by suzerains'. (Ibid. P. 490, 491.) Religion, especially Christianity, played quite a role in formation of mighty statehood. The royalty sought its support to promote tendencies to centralism. Thus religion heightened its political potential, though sometimes conflicted with secular power.

However, at the next stage, in the period of feudal split and separation centrifugal forces gained upperhand, and centralized states broke up, or continued to hold just a nominal power. 'Number of free towns increased. The blood-shedding struggle for power was started. In any part of the globe the mediaeval society demonstrated a common picture of unstable state formations, whose contours depend on a rough and blood-shedding military power'. (22. P. 118.)

These devastating tendencies could not fail to meet a growing resistance on the part of ordinary masses, as well as clergy and merchantry, which was gaining strength just then. In the 14th –16th Centuries centripetal tendencies once again made up lost grounds to end with the formation of strong states. But it was not the return to early feudal states, but a new coil of the spiral with account of changes which occurred in sociopolitical life of the feudal society. The estate monarchy was the prevailing form of state power of that period, while feudal democracy held many peculiarities. Each estate sent representatives to a representative body (parliament, Estates-General, *zemsky sobor*), where major political questions were discussed, and sometimes monarchs were elected or ousted.

In order to counterbalance the feudal sovereignty, a strong bureaucratic

apparatus was formed, and the centralized army was built up. The state-wide legal system was established, which was much due to the specific doctrine of superiority of the royal power, whereupon he was regarded as a subject of national sovereignty and an ultimate and utmost source of law. The matters of succession to throne were brought to a certain regulated order. The same refers to majorette (transfer of ancestry lands to the elder son in order to avoid their split). Limits were set as to constrain outrages of suzerains with regard to their peasants, and privileges of some free towns were cancelled. That was a step out of the chaos of feudal split towards the regularity of the mature feudal society. National liberation was quite an important motive to support the idea of centralized monarchies; thus was begun Reconquista (the struggle to clean the Pyrenees free from the Arab rule), the war for consolidation of Russian lands, and their liberation from the Golden Horde.

But the tendency to build a strong estate monarchy was not spread everywhere. In Italy the strife between strong towns-republics unfolded, with Venice, Genoa, Florence and others being involved. In Byzantium and some countries of the East the emperor's power continued to dominate, with no political dualism and estates' representative bodies accepted.

Building of absolutist monarchies in most European countries since the late 15th Century was a next step in the developing of statehood. The formation of large national states (France, England, Spain, Rzecz Pospolitaya, the Muscovite state, and the Osman Empire, which vanquished a significant part of South-East Europe after the fall of the Byzantine Empire in 1453), the strengthening of central monarchical power and the weakening of estate representative bodies, were all favorable for the process. After Columbus discovered America and most of its territory was made the colony, Spain turned into the largest global empire of the 16th Century. It extended throughout vast territories in Western Europe and America. Italy and Germany remained a motley political map; absolutism there was of a regional character. According to I. M. Dyakonoff, establishment of such a pattern of organization in the socium as a stable absolutist monarchy which is tending to transform into the national state, is a main diagnostic sign of post-mediaeval society ('absolutist pre-capitalism' is Dyakonoff's term for it). Such organization was fostering formation of national self-awareness and eased balance between the

four classes of post-mediaeval society. (22. P. 153, 155.)

But a period for which the balance of political forces continued was not long. As early as since the 17th Century (in the Netherlands from the second half of the 16th Century) a crisis of absolutism was started under the pressure of consolidated bourgeoisie, which had gained adequate economic force and demanded the adequate place for itself on the political scene. The English Bourgeois Revolution of the middle of the 17th Century delivered a striking blow upon the feudal political order, for it was the first time in history that a king, the symbol of absolutist power, was sentenced to death by Parliament. When restored as the result of Cromwell's wars, monarchy was allowed to be just an ornamental institution. The Great French Revolution was the one that crucially defeated absolutism; the king was executed and the majority of feudal aristocracy was exterminated in wars and repressions. And though under the reign of Napoleon, who proclaimed himself the Emperor, some features of absolutist power were restored, they however had a different social filling, constituting just another form of bourgeois dictatorship.

The Restoration of Bourbons, the union of reactionary monarchic forces in Europe, spasmodic attempts to preserve the tsarist autocracy in Russia by soothing it with liberal reforms, and the uncaused absolutism of the Osman Empire could not stop already a victorious establishment of the new order — the bourgeois democracy. The presidential republic of the U.S.A., the parliament republic of France (after the fall of the monarchy), the constitutional monarchy of England became its specimens.

The bourgeois democracy is reared by acceptance of equality and freedoms for all citizens, lifting of feudal-estate, caste, and other circumscriptions set for certain groups, legal defense of personal and property rights, abolishment of discrimination on racial, national, religious and other identities, granting all citizens who reach a certain age the right to elect and be elected to central, local, and municipal bodies. Freedom of market competition was added with freedom of political rivalry. Separation of powers is another important principle of the bourgeois democracy. The three separated branches are legislative (representative), executive (accountable to parliament) and judicial (judges are independent and obey singularly to the law). Above all, separation of powers was the way to avoid monopolization of power and

dictatorship.

Of course, in different countries these main principles of bourgeois democracy underwent modifying resultant from sharp political struggle, reflecting changes in balance of social and political forces. But all in all it was the top of political evolution, and it was reached at the stage of the maturity of industrial civilization.

Transit towards monopolistic and then state-monopolistic stage of capitalist development entailed the concentration of power in the hands of large bourgeoisie and limiting or reducing to a formality the foundations of bourgeois democracy. Furthermore, under conditions of the nation-wide crisis it provoked the succession of revolutions and establishment of the uncovered dictatorships. Most conspicuously it was manifested in the establishment of totalitarian regimes: fascism in Italy, nazism in Germany, authoritarian regimes of repression originally in the U.S.S.R., and then in most socialist countries and in a number of liberated countries of Latin America, Africa, and Asia. Even taking into account all the differences in ideology and social basis of all these states, it must be accepted that the similarity in their state-judicial system was making them the converse to bourgeois democracy.

A human being in totalitarian political system was brought down to position of a screw in large, all-absorbing state-bureaucratic machine, a subject, and not an actor in the theatre of historical process. Totalitarian state abandons the principle of separation of power.

Power was fully concentrated in the hands of the ruling elite, while the centralization of the state government, together with the militarization of the country, was barely unlimited. Legal outrage reigned, and repressions were commonly practiced. The totalitarian state built on violence and rightlessness of population does not stand for long. Yet in the period of sunset of industrial civilization the countries of the western democracy, too, sustain the tendencies to monopolization power by the ruling elite, strengthening of militarism, and qualification of civil rights and freedoms.

Pitirim Sorokin, the outstanding sociologist, emphasized a low moral and professional level of the ruling political elite: 'Making up a specific cast, the ruling social groups nowadays do not demonstrate a minimum of intelligence, moral and social qualification needed to settle grandiose tasks put

before us'. (47. P. 241.) Having investigated a large volume of historical material, he put forth the firm conclusion that rulers have got a lower morality and intelligence and many times higher a level of criminality than their subjects (Ibid. P. 242 – 243.) Nation-wide crises clearly testify to the fact that most political leaders are unable to realize and settle efficiently sociopolitical problems of a multiplied complexity. That leads to gravier mistakes in politics and deeper losses for a vast majority of population, to aggressiveness and intolerance.

3.6. Changes in the spiritual sphere

Accumulated knowledge, cultural achievements, and religious beliefs come down from generation to generation, modifying as they do so. One thousand five hundred years after the collapse of the Roman Empire was the period which vastly enriched spiritual world, caused revolutions in science, culture, and education, and saw the eminences of the human thought, which sometimes were even scaring and dangerous.

Growth of scientific understanding. Achievements of scientific thought of antiquity formed a foundation for further evolution of knowledge. The downfall of intellectual activity during transitional period and the domination of Scholasticism in Middle Ages were succeeded by accumulation of prerequisites for the great scientific revolution to burst in the middle of the 15th– the late 17th Centuries. Science evolved in three separated, but interacting streams, whose synthesis formed material for the modern scientific thinking. Following scientific overturns merely transfigured some of its links.

The first stream was the rise of scientific thought in the East. ‘Within 500 years which followed since Rome was crashed the center of scientific life was relocated to the East of the Euphrates river. Developments in science were going on in India, which turned of a greatest importance for the entire world’. (7. P. 156 – 157)

Scientists of the Arab world took up achievements of the Greek (first of all that of Plato and Aristotle), Indian, and Chinese science. Their synthesis became a basis for the swift rise which the Arab science saw in the 8th — 9th Centuries. Among the most eminent scientists of that time there were al-Kwarizmi (the late 8th – the early 9th Century); al-Biruni and Ibn Sina (Avicenna) who lived in the late 10th and the first half of the 11th Centuries. Their expertise was really encyclopaedic. Al-Kwarizmi was a mathematician, astronomer, geographer, and the founder of algebra. Al-Biruni was the author of the outstanding works in astronomy, geodesy, physics, mathematics, botany, geographic, philosophy, history, and ethnography. He calculated the parameters of the Earth with a great exactness, constructed a globe for the first time in history, made a suggestion that the Earth rotated around the Sun, and

built trigonometrical tables. Ibn Sina made a great contribution to development of philosophy and medicine. Science of the Arab East served an impulse that later gave rise to the scientific knowledge in Europe.

The second stream was the Byzantine science, which was a direct heir of the science of the Greek and Roman world. The official religion of the time, Christianity, left its traces on the entire scientific thought of Middle Ages in Europe, trying to imprint church dogmata to scientific thinking. The concept of the world history as based on the Bible came to change the antique theory of cyclical historical development. Now the beginning of history is dated from the creation of the world. However, traditions of Plato and Aristotle were continued; there was the school of neoplatonic philosophers. Much attention was paid to applied branches of knowledge which were related directly with medicine, agriculture, craft, construction and military. The tendency to encyclopaedism was developing, too, similar to that one of the East. Leo the Mathematician (the end of the 8th – the 60s of the 9th Century) was proficient in mathematics, physics, mechanics, philosophy, astronomy, and medicine. He was the first to use letters as arithmetic symbols. Michael Psellus (1018 – 1096/97) was a scientist-enciclopaedist, also engaged in philosophy. He founded the foundations of logic. Nikifor Grigora (1295 – 1360) developed ideas of Aristotle and offered the reform of calendar, which anticipated the Gregorian one. Being imprisoned in the monastery he wrote a large historical work 'Ramean history'. George Plython (1360 – 1452) was a Plato's admirer and developed his ideas in the philosophical religious treatise 'Laws'; he also managed to restore the Platonic Academy in Florence.

No illustrious names or discoveries comparable to the achievements of the Greek scientific thought are to be found in the Byzantine science. But it is valuable that these discoveries were preserved and then passed to descendants to be later accepted in many countries of Southern Europe, the Old Rus, and Caucasus.

The third stream was the formation of the Western European science, which adopted the basis of the antique and eastern scientific thought, but in many aspects carved its own ways in studies, laid a foundation to the scientific heritage of the mediaeval Europe that was formed under a strong influence of the Christian outlook. The Catholic Church never hesitated to murder

scientists, whose ideas looked heretical by its judgment. Nevertheless, scientific thought forced a way through for itself.

Isidore of Seville (570 – 630), a scientist of Visigothic Spain, was perhaps the first encyclopaedist of Middle Ages. His main 20-volume work ‘Etymologies, or the Elements’ housed a comprehensive world of knowledge of that time: grammar, rhetoric, dialectics, geometry, chemistry, astronomy. It helped to bring the heritage of the antique to those of mediaeval scholars who were not acquainted with works of Greek and Roman scientists.

The attempt to make synthesis between the doctrine of Aristotle, which was rapidly gaining acceptance among scientists, the Catholic theology and Scholasticism was a characteristic tendency of the mediaeval science in the 11th – 12th Centuries. Thomas Aquinas (1225/26 – 1274) made a most successful attempt. In his works he tried to reconcile faith and knowledge; he recognized value of understanding and the human mind, but gave priority to the church dogmata. Nevertheless, natural and applied sciences, which were out of the church control, could be developed. Leonardo Pisano Fibonacci introduced the Arab algebra and the Hindu enumeration. His ‘A Book of Counting’ (1202) promoted development of mathematics and helped to its practical application in engineering and construction.

The great scientific revolution of the middle of the 15th – the late 17th Centuries became a turning point in development of scientific understanding. The time came to form a new scientific picture of the world, free of the church dogmata, based on a generalization of accumulated facts, that would lay the groundwork for the industrial transformation of the world in the centuries to come. Number of scientific discoveries and technical inventions was growing tremendously.

The achievements of natural sciences at this stage of scientific revolution were really amazing. ‘Different branches of physics – mechanics, statics, optics, and hydraulics made a colossal step forward. Mathematics had got further development. Logarithms and analytical geometry were invented, trigonometry and spherical geometry were further perfected. Scientists worked on analysis of infinitesimals. Accumulation of expertise was going on in chemistry, biology, zoology, geology, and mineralogy. Geographical knowledge widened; study of climate, winds, and sea currents started;

oceanography came into existence, and cartography was improved. First botanical gardens helped to many successes of botany; initially they appeared in Italy, and then became spread over other European countries. Achievements of medicine, physics, and human anatomy were indisputable. Study of nature in depth, based on observation and experiment caused a new qualitative leap in understanding, up to the reason in favor of some strict natural regularity, which could be calculated by means of mathematics. (25. V.3. P.449.) The scientific discoveries of Leonardo da Vinci in hydraulics and mechanics, the heliocentric system of Nicolaus Copernicus, the achievements of Tycho Brahe, Iohannes Kepler, and Galileo Galilei in astronomy became the top of that scientific revolution.

Sir Isaac Newton (1643 – 1727) was the greatest scientist of that period who became the founder of classical physics and opened the law of universal gravity. He also completed the turnover in astronomy, which was started by Copernicus, elaborated differential and integral calculation, made several important discoveries in optics, and built the first refraction telescope. Each of these discoveries turned into a basis upon for development of scientific discipline.

Progress went forward in social sciences, as well. Francis Bacon (1561 – 1626), the prominent philosopher of this time claimed experiment and knowledge, gained from experience, to be the basis of scientific generalization. He was the father of the English materialism and worked out a program of scientific development which would have to lend the human being a power over forces of nature. In his utopia work 'New Atlantis' he placed a leading role in ideal society with a union of scientists who had to help citizens of the island of Bensalem, lost in the Atlantic ocean, in obtaining amazingly high temperatures, utilising solar energy, forecasting weather, growing unusual harvests, healing diseases, sending sound over enormous distance, and using the flying apparatus.

Rene Descartes (1596 – 1650), who stood for rationalism, became another founder of the new philosophy; he also made a large contribution into development of mathematics, employed resources of analytical geometry and variable quantity. He offered a cosmological theory, according to which the structure of the Solar system had resulted from a long evolution.

Scientific societies were set up, such as The Royal Society in London (1662) and the French Royal Academy of Sciences (1666). Some attempts to build similar societies were undertaken in Italy, but they appeared to be of short living. Academies offered an ideal opportunity to combine inter-branch studies; they enjoyed backing from the state.

The successes of industry facilitated development of mechanics and pneumatics. Microscope, barometer, air pump, chronometer, telescope, and other scientific instruments appeared.

Thus in the 15th – 17th Centuries modern science originated as a result of the Great Scientific Revolution. Explaining the phenomenon, J. Bernal, the largest historian of science, writes: ‘The birth of science follows immediately after the birth of capitalism. The same spirit that destroyed the set forms of feudalism and church, had done away with slavery and conservative tradition of the classical world. To sever tradition in science, as well as in politics, meant to liberate human inventiveness and to let it penetrate into areas from which it had been previously kept away.

In spite of all the diversity in studies, the science of the 17th Century had that specific unification of faces, ideas, and application, which determined its further development. First of all, a scientist of the 17th Century could embrace all the branches of science of his time and create original works in each of them... That universality permitted scientists, or ‘virtuosos’ of the 17th Century to obtain a wider picture of the world than their predecessors ever managed to assemble. Secondly, a crucial characteristic of scientific unity was related with the leading idea and methodology which were based on mathematics. The third and the most significant unifying principle of the new science was the scholars’ interest to the challenging technical problems of their time’. (7. P. 269.)

Due to this unity unfolded a beneficial process of differentiation in science and formation of branches of new knowledge, fundamental and applied sciences together with concomitant professional division of labor and specialization of researchers.

Let us consider [Table 5](#) which illustrates the long-term scientific cycles of the industrial society of the 18th–20th Centuries.

Table 5. The long term scientific cycles in the 18th – 20th Centuries

	Cycles				
	1 st	2 nd	3 rd	4 th	5 th
Chronological framework	1691 – 1760	1761 – 1830	1831 – 1894	1895 – 1944	1945 - 1975
Continuation	70	70	64	50	31
Leading countries	England, France, Russia, Sweden	England, France, Germany, Russia	Germany, England, France, The USA, Russia	Russia, the USA, France, England	The USA, The USSR, Japan, EU
Key scientific areas	Electricity, chemistry, botanics, philosophy	Technical sciences, chemistry, political economics	Biology, chemistry, electricity, economics	Physics, genetics, chemistry, biology	Nuclear physics, micro-electronics, cybernetics
The main scientific discoveries	Electricity theory (Gray, Franklin) The French Encyclopedia	Cosmological theories of Kant-Laplace, combustion theory of Lavoisier	Darwin's theory of evolution, cell theory, electro-magnetic theory	Relativity theory, quantum theory, atomic structure, genetics	New elementary particles, lasers
Forms of organized science	Spread of academies, universities	'The moon society' of the English scientists, the Royal Institute	The British association, scientific societies, scientific-research laboratories	Scientific institutions and laboratories	State scientific centers, scientific-industrial units, large institutes

The first cycle (1691 – 1760) was characterized by a relative calm after the revolutionary scientific storm. It was a process, when discoveries of the revolutionary epoch were vigorously accepted and spread, it was a scrupulous work of building technical premises of the industrial revolution that later became a test field for practical use of new knowledge. Technical sciences,

invention of machines and technological processes gained the priority. T. Severy invented a steam pump, Debré offered technology for iron smelting, and Newcomen built a steam machine.

The theory of electricity was swiftly evolved in physics: the famous experiments with an 'animal electricity' were conducted by L. Galvani. Taking advantage of them, A. Volta invented a galvanic element and condenser, Yu. V. Petrov discovered the Volta's arch, X. K. Ertaev opened electro-magnetism, Duffey found out two kinds of electricity, and B. Franklin studied positive and negative electricity and invented lightning conductor.

The studies of the great Russian mathematician Leonard Euler, 'the king of mathematicians', belong to the same time; he also worked in mechanics, physics, and astronomy; we also have to mention discoveries of S. Gay-Lussac in the gas chemistry, the detection of the carbon dioxide by S. Black, and the general classification of plants, animals, and minerals undertaken by C. Linnaeus.

Works of Michael Lomonosov became the summit of studies in many scientific branches; he made discoveries in optics, electricity, chemistry, and other fields. He proved the law of conservation of substance and motion and formulated it in the following way: 'All changes that we come across in nature occur in such a way that if anything is added to something, it will be subtracted from somewhere else. Thus, the quantity of substance, added to a body, is lost by some other body... As this is the universal law of nature, it holds true for regularities of motion: a body which stimulates another one to move by pushing it, loses as much from its own movement, as was passed to the one it removed. (27. P. 261.)

Animation was apparent in social sciences, as well. By reasoning out the achievements of the Great Scientific Revolution, philosophers of this time moulded ideological pre-requisites for the French Revolution. It was in this time that John Lock came up with his ideas of freedom, property, and tolerance; he advocated the supremacy of the constitutional law. David Hume with his skepticism and agnosticism stressed the relativity of any knowledge and religious dogmas and granted much importance to competition as a way to decrease profit and interest rate. Giambattista Vico carried out historical studies and supported the idea of cyclical development of the human

society. Charles-Louis Montesquieu, Jan-Jaques Rousseau came down on the feudal society and the domination of church with a crashing criticism; they called for return to the natural order, which they called the 'social agreement' between people.

Achievements of scientific thought were generalized in 'Encyclopedia, or Classified Dictionary of Sciences, Arts and Trades'. Its 28 volumes were released in 1751 – 1772; D. Diderot (1713 – 1784) and d'Alembert (1713 – 1783) arranged its publication.

The second long-term cycle in development of science (1761 – 1830) coincided in time with the industrial revolution, which imprinted its marks on a structure of science, pace of development, and terms within which scientific results should have been practically implemented.

The industrial revolution and establishment of the capitalist market mechanism formed needs for scientific knowledge and their practical application. A row of the largest technical inventions of the time included cotton machines of J. Hargreaves, Sir R. Arkwright, and S. Crompton, the machine building plant in the town of Bolton, the steam rotation machine of the talented Scottish inventor James Watt who designed the engine capable of setting machines working with a regular speed even under drastically changing loads (the device itself is an example of automated steam switch), the high pressure engine of R. Trevithick, mechanical looms of Sir J. Whitworth, and the invention of the steam locomotive by George Stephenson.

Chemistry becomes one of the leaders in natural sciences. Joseph Priestly opened oxygen in 1774, which turned to be a revolution in gas chemistry. Antoine L. Lavoisier disproved the dominating theory of phlogiston as a main substance for combustion and demonstrated the process to be a merge of burning substances with oxygen. He also built up a classification of chemical joints; laid groundwork for thermo-chemistry; proved that water was consisted of oxygen and hydrogen, and performed a synthesis of water out of these gases. Lavoisier's ideas were developed by John Dalton, English chemists and physicists, who measured the pressure of gas mixture, introduced the notion of 'atomic weight', and offered the foundation for one of the main laws of chemistry: the law of divisible proportions between elements in combination.

Fundamental studies in astronomy and mathematics were developed. Pierre Simon Laplace, the French astronomer and physicist, laid the foundation for the mathematical theory of probability and measured speed of sound spread in the air. In his five-volume 'Treatise on Celestial Mechanics' Laplace proved the stability of the Universe and substantiated the theory of its natural genesis out of the initial nebula. He evolved and detailed the cosmological theory of Emanuel Kant about the genesis of sun and planets out of rotating dispersed substance; Kant himself reasoned that the Solar system is doomed for the inevitable death.

Jean-Baptiste Lamarck continued the achievements in biology of the previous period. To the contrast with Linneus who draw on the assumption of unchangeable character of the plant and animal worlds, Lamarck proposed that this world is permanently influenced, as it evolves, by environmental changes (climate, food, heat, light, etc.). This evolution must lead to changes in heredity, which are transmitted from generation to generation, gradually accumulating and eventually resulting in emerge of new species.

During the industrial revolution technical sciences were going through the stormy development. Initially, practitioners – skillful workers, mechanics, and then engineers, led the way to progress. The formation of the technical sciences started from gradual accumulation of knowledge, practical experience, empirical application of some natural scientific data, and only after that, based on a theoretical generalization of industrial experience, the fundamental basis of technical sciences was introduced step by step (theory of machines and mechanisms, metallurgy, mining, chemical industry and so on.)

Political economics occupied the first place in social sciences, pushed by a need to find theoretical explanation to the mechanism of capitalist market system. Adam Smith, a Scot economist and philosopher, laid a milestone into the building blocks of this science. In his work 'Inquiry into the nature and causes of the Wealth of Nations' (1776) he developed the basis of labor cost theory.

G. W. F. Hegel was the most outstanding philosopher of this time. He proceed form the assumption of primacy of spirit (the absolute idea) and derivative character of nature and substance, which only embodied self-development of the absolute idea. The main scientific credit of Hegel was the

creation of his dialectical method, which considers self-movement of nature, society, and thinking, based on their immanent contradictions. Ludwig Feurbach, a materialist, a metaphysicist, held the opposite opinion, as he gave the primacy to existence, and not to thinking.

Exacerbated social contradictions incited utopic socialist ideas to be found in the works of Henri de Saint-Simon, Charles Fourier, and Robert Owen. The latter even undertook the failed attempts as to fulfill socialist ideas in practice.

To counterbalance official scientific societies – academies of science which were supported by monarchs, so-called dissidents' academies were founded, 'The Moon Society' in Birmingham, and the Royal Institute in England (1799).

In the period of the third long-term scientific cycle (1831 – 1894) biology, theory of electricity, chemistry, and other social sciences grasped leadership.

The theory of evolution offered by Charles Darwin turned into the central event in the development of biology. Having collected the tremendous material of facts in the course of his journey on board 'the Beagle', Darwin was elaborating his theory and studying literature in 23 years before he published his main book 'On the origin of Species by means of Natural Selection, or the Preservation of Favorite Races in the Struggle for Life'. The book provoked an explosion of passions and outcry, especially Darwin's position on proportions between heredity, variability, and selection, and detecting the human origin out of primates.

Darwin's discovery was prepared by works of dozens and hundreds of investigators in botany, zoology, and theory of evolution. However, it brought about a revolutionary overturn into mental outlook concerning origins of life and mechanism of its development on the Earth, leaving no place to the idea of the divine creation of the world.

The monk Gregor Mendel formulated the main law of genetics, making experiments with natural reproduction of pea. He discovered initial elements of heredity, genes, which pass from generation to generation with a regular succession. Schleiden and Schwann discovered how the cell structure and evolution of organisms, thus enabling Karl Ernst von Baer to formulate

the fundamentals of a new science – embryology.

The triumph of biology also expressed itself in the discovery of microbes by the chemist Louis Pasteur and formation of a new branch of science, microbiology, which found a wide application in stock raising and medicine. These discoveries turned Pasteur into a forerunner of biochemical revolution of the 20th Century.

Major successes were achieved by developments in chemistry, especially its organic sphere. Resulted from studies of Duma and von Liebig, new opportunities of production and use of different chemical substances and their combinations were discovered. The great discovery of Dmitry Mendeleev, his periodical classification of chemical elements (1869), permitted to embrace all the elements, as yet known by the science, into a universal system, to stress differences in their composition, regularity of periodical lines (peculiar cycles in the composition of the substance) and even foretell the properties of elements yet unknown to mankind. Mendeleev's discovery confirmed once again the great prognostic power of a really scientific knowledge for the elements which he reasoned to exist were found later.

In physics the theory electricity was the key branch of research. In 1831 M. Faraday opened the dynamic relation between electricity and magnetism, that later became a basis for the electro-magnetic theory. J. Maxwell proved that the theory was true by employing mathematical methods. In 1888 H. Hertz demonstrated the possibility of sending electro-magnetic waves into the air, which later became the basis of radio-communication. Based on these discoveries, telegraph and, later the century, telephone and radio were invented; the dynamo-machine was built; in 1872 Lodygin invented lamps of incandescence. Edison constructed the electrical power station with a far-flung network distributing electricity in 1881. In such a way the fundamentals of electrical technology and basis for electrification of production and everyday life were laid.

The sharp demand in metals required invention of some new and more efficient methods of steel smelting (H. Bessemer and S. Thomas), deeper expertise in geology and mining, and development of other technical sciences.

Due to these developments, natural sciences were formed into a system

by the late 19th Century, and a firm groundwork for experimental works and practical application of theoretical studies was built.

The scope of transformations was equally impressive in social sciences and particularly in the field of economic theory, which gained a key importance for the mature capitalist society.

The publication of K. Marx's 'Capital' became the greatest event in this field. He added the cost theory with the theory on surplus cost, and the variety of forms of its revelation were brought out (profit, rent, interest, business income, trade profit, etc). He also studied rigorously elaborate mechanisms of credit, money turnover, financial regulation, formation and distribution of land rent, capital circulation and turnover.

Other schools of economics entered upon polemics against Marxism, giving shape to separate branches of the economic theory. We should first of all mention the Austrian school (K. Menger, A. Bem-Bawerck, F. Viser), who concentrated on studying consumer cost of goods and their ultimate usefulness; the Cambridge school of Great Britain was famous, too; its founder A. Marshall in his book 'The Principles of Political Economics' (1890) treated the theory of price, structure of price, and factors of demand; there was the so-called Mathematical school (L. Valras, V. Pareto, N. Jevons and others), which laid the basis for use of mathematical methods in economic studies.

Philosophy witnessed a number of different schools and branches growing swiftly. At the same time that the Marxist philosophy was developed, there were such schools as the vulgar materialism, (L. Buchner, Fogt, J. Moleschott), positivism (A. Komte, J. S Mill, G. Spencer), neo-kantism, neo-hegelianism, intuitionism, etc.

The fourth long-term scientific cycle covers the time which is near to us (1895 – 1944). The beginning of the cycle coincided with the scientific revolution which made an overturn in natural sciences and formed a new picture of the world. Physics proved to be the leader of this scientific revolution. Beginning from 1895 – 1896, when roentgen rays and radioactivity were opened, the world saw the succession of major achievements in physics. M. Planck created his quantum theory in 1900, A. Einstein gave birth to the special and general theory of relativity, E. Rutherford and N. Bohr constructed

the models of atomic structure in 1913. The second wave of the scientific revolution, which fell on the time period between the two World Wars, brought the theory L. De Broglie –E. Schrodinger, a new quantum theory of Rutherford (1929), the discovery of neutron (1932), positron, and meson (1935), and division of atomic core (1938). The amazing successes of the nuclear physics formed foundations for the oncoming nuclear era.

Development of biological sciences led to the discovery of ferments, vitamins, and anti-biotics, unveiled the mechanism regulating metabolism in organism and biosphere, and formed three theories of the origins of life. N. I. Vavilov was the first to provide classification of plants with a scientific foundation. The development of genetics gained momentum. I. P. Pavlov's teaching of reflex and regulation of high nervous activity was the greatest scientific contribution of the time.

Biological sciences boasted successful developments in different areas. Many achievements which then were entered into agricultural practice, industry, and medicine, formed kernels of the future sectors of industries (vitamin, microbiological), new fields in medicine and pharmacology, and development of medicine machine building.

In technical sciences new ways of production, transformation, and use of electrical energy were utilized in fresh methods of communication and information traffic (radio and television), chemical processes, everyday life, and medicine (roentgen diagnostics). The theory of machines and mechanisms was added by new sectors related to aircraft (largely due to the air dynamics of N. G. Zhukovsky), use of combustion engines in cars, tractors, tanks, and planes.

The accelerating spread and development of Marxism became the prevailing tendency in social sciences of this period. The economical theory of Marxism was farther developed in works of V. I. Lenin; there were studies of peculiarities in capitalist process in agricultural type of economy; the traits of a new type of capitalism (imperialism) were brought out; theories of understanding and state within the Marxist approach were evolved. Among western Marxists, we should emphasize the works of Karl Kautsky, E. Bernstein, and R. Luxembourg. More Marxists theoreticians joined the sharp confrontation between between different scientific schools and ideological

trends. The line was drawn by I. V. Stalin and his faithful adherents in social sciences at a vulgar simplification of Marxism. At the same time, the first third of the 20th Century was marked by the events of fundamental significance for the sociological science, as no doubt were the works of M. M. Kovalevsky, P. A. Sorokin, and N. D. Kondratieff. The latter laid the ground for the theory of 'long cycles in state of market'. A. A. Bogdanov brought out the theory of so-called systemised approach in his work 'Tectologia'; N. I. Bukharin studied state of economy under transitional period. Russia of the 10s — 20s years firmly held leadership in social sciences. However, outstanding scientists were murdered or exiled out of the country in the years of the totalitarian regime.

In western countries further developed were mostly those fields of social sciences that had been formed at the previous stage. In philosophy, subjective-idealistic schools evolved, such as intuitivism, machism, neo-hegelianism, neo-positivism, and existentialism. The prominent philosophers of this time were Mach, Avenarius, Russell, and Sartre.

The work of J.M. Keynes 'The General Theory of Employment, Interest and Money' (1936) became the largest event in economics. The author worked out a new theoretical approach towards inflation, unemployment, anti-crisis measures, and deficit financing. He also made out arguements for enlarging state interference into processes of reproduction and monetary circulation. Keynes's conception became a scientific basis for the state-monopoly capitalism for decades. A. Aftalion and J. B. Clarck researched interrelations in dynamics of income, demand, and offer. The methods of inter branches balance in economic and mathematical analysis gained ground, especially presented in the works by V. V. Leontiev and L. V. Kantorovich.

The fifth long-term scientific cycle developed in the post-war period and reached culmination in the 50s – 60s years. More than its predecessor, it was focused on applied methods and left opprotunity to learn throughly what had been accumulated in the fundamental breakthrough of the past years. This process made up the main content of the STR which just began to unfold. It was destined to introduce a great many of the high-tech novelties into production, to build up some new directions in technologies (electronics, laser machinery, nuclear energy, space science, herbicides, the making of synthesised fibres and plastics, etc.). The state's main concern was now with

science. The expenditures for scientists and scientific studies grew increasingly. However, by the end of the 60s already came a growing awareness of the fact that the breakthrough had been exhausted, as new discoveries and inventions often appeared to be supplementary and particular. Pre-requisites of a global crisis in science were getting ripe; they detected themselves in a full range later in the following decades.

The undisputable priority was held by exploration of atom. The researches in this field led to the discovery of new elementary particles, quarks, and the building of powerful accelerators — synchrotrons. They brought about a revolution in the military sector, which now gained access to nuclear and hydrogen weaponry, and later on in the energy sector as they helped to accelerate construction of nuclear power stations.

A new direction in physics, the quantum electronics, emerged to turn into a theoretical foundation for developing a radically new method of transforming and using energy with the help of laser technology.

Achievements of radio-electronics and cybernetics resulted into construction of electronic computing machines, which was a technical basis of automated management systems and information processing.

In space there was a bright manifestation of a new qualitative level in synthesising natural sciences with technical sciences and fields of technology: mathematics, space science, management theory, material technologies and metallurgy, construction of instruments and appliances, optics, rocket technologies, space biology, medicine and geology, astronomy etc.

The general theory of chemistry and the chemistry of minerals, metals, and alloys chemistry were developed in accelerating pace; new substances were synthesized to be further put into use for production of polymers, synthetic fibres and plastics.

The building of a rich variety of synthesised substances with fixed qualities, complex artificial fertilizers, herbicides, and pesticides became one of the elements of the 'green revolution' in agriculture and contributed to the rocketing development of chemical technologies.

Applied chemistry offered opportunities for the mass production of mineral fertilizers, plastics, thermosetting resin, man-made fibres, deep oil processing, electrochemical decomposition in substance, and microbiology.

Needs of the vigorously developing economy brought on the real overturns in metallurgy, machine building, applied chemistry, survey, extraction and concentration of mineral resources. The introduction of entirely new machinery and technological processes was launched by such major achievements of technical sciences as non-stop steel pouring technology, geophysical and geo-chemical methods in surveying mineral resources, geotechnologies in extracting deposits, and low-waste, or non-waste, technologies in processing of raw materials).

Theories of economic growth were developed (eg. these of A. Hansen, P. Samuelson and others). J. Gelbrate conducted rich studies in mechanism of state regulation of economy and its structural shifts.

In western countries there was the large advancement in various fields of sociology (much owing to the contribution made by Pitirim Sorokin) and social psychology.

The integration of science and technology in a united stream of STR had both positive and negative aspects. The positive one is revealed in the fact that the growth of innovations and putting scientific achievements into practical use gathered speed, a number of scientific industrial complexes, associations, concerns, etc., multiplied, and the follow-through of a new idea from the moment of its origins towards its final implementation shortened. A negative side was clear in the fact that due to the merger between science and production the former was more and more losing its independence and a critical, revolutionary spirit, as it meekly fulfilled orders of the aging and obsolete production. It strengthened conservatism and sluggishness in some areas of science, especially in its applied sphere, and hindered a next in turn scientific and technological overturn.

State control and militarization of science reached an enormous scale, largely because of grandiose spendings for fundamental, survey, and military studies which were covered mainly from a state budget.

A range and structure of scientific studies in this or that area were becoming increasingly dependant on priorities set by the state and bureaucrats' outrage, while the state always kept its priority with constructing means of mass annihilation of yet a greater and more destructing power. The cancer tumor of militarism was eating away at science. Best minds and equipment

were assigned into this area, while other spheres of science and technology, which served directly to supply human needs, were being pushed aside. Only Japan managed to avoid such a disproportion, where a maximum share of military expenditures is limited by the law (it is not allowed to exceed 1 per cent of the GDP). By the way, it was perhaps due to this fact that determined this country's leadership in the world market of home appliances in the long run.

The culture of the mediaeval industrial epoch: rises and falls. The culture of the modern world has been reared by the four mighty sources: the Byzantine culture, which had accepted and developed the cultural heritage of Greeks and Romans, and greatly influenced the spiritual world of Old Rus; the culture of Western Europe, which was a synthesized combination of the imaginative universe of barbarian tribal culture and the cultural treasury of the Roman Empire; the multi-structured and abundant culture of East, chiefly that of China, India, and Arab countries; ancient and very different culture of the New World, which was discovered in the 15th Century.

'In the mediaeval Europe cultural development of different regions was uneven and bore touches of a great many of peculiarities. Thus, the 10th – 11th Centuries, for example, were marked by a brilliant flowering of the culture of Kiev Rus, while for the 12th – 13th Centuries the leadership passed to the continental part of Western Europe with France in the head. Since the second half of the 16th Century Italy set the tune for the cultural process, as the Renaissance which was destined to present the world with splendid achievements of the human genius, was gaining its might'. (25. V.2. P. 593.) In the 16th – 17th Centuries the achievements of humanistic Renaissance became spread practically everywhere in Europe, materializing in the beautiful masterpieces of art in Spain, the Netherlands, and France. By the 18th – 19th Centuries secular culture gradually liberated itself from the religious canons and gained the upperhand. Western Europe, a hybrid mixture of its representatives — North America, and Russia with its rich culture which reached the culmination in the 19th Century were successively the epicenters of the secular culture. The increased industrialization and unification of mass culture, the U.S. leadership in the process, were characteristic of the 20th Century. In the second half of the Century there were signs testifying to a

recovery of the Eastern culture previously undergoing the downfall (in India, Japan, China, and countries of South-Eastern Asia).

One can identify three super long-term (civilizational) cycles of cultural dynamics in the framework of the super-cycle which lasted for 1.5 thousand years.

The Byzantine culture was perhaps the brightest one during *the formation of Mediaeval civilization*.

The Byzantine culture, formed, as it was, under the crucial influence of Christianity, was inspired by the goal of affecting believers' feelings with images of art and architectural style. This craving was brightly reflected in the Church of Hagia Sophia in Constantinople, built in 523 – 537 by architects Isidore of Miletus and Anthemius of Tralles. The temple became a specimen of a sort for the later construction of Orthodox churches in Byzantium and Russia, including the St. Sophia cathedrals in Kiev and Novgorod in the 11th Century. 'In the 6th – the mid- 7th Centuries Byzantine artists, having adopted and worked through miscellaneous influences of East and the antiquity, managed to create their own style in art. From this time and on Constantinople was being the illustrious artistic center of the mediaeval world'. (Ibid. P. 600.)

In the following period Byzantium saw icon-painting, developed within established church canons, on the increase. The Our Lady of Tender Emotion, which already in the 12th Century was brought to Russia, and now is kept in the Tretyakov Gallery as the most ancient version of the Our Lady of Vladimir image, is one of the most remarkable masterpieces of the epoch. Painting in Byzantium reached the utmost excellence in the 11th – 12th Centuries. The later period of the Byzantine culture (the 13th – 14th Centuries) saw many developments in literature, secular architecture, and fresco painting. But multiple raids of the neighboring tribes, the struggle of the Iconoclast Controversy (when many valuable icons were destroyed, and the same was done with outstanding masterpieces of the secular art by iconoclasts' opponents), crusaders' robberies, and, finally, the Turkish conquest of the country caused a heavy damage for the culture of Byzantium.

Many features of the Byzantine culture were preserved and developed in Old Rus, especially after Christianity and the Slavic writing were adopted.

The 11th– 12th Centuries was the Gold Age for the old Russian culture, which was then acquiring the originality in manner and forms. Witnessing of this fact are the austere and monumental silhouette of the Pokrov-on-the-Nerle church (1165); the rich stone carving of Dmitry Cathedral in Vladimir; multiple forms of churches, their versatile variations built within the similar style in Novgorod and Pskov (the 11th – 12th Centuries); cathedrals of the Moscow Kremlin (the 15th –16th Centuries). Architects and artists from Byzantium and Italy were invited to erect churches and monasteries and to paint their walls with frescoes. Russian icons became the important part of the world cultural heritage.

A high originality of the style pertained to the Russian literature, too. ‘The Song of Igor’s campaign’ became an illustration of its top excellence. Literacy was widely spread in old Russia; the evidence is provided by hundreds of birch bark letters which survived in Novgorod, written not only by the nobility, but also by common people. One can come across with such a recognition of the high value of the book: ‘The great benefit we reap out of studying in books, for we derive wisdom and abstemiousness from words that we read in them. For books are the rivers flooding the Universe with the deep waters of wisdom’. (25. V. 2. P. 716.) The prince Yaroslav the Wise arranged translation of many Greek and Byzantine books and founded a library under the St. Sophia Cathedral.

The Mongolian Tatar invasion inflicted a terrible damage upon the Russian culture. Literature was the first to recover into life: ‘The Description on the Life of Alexander Nevsky’ (the late 13th Century), ‘The Story of Pskovian Prince Dovmont’ (the 14th Century), ‘*Zadonshchina*’ (the Story of the Trans-Don Event) accounting of the great victory on the Kulikovo field, ‘The Journey over the Three Seas’ by the famous Tver’s merchant Afanasy Nikitin (the 15th Century). Then icon painting, sculpture, and architecture were ready to a rise. Theophanes the Greek, Dionysius, and Andrey Rublyov are the eminent Russian painters who left the great trace in the icon school. Rublyov’s ‘The Old Testament Trinity’ is the most illustrious masterpiece of this art.

The Western European Culture of an early period of Middle Ages might seem to have been a step backward from the level of great excellence and delicacy which had been attained by the Western Roman Empire. But at

the same time it was a step forward for dozens of tribes and peoples of Europe which had previously been at the side of the civilization's highway. 'This time cannot be 'crossed out' from the cultural history of Europe, nor must we refer to it just as 'the Dark Centuries'. It was in early Middle Ages that the cardinal task which pre-destinated the future of all mediaeval culture was under solution, viz. the formation of a basis for the really European civilization, such a cultural and historical unity with the common destiny in the global history which had never existed in the antique world. It was the early Middle Ages that stirred the development of the European cultural history proper, which arose out of the painful synthesis between the antique heritage (which cannot be conceived as just European), or, more accurately, between the extincting civilization of the Roman world; Christianity which was born by this civilization, and the culture of barbarian peoples'. (Ibid. P. 624.)

While developing, the European mediaeval culture was vastly influenced by multiple sustained connections with the culture of the East.

The rise in the Western European culture began in the 10th Century and left the brightest manifestations of Romanesque in architecture. The classical illustration of this style, which continued to prevail in the 10th – 12th Centuries and to which we owe monumental cathedrals and palaces, richly decorated with sculpture, is Worms cathedral. Later the Gothic style emerged, destined to serve as a symbol of the Medieval art. Cathedrals in Reims, Strasbourg, Cologne, and Siena are usually cited as the masterpieces of the Gothic architecture.

Knights' culture was a rich source of epic heroic poems, such as 'Chanson de Roland' (France), 'Song of the Nibelungs' (Germany), the Celtic epos about the King Arthur and Knights of the Round Table, many extant forms of the Tristan and Isolde story, multiple pieces of mediaeval chivalry prose romances, troubadours' poems which glorified love and fidelity.

The painting of the mediaeval Europe is full of the Bible motives. The Christian painting is permeated by the ideas of suffering, expiation of sins supposed to be committed by humans' forebears as they chose to enjoy fruits from the Tree of Good and Evil. However, these tendencies in art were alien to the human nature and could not stand for long.

The second super-long cycle is related with the Renaissance epoch,

which made humanism its symbol. Dante Alighieri (the author of ‘The Divine Comedy’) and Francesco Petrarch were at the origins of this brilliant epoch. The period of the Italian Renaissance lasted for about three hundred years. It is accepted to divide it into the Proto-Renaissance (from the late 13th Century), the early Renaissance (the 15th Century), the High Renaissance (the 90s of the 15th – the 30s of the 16th Centuries) and the late Renaissance (rather when Venice is concerned), up to the 1st of the 16th Century). The Renaissance in other countries of Western Europe started later and had none of such bright manifestations.

Painting became the prime art of the Renaissance. As early as in the Proto-Renaissance did traits of psychological realism first appeared in the frescoes of Giotto di Bondone, especially in his famous ‘The Kiss of Judas’, which they did in the works of Sandro Botticelli of the Early Renaissance period, whose most famous work is ‘The birth of Venice’. But it was in the pictures of Leonardo da Vinci, Raphael Santi, and the sculptures of Michelangelo Buonarroti that fine arts reached their utmost height.

Giovanni Bellini, Giorgione, Paolo Veronese, and Titian Vecellio with his masterpieces the ‘Tribute money’, ‘Flora’, ‘Bacchanal’, ‘Kain and Avel’, ‘Penitent Marie Magdalen’, ‘St. Sebastian’, all they made an outstanding contribution to the culture of the High and Later Renaissance.

In Germany the Renaissance tendencies were mainly expressed in the works of Albrecht Durer. The art of the Netherlands and Flanders reached its highest flowering in the works of Yan van Eyck, Hieronymus Bosch, Bruegel, Rubens, and Rembrandt. El Greko and Diego Velaskes were the most famous artists in Spain of that time.

Many other arts were also developed: sculpture (Nikolo Pisano, Donatello, Brunelesky, Michelangelo, Benvenuto Cellini), architecture (splendid assembles of Florence, Venice, Pisa, the St. Peter Cathedral in Rome, the palace-monastery El Escorial in Spain), music (the first opera ‘Daphne’ composed by J. Peri in 1594, compositions of Andrea and Giovanni Gabrieli, H. Schuts, I. S. Bach), literature (Tarquato Tasso, Desiderius Erasmus of Rotterdam, Sir Thomas More, Miguel de Cervantes, Saks, Geoffrey Chaucer, F. Rable), theater (the comedy of masks in Italy, C. Marlowe, and the tops — Lope de Vega and William Shakespeare).

Book printing was invented. The first printing machine was installed in Rome in 1455. A number of libraries and lyceums were quickly increasing.

As regards the Russian culture, there Church enjoyed an unbound domination in that time. The rise of culture was expressed in beautiful masterpieces of icon painting, the construction of the Moscow Kremlin, the Church of the Ascension in Kolomenskoye and the Pokrov Cathedral (known also as Cathedral of Vassily the Blissful), the Church in Fily and Novodevichye Monastery. As book printing was developed, it helped spread not only religious, but also secular literature. (Velikiye Minei — Cheti 'Great Martyrologue' is a 12-volume collection of literature, considered to be the first Russian Encyclopedia).

The third super-long cycle in the cultural dynamics of the mediaeval – industrial society embraces the period from the middle of the 17th Century up to the last decades of the 20th Century. In that time the mature industrial society affirmed itself and began actively exerting influence upon the spiritual life, bending to obedience of demands of industrial machine its inner rhythms and eventually bringing modern culture to the crisis in the 20th Century.

The dynamics of this period took in several contradictory tendencies. It was, first of all, the acceptance of sublime creativity and humanism of the Renaissance. But the Renaissance's heritage was never kept unchangeable; it underwent periodical reforms with regard to changing conditions of society's life and a new experience. The most important changes took place in the Reformation, the Enlightenment, and especially in the 19th – 20th Centuries.

Liberating creativity from religious tenets made up another tendency of the time; art was descending down to Earth — meaning that it was getting increasingly and significantly humane.

Conversely, the third tendency was a gradual loss of humanistic traditions under the pressure of the machine civilization. The industrial society invented hitherto unheard means for cultural development, spread and unification in different countries and regions.

Negative impact of the influence which the machine order of the industrial civilization imprinted into culture was manifested in undermining both aristocratic and folk roots of culture and in the universal levelling and averaging of culture. The machine order and informational explosions,

increasing mobility of population and unification of education were all the factors that undermined folk culture and traditional channels for its transmission, preservation, and reproduction, and imposed upon culture a number of certain templates or moulds. In such a way the deep roots which were constantly feeding up a thin layer of sublime aristocratic culture, were eradicated, its original national and local character was gone, and formerly tight threads of cultural traditions were severed.

There are a number of long-term cultural cycles to be identified within approximately three centuries:

1650 – 1789. It was the period between the English and French bourgeois revolutions, when the culture of the industrial society became spread and its supremacy established;

1790 – 1870. The industrial culture was in the phase of maturity; its highest achievements were attained during this time;

1871 – 1929. The contradictions of the late industrial society sharpened, and its crisis began;

1931 – 1985. The acute crisis burst on the society, bringing the industrial culture into decay and inciting some extrem totalitarian forms of culture, which however were overcome.

The first long-term cycle (1650 – 1789) was characterised by adopting and disseminating cultural achievements of the Renaissance. Voltaire, Jan-Jaques Rousseau, and I. F. Schiller were dominant influence. Goethe's 'Faust' was the cultural acme of this period. The drama was on the increase; it is enough to mention illustrious names of Pierre Corneille, Jan-Baptiste Racine, and Pierre-Augustin Caron de Beaumarchais. The list of the distinguished celebrities in art may be continued by the artists Nicola Poussene, Antoine Watto, J. Kanaletto; and the genius composer W. A. Mozart.

Yet the second long-term cycle (1790 – 1879) was by far richer in talents. And it was, again, literature that led the way, especially at the beginning of the period. Russia takes pride in poets A.S. Pushkin, A.S. Griboyedov, and M.Yu. Lermontov; among other illustrious poets were G. Byron in England, Heinrich Heine in Germany. Prose was on the impetuous upsurge; its best representatives are Stendal, Honore de Balsak, Emile Zola, Gustav Flaubert, Charles Dickens, N. V. Gogol, I. S. Turgenev, G. Irving, G.

Ibsen, A.N. Ostrovsky. Music, too, saw a stormy flourishing due to the masterpieces of L. Bethooven, B. Smetana, and F. Liszt, F. Schubert, G. Verdi, J. Bise, Richard Vagner, F. Chopin, M.I. Glinka and dozens of other brilliant composers. The liberation of art from religious bonds was going on. According to P. Sorokin's assessment, the share of secular pictures and sculptures increased from 49.2 per cent in the 17th Century up to 90 per cent in the 19th Century. The visually sensual, realistic art prevailed in all variety of schools.

During the following *third long-term cycle* (1871 – 1930) the potentiality for creative breakthrough which started the industrial epoch was slowly exhausted.

In the first half of the period dominated mighty torrents of realistic culture, whose roots could be traced back to the Renaissance tendencies, but this time addressed more to the inner world of the human being and his ordinary everyday life. The cultural center of the period shifted to Russia. Its culture, full of incoherences and contradictions, was however rich with traditions and at that time was just conforming to industrial civilization which it virtually had accepted as the peasant's reform had been put through in 1861.

In 1895 the brothers Lumier invented cinematography, the event which launched the development of a new art. Many prominent masters of this period are worth listing: Charley Chaplin, Ya. Protasanov, D. Vertov, S. Eisenstein, J. Epstein, V. Pudovkin, and others. In the 20s the cinema art gained a mass character. The movie industry was tending to become quite a profitable area for the commercial concern, which provided capital inflow and simultaneously highlighted contradictions of industrially arranged activity in the sphere of culture.

From the late 19th Century one could trace a breaking tendency in cultural dynamics. The art of expressionism was shaping, concentrating the emphasis on the personality of the artist and his subjective perception of the object. This style in painting and sculpture became rapidly spread in the first 30 years of the 20th Century and set aside visual, sensual, and realistic art. Then the abstractionism made a stormy appearance on the artistic scene, with Russian painters in the lead; V. V. Kandinsky became one of its theoreticians, and V. Malevich ('The black square'), M. Larionov, and N. Goncharova were

its pioneers and pathfinders.

During *the fourth long-term cycle* in the cultural dynamics of industrial society, which covers a period from the beginning of the 30s till the middle of the 80s of this Century, the general crisis of culture developed and exasperated.

The crisis of culture was manifest in the two forms which *prima facie* seem to be converse; the indication is for modernism and socialist realism. However, there is something about the both movements which make us tightly associate them in one group. Modernists did not want to have anything to do with the real life, or distorted it to please the base tastes. Socialist realism was oriented on the reflection of ideologically prescribed reality, revealing little bother for a deep thought to be present.

Yet in that period, a vital soul of folk culture was kept alive; there were big writers, artists, architectures, actors, and film directors who greatly helped its preservation and development.

Information technologies and use of new technical means (television, tape recorders, video-recorders, players) contributed into the process by which art was acquiring more of a mass character. Computer graphics emerged; cinema- and videoindustries grew to be the powerful, highly profitable industrial branches.

By the end of the period sprouts of a new humanistic art, to be characteristic of the post-industrial civilization, which will make culture a first priority, began to spring up.

Educational cycles and the revolution in education. Like in other society's spheres, the dynamics of education within the framework of last 1.5 thousand years, revealed super-long cycles, concomitant by revolutions in means to preserve and hand down accumulated knowledge, skills and cultural heritage.

In the Europe of *formation of feudalism* there was a decline of education, as compared to the antique. A system of specialised education was shrinking. It kept working only in Byzantium, China, and India, but even there some regressive tendencies can be observed (as in the case when Emperor Justinian closed down the Plato Academy). Handing down knowledge, lore, and culture was mainly carried out in the family, or through the process of

labor in agriculture, craft, trade, and construction.

Some centuries later, however, due to the rise in economy, crafts, development of trade, construction of monasteries and castles, formation of mediaeval states, revival of towns people began feeling the need to restore specialised education, which initially had been encompassed by the patronage of clergy. Kassiodor, one of the largest educationalists of the early Middle Ages, created the cultural center called 'Vivarium' in the South of Italy in the 6th Century. This center included a school, a workshop for rewriting books and a large library (with regard to this time's scope); similar schools were built in other monasteries. Initially, students studied writing and church literature there; later study of classical disciplines, coping the Roman triumvium (grammar, rhetoric, and dialectics at the first stage of education) and quadrium (geometry, arithmetic, astronomy and music at the second stage) were introduced.

The Court Academy of Charlemagne in Aachen, then the capital of Franks' state, offered a higher form of education. The Emperor invited most qualified teachers from Italy, Spain, Britain, and Ireland for tutoring. Alcuin, the Emperor's council on culture, education, and church matters, became the head of the Academy. He brought forward ideas of people's education, and in 796 he founded and headed the school in the monastery of St. Martin in Tour. Alcuin's activity greatly affected the education process in mediaeval Europe.

An Academy was founded at the court of Otton I, the German Emperor. In the reign of Otton III mathematician Gerbert (who later became the Pope Sylvester) made a significant contribution into development of education. Not only clergymen, but also laymen and laywoman had an access to education in the Academy. In the 10th Century schools' activity in Italy was revived; practical sciences, first of all medicine and law, were being taught there.

The culminating point in development of the educational system of early Middle Ages became foundation of universities. They appeared in Paris, Bologna, Oxford in the 12th Century, in Cambridge, Padua, Naples, Salamanca in the 13th Century, in Prague, Krakow, Vienna in the 14th Century and provided a wide, systematised teaching by conducting lectures and disputes; manuals were rarity at that time.

The decline of education in the transitional period was less felt in Byzantium than in Western Europe. Many educational institutions and philosophical schools were operating, and new one were founded. 'In the 11th –12th Centuries the secular education, based on the antiquity traditions, saw a tremendous rise. The High school of Constantinople, which was restored in the middle of the 11th Century and existed till 1204, was its center. Constantinople was considered to be one of the largest centers of high education, compable to Paris and Baghdad. The High school of Constantinople was run at the government expenses and was subject to its strict control, yet the ideas of rationalism and critique of philosophical systems from the positions of reason, nevertheless, penetrated in here". (25. V.2. P. 606 – 607.)

After becoming Christian nation, Old Rus adopted the Byzantine principles of education. In the late 10th– 12th Centuries, as the ancient Russian state reached zenith of its political and social development, it joined a family of European nations. Its trade connections widened significantly; its art was on increase. The progress of education became a vital task for the nation. The prince Vladimir Svyatoslavich organised the school for the young in Kiyev soon after Christianity was adopted, and his son Yaroslav the Wise founded a similar school in Novgorod. There were schools for women in Kievan Rus, one in Kiev under the Andreevsky Monastery and another one in Polotsk under the Spassky monastery. (Ibid. P. 715.) A high level of literacy in ancient Russia is proved by hundreds of birch bark letters, found in Novgorod, and also by 'graffiti' — inscriptions on the wet stucco in some Russian temples. Birch bark letters were found also in Pskov, Staraya Russa, Smolensk, Moscow, Vitebsk, and Polotsk.

Next in turn educational revolution took place at the following stage, in the Renaissance epoch. It was tied closely with the Great Scientific Revolution, which changed outlook radically and helped to overcome the mediaeval scholasticism to much extent, and with the needs of the swiftly growing market, trade, banking, and monetary economy. 'There could be no trade capitalism without learning, apprenticeship, preliminary education, acquaintance with the means which were far from being primitive. From the 14th Century Florence run the secular education. In 1340 there were from 8 to

10 thousand children, boys and girls, who learned writing and reading at primary schools (the city's population numbered about 100 thousand citizens at that time)... Out of this number, about 1 - 1.2 thousand students later entered the school of a higher degree, which was founded on purpose to train future merchants. During his staying there, a child would learn arithmetic and accountancy till he was in the age of 15... A gradual involvement into practical training at the shop completed the education of the future merchants. Some of them would occasionally turn to the 'high' education and went to study law, say, at the Bologna University... It would be uncorrect to imagine the entire merchant Europe according to this model. But practical and technical education was quickly becoming a common necessity.' (9. V. 2. P. 405— 406.)

By the end of the 15th Century there were 79 Universities in Europe. They gradually freed themselves from the church patronage, though sometimes changed it for the exuberant dependency on the state.

Specialised educational institutions were also known to this epoch. In Portugal, Spain, England, and the Netherlands maritime schools were founded. The Greshem College in England, which was founded in 1579, taught geometry, astronomy, and instruments of navigation. Oxford and Cambridge Universities became the centers of humanism in England. Sir Thomas More and Desiderius Erasmus of Rotterdam read there. Theology, civil and church law, philosophical systems of Plato and Aristotle, medicine of Hippokrates and Galen, mathematics, arithmetic, geometry, astronomy, dialectics, rethorics, ancient Greek and Hebrew were among these Universities' disciplines. Primary and secondary education acquired a wider spread and more secular character.

Pedagogy developed into a specific branch of science; Czech scientist and humanist Jan Amos Komenski contributed vastly into its formation by publishing a number of works on the theory of didactics and textbooks for school and family education. Komenski worked out the system of lessons and classes in teaching and offered the comprehend educational program which included the maternal school (upbringing the child within the family up to the age of 6); the school of native language for children from 6 to 12 years (learning of the native language, arithmetic, geometry, nature, the Holy

Scripture, and acquaintance with the main crafts), Latin or Grammar school for the most gifted pupils 12 — 18 years old (study of the ‘seven free arts’, with a due regard to their practical application, and also natural sciences, history and geography); academy — the high school for young people aged 18 — 24; and, finalizing the education, ‘the school of maturity and old ages’, which is taught by life itself. There is something in this system which reminds of a modern non-stop education.

However, the mediaeval educational system and training of qualified workers did not suite the demands of *industrial society*. With the transfer to machine production, there was a growing need in designers, engineers, technicians, economists, and managers in order to design complicated machine systems, to use them efficiently, to manage groups consisting of many thousand workers, to swith flexibly production as to suite a permanently inconstant state of the market. Priority was given to a specialised technical education, structurised in polytechnic schools, agricultural colleges, and so on. Training of the wageworker became shorter and cheaper. However, the factory worker permanently dealt with complex machines and technologies which were constantly upgraded. Industrial system needed professionals, the skilled workers for each operation. Thus, was gaining ground the universal primary education, combined with a narrow specialised training, sometimes at short-term courses or at specialised schools, without giving up the work.

Education was more and more following to the certain standards; methods and technique were being improved. A mass unified pedagogy for different educational links and levels was formed. State bodies enlarged it interference with the content of education, because, as a rule, the comprehensive education was run and paid by the government. Manuals for schools and college education were released in great volumes. The sphere of education was acquiring a more mass and demotic character, but it was made at the expense of loss of individuality, while stereotypes of thinking were formed and reproduced.

The overturn which came over education in the end of the industrial revolution was of the scope that it allows to reason that there was a revolution in education in the first half of the 19th Century.

At the second half of the 20th Century, at the last stage of the industrial

society, economical, socio-political, and spiritual conditions of life have changed radically. A next in turn crisis of educational system was taking shape. Functional illiteracy and professional incompetence became widespread phenomena.

Next in turn educational evolution was ripe, and next in turn super-cycle in this area was arising. We are going to face up with the formation of an educational system which would meet demands of the post-industrial civilization, focused on the utmost development of individual abilities and creative potentiality of every human being, on construction of an inseparable educational system to cover all the stages of the cycle of human life.

The ethics and ideologies of feudal-industrial societies. We can identify three super-long cycles in the development of human ethical rules and ideological aims within the last 1.5 thousand years. These cycles are related to major stages in the development of other spheres of society and to the wave-like cyclical dynamics in succession of civilizations. At the same time, the cycles in ethics and ideology are possessed of original traits and tendencies.

The first super-long cycle in dynamics of ethics and ideology comprises the period of formation of feudalism and mediaeval civilization. The key tendency of this period was establishment of world religions concomitant with the intention of the Church to subjugate the spiritual world of the human and versatile human activity. For Europe, this was the period of the rapid spread and establishment of Christianity; in the East Islam expanded over vast territories, starting from the 7th Century. Buddhism and Judaism, too, were gaining ground.

The world religions would never take roots in an uncultivated soil. They absorbed some elements from pagan beliefs and rituals, transforming them to be fit for their own ideological and ethical systems.

Why did the religion and religious morals take over a whole world of the mediaeval society? What did this supremacy result into?

First, the synthesis of religion and morals was caused by a need to put human relations in some better order. Religious morals absorbed some of the universally recognized rules of the time, which had been worked out within the previous historical cycles, taboed murder, incest, and offenses against property, and added to them dogmas reflecting the hierarchical order of the

feudal society. But the main contribution was undoubtedly the doctrine of the Doomsday and perspective to find oneself in the Hell in a way of retribution for one's sins, while the Hell was held out to be a far more unpleasant place for sinners' suffering than the earthly life might ever be. The establishment of new religions played to some extent a positive role, as they created quite a powerful mechanism to support a united ideological and ethical space, in disregard of national and ethnical differences and states' borders within the sphere of any particular religion. While the unity of different forms of spiritual life was more and more clearly recognized within these spheres, on the verges between them a sharp differentiation continued; people of other beliefs and heretics were deprived of human rights; it was allowed to torture, murder, sell into slavery, and deceive them.

The denial of human joy and carnal love was a negative side of religious ideology and morale. The religion preached asceticism, abstemiousness, slavery obedience, intolerance to dissidence, often a dual moral for clergymen who took advantage of their power to indulge themselves by secular pleasures, to collect wealth, to persecute people of other beliefs and heretics, to wage religious wars and so on.

But we should not overestimate a domination of religious outlook and a degree to which it exerted influence over the spiritual life of people. Natural optimism and humanism, criticism and sense of humor were sustained in people, though in a hidden and disguised form.

In the 7th – 10th Centuries Islam made an impetuous spread, laying grounds for formation of the future Arab empires. Islam did not bind people with such an austere rules as Christianity did. 'It satisfied a drive to leadership, to aggressiveness, and permitted polygamy.' (22. P.100.)

Christianity became the ruling religion in Europe, which Buddhism did in India, and Confucianism did in China.

Secondly, the domination of religious outlook and morals rested upon certain sociopolitical basis, aiding establishing of feudal relations and at the same time abolishing or terminating some of its extremes.

Christianity and Islam emerged as the religions of the oppressed, repudiating money-grubbing, money lending, and accumulation of wealth. But then, as suzerains and church were grabbing treasures, religion became

tolerant to wealth, consoling at the same time the deprived and exploited with a future compensation in the world beyond for the earthly sufferings. A spaciousness of areas under the religious control, which were far beyond national boundaries, facilitated formation of unified continental and world markets, prevented from violations of business ethics, commonly accepted rules of the market game.

Thirdly, the world religions played an important role in establishment of statehood, overcoming of the feudal split and separation. They helped to build up strong feudal states, such as the Byzantine Empire, the Empire of Charlemagne, the Holy Rome Empire, the Old Rus of Vladimir the Saint and Yaroslav the Wise, the Arab Khalifat. Religion was an ideological basis for the centralized state, consecrating sovereigns and calling for obedience to the secular power.

Fourthly, religion ruled in the spiritual sphere, keeping science, culture, and education under its influence. This influence was contradictory. On the one hand, church institutions, theologians, artists, architects, and musicians, owing to the support from the Church, left numbers of outstanding achievements in the cultural heritage of mankind. Vatican palaces and museums can illustrate this statement. The Church spent an enormous share of the accumulated wealth for construction and decoration of temples and monasteries, which other confessions did for construction of mosques, synagogues, and Sintoist and Buddhist temples. Aware of the influence it exerted on the congregation's emotions, clergymen ordered sculptures, pictures, chorales, psalms, and canticles. Copying books, translating of church literature, lessons of reading and writing, teaching fundamentals of science and arts were carried out in monasteries and church schools. With the church support and under its control universities were founded. On the other hand, the tough ideological dictate bound freethinking. Scientists, artists, and pedagogues, who dared getting beyond the frames of rigidly set religious tenets, were persecuted and penalized. Any free thought or scientific idea which might challenge the church monopoly was subject to suspicion. As time went on, the negative features of religious monopolism grew to the point when they become opposed to the humanistic idea of the Renaissance. From this point, commenced *the second super long-term cycle* in dynamics of ethics and

ideology of the historical super cycle which now is coming to an end.

The incompatibility of a Renaissance-bred humanism with almighty power of religious dogmas revealed itself in the Reformation, which was started by Martin Luther, a theologian. In 1517 he came out against the sale of indulgences with his 95 theses. 'Ideologically, the Reformation was largely reared by the effort of humanistic movement of the Renaissance to struggle against scholasticism as a theoretical foundation of Catholicism, to criticize ceremonial rites, luxuriant cult, and ignorance among clergy... The main results of the Reformation, which on the whole played a progressive role, were most telling in the fact that the spiritual dictatorship of the Catholic Church was crashed, and economic basis of its power was undermined by secularization of its property. New Christian confessions, societies and congregations emerged, dependant on Rome no longer and being in some cases national churches. All these made up conditions under which secular power and national states could strengthen. The Reformation facilitated acceptance of the new approaches to the issues in politics and law, — the approaches destined to become a few centuries later basic values of bourgeois democratic freedoms. Church and religion were thus made suited to conditions of the emerging bourgeois society and availed bourgeois ethics in economy and labor'. (25. V. 3. P. 271, 274.)

But at the very dawn of this process, the Catholic Church, first dismayed, as it had been, under the pressure of fresh ideas and movements, managed to build itself up again and awoke to the new reality. In an attempt to regain former power the church undertook the Counterreformation. Inquisition was raging fiercely in some European countries. The Order of Jesuits (1540), and together with it other well organized and militant religious orders, were founded. Austere censorship was introduced. The church was reorganizing, improving its flexibility, increasing its aggression towards opposition movements. Though some of these measures reached the target, successes were temporary due to the drastic changes in economic, socio-political, and spiritual life of the society.

Within the Orthodox Church, too, there was a strife between religious movements. In the 16th Century 'Nonpossessors', whose members denied striving for wealth, spread over Russia. One of its ideologists Nil Sorsky

called to liquidate excesses in the life of churches and monasteries, to care for the human personality, to insist on the labor character of activities of monasteries, which he believed should follow principles of non-possessing and concentrate on their moral influences. Maxim the Greek sharply condemned monastic money-lending and was particularly concerned with the ethical issues. He also rejected grave shapes of serfdom.

The Renaissance initiated formation of a secular and humanistic ethics, including the main values of human morals, but released from bonds of ecclesiastical tenets. Italian scientist Leon Alberti made a large contribution into the formation of scientific basis for humanistic ethics. He built his ideas on the assumption that the human existence must bear a natural character. The essential regularities of the human being, he thought, were analogous to the laws of nature, and were not granted by some social will. The human being is a creator and arranger of the world. Active labor and creativity are the chief moral merits for Alberti: 'Idling makes us enervated and contemptible. The art of living is obtained through action.' (25. V. 3. P. 462.)

The third super-long cycle in dynamics of religion and ethics covered the period from the mid-17th Century up to the last third of the 20th Century. It was begun by the era of Enlightenment. The major outcome of the latter was the crashing defeat of religious outlook and ethics and conservation of the shift started by the Reformation.

What were the main tendencies in ideology and ethics of this period which lasted for more than three hundred years?

First, it was the period for religions to gradually lose leadership in spiritual sphere, politics, and economy. The church conformed to changes and learned how to react flexibly to new human concerns and social antagonisms.

Secondly, the place of the rod of human existence priorly held by religion was taken over by the idea of scientific progress, of building society on some solid rationales agreed with the preferences of mind, with one or another scientific doctrine. Voltaire made a crashing blow on the religious outlook; encyclopedists developed his success and paved the way for atheism, for the faith in the almighty power of science. The broad scientific breakthrough of the 19th Century fixed the supremacy of the scientific outlook and the ideas of progress.

Thirdly, bourgeois ideology and morals became wholly dependent on following market values in their ultimate manifestation which is associated with the capitalist society. Accumulation of wealth and profit growth once turned in the basic institution of the morals.

Fourthly, as a counterbalance to the bourgeois ideology, the socialist ideology, intolerant to the church, emerged, gained force and in the 20th Century became dominant in several countries. This ideology was a combination of scientific utopia with a religion of the oppressed.

Fifthly, the radical alterations took place in the social morals and the system moral values to which people follow in the relationship between genders, in family and their everyday life.

The most radical changes with regard to religion and ethics were ones that came over socialist countries. The attempts to supersede the religion, to replace the bourgeois morals by 'the moral code of the builder of communism', to reject many human values, and to subscribe under the slogan 'the aim justifies the means' brought sad results. There was a realm of the dual morale; family strongholds were undermined. Similar tendencies were apparent in many aspects of the fascist and nazist states. However, the socialist ideology and morals proved to have no deep roots and eventually was replaced by the renaissance of religion and morals under its influence at the end of the 20th Century.

In the last third of the 20th Century there are signs of a deep crisis in ideology and morals and of a transit towards next in turn super-long cycle.

CHAPTER IV

THE FORMATION OF POST-INDUSTRIAL CIVILIZATION

The reason for our studying history is to better understanding of the past and foreseeing the future. Using the knowledge of spirals of historical progress during twelve millenniums (beginning with the mesolithic era), one can begin to answer the questions to which no one would find oneself indifferent. What was it that caused so maelstrom changes which have overtaken mankind in the late XX Century and have been able to destroy foundations of conventional being? What are the contents and, even more important, perspectives of these changes? What is it in the current history of Russia that is destined to recede into the background and what will be transmitted as historic heritage to future generations? Which of radical innovations that are sprouting today by thousands have enough vitality to persist in the future and to form a framework of the emerging civilization?

In answering these questions we shall proceed on the same way by which we have been moving previously. At first we are going to make a general research in tendencies of cyclical dynamics and possible scenarios of their development in the future, and next will see how these tendencies and scenarios make themselves felt at every storey of the pyramid of society.

4.1. Scenarios for the future in cyclical dynamics of society.

The advantage of evaluating the present by a historical approach, the present actually being when the making of history is in the progress, for later on there is no way to change history, if only to learn it, is that it offers an opportunity to find far back or just back in the past events analogous to those that occur today, and in such a way to measure the range of proceeding changes by scale of historical time. Of course, ‘analogous’ and ‘identical’ are not the same. Each event is unique and irrepititious, — just as every man is. But this does not put an insurmountable barrier to quest for kindred, more or less similar, events in the past, which is critically important for classifying and understanding of changes and foreseeing their consequences.

The contents and the historical scale of the transition towards post-industrial civilization. There is almost no one who dares to object to the idea that mankind has entered upon a transition period today. Three chief parameters of historical dynamics illustrate this statement: pace of changes (what seemed to have been standing steadfast, what have been developing by scores of years, decades and even centuries, is changing with an amazing speed in course of few months); depth of changes (shifts are observed in all layers, all levels and ‘apartments’ of the pyramid of society); geographic range (it would be difficult to speak of a country which has been left uninvolved into the turbulent welter of changes. Impetuously and painfully, under the acute crisis that has not failed to affect every aspect of society’s life, the conventional and inveterate is changing, and the society of the future struggles to the emergence.

No doubt that these changes are far beyond current fluctuations and middle-term cycles which regularly affect countries and continents. But how can one identify the substance and scale of these developments, and to the beginning of which of the historical cycles listed in chapter 1 can they be pertained to? There are three explanations which could answer this question.

1. What is going on is substitution of *long-term cycles* within the framework of industrial civilization, or the beginning of the next stage in its

dynamics. In this explanation, leading patterns in technology, economics, politics, society, and dominating paradigms in science, culture, ideology are just substituted for each other. In this case the fundamentals of industrial society rest immovable and unshifted, but they only shape mechanisms of their evolution. A transitional period in the epicenter takes about a decade, laying the groundworks for a rising wave to last for two or three decades. (But the same process on periphery should however start later and spread for a longer period).

That it is a succession of patterns is indicated by a variety of discovered tendencies in all spheres of social life. But, to begin with, the depth of the overturn surpassed the scales which are common for long-term cycles. Strongholds of industrial civilization which have been shaping for centuries proved to be affected. Secondly, the duration of a transitional period, let it be reminded, exceeded significantly, and quite contrary to what had been expected, the one that is common when one semi-centennial cycle succeeds another. Two decades have passed, yet underground pushes and sudden avalanches still continue. Therefore, one must awake to a need of considering more extensive historical cycles.

2. In the last quarter of the 20th Century mankind entered upon *a transitional period leading to the post-industrial civilization*, and proceeded to the process of succession of super-longterm (civilizational) cycles. Such approach to the subject in hand turns out to elucidate the depth and the protraction of this process. The basic features of industrial society, such as the machine-based pattern of production, the growing concentration and centralization of economic and political power, conversion of man into a particle, a screw of the huge technological, economic, and sociopolitical systems, are all them now receding to the background. Grounds for a new, post-industrial civilization have emerged.

In this case, the first phase of an oncoming civilization and the last phase of receding civilization, imposing upon each other, as they are, combine to determine the essence of transitional period and its roughly semi-centennial duration which is equal to that of a long-term cycle. This sheds the light on the contents, duration and result of civilizational crisis. The features of transitional period include mixed type of technology, economy, socio-political order. The

dominant characteristic of this period is also the alteration of resonant crises exasperating each other. Emerging structures of the new society (i.e. technological, economical, sociopolitical, and cultural) bear the features of both the former and the new civilization. They are essentially transitional, which determines their being of quite a low efficiency. These structures also have difficulty to adapting to an environment which in many ways inconsistent with new tendencies. Only at the outset of the second historical measure, which should to be a long-term cycle, can the post-industrial civilization unfold according to its own principles.

3. There are some indications that the transition which is now getting underway is actually the transition towards the third historical supercycle which comprises the triad of succeeding civilizations. If the acceleration rate continues at the level obtained by two preceding civilizations, where a succeeding stage is in 1.5 times shorter than its predecessor, or if the pace of acceleration drops from 1.5 to 1.4, the time frames of the next supercycle may necessarily follow one of the two options as shown in the table 6.

Table 6. The rhythm of succession of post-industrial civilizations.

Name of global civilization	Variant	Chronological frames of stages; duration in years				Duration of civilizations in years
		Transitional Period	Formation	Maturity	Decline	
The first post-industrial	I	1973—2020; 48	2021—2060; 40	2061—2100; 40	2101—2130; 30	1973—2130; 158
	II	1973—2025; 53	2026—2070; 45	2071—2115; 45	2116—2155; 40	1973—2055; 183
The second post-industrial	I	2131—2160; 29	2161—2185; 24	2186—2015; 29	2216—2240; 24	2131—2240; 109

		30	25	30	25	110	
	II					22	21
		2156—2190;	2191—2220;	2221-2255;	56—2285;	56—2285;	
		35	30	35	30	130	
The third post-industrial	I	2241—2260;	2261—2280;	2281—2300;	2301—2315;	2241—2315;	
		20	20	20	15	75	
	II	2286—2310;	2311—2335;	2336—2360;	2361—2380;	2286—2380;	
		25	25	25	20	95	
The third historical supercycle	I	1973—2060;	2061—2160	2161—2240;	2341—2315;	1973—2315;	
		88	100	80	75	343	
	II	1971—2070;	2071—2190;	2191—2285;	2286—2380	1971—2380;	
		100	120	95	95	410	

I — with acceleration rate 1. 5.

II — with rate 1. 4.

Of course these calculations can be nothing but conjecture; because there are too many factors affecting historical progress to define the terms of a stages' succession within the scope of one year; scenarios may prove otherwise. Nevertheless the table 6 gives some representation about the rhythm of historical progress for next three or four centuries, given the fixed acceleration rate, the possibility of order of this succession in the future, and the structure of future civilizations. But still, what was shown was only two variants of many that may be considered to happen.

This approach extends the borders of the transitional period. Now they take in the two primary phases of post-industrial civilization (about a century, or two long-term cycles). Of course, the structure of this period should therefore be more complicated, and include several periods of declines and rises, (which are alternating long and middle-term cycles), and crises at the moments of their replacement. In fact, this phenomenon has already been

widely observed; in the past two decades global economic cycles recur (1973—1975; 1981—1983; 1991-1993), and have always been accompanied by sociopolitical unrest and conflicts.

The first long-term cycle will cover a period of about half a century, i.e. the last quarter of the 20th Century and the first two decades of the next century. This could very well be the most difficult period in history of mankind because it is going to denote the universal crisis, the demise of industrial society and acute anguish of post-industrial society, which, projecting from the womb of receding civilization, as it always did, is still too feeble to exert any significant influence upon the destinies of mankind.

Therefore, crises and their concomitant unrest and explosions are as inevitable, as they are unpredictable. The society which is emerging today is still tied with the world which was before, bearing traces of many of its antagonisms, destined to exist in an atmosphere poisoned by venoms of corrupting elements of receding civilization. Death holds the grip on life. Elements of social system, destined to perish and desperate to prolong their existence, are capable of undertaking extreme actions which, by the strength of their internal logics, can lead to the self-extermination of mankind. But the awakensness to the fatal bane of proceeding on this way, a good sense and a craving to survive should however gain the upperhand. Sight should not be lost of elements of new civilization consolidating gradually, if painfully, in a perspective which seems remote today. Indeed, these elements are already existing and are gaining power. The crisis to burst out at the transit from one semi-centennial cycle to another is likely to play a requiem for the world evanescent to the past.

This will be an opening for the post-industrial civilization to consolidate, relying on its own grounds, at the beginning of the second quarter of the future century. This will be the stage of maturity, formation and spread of the new society which will become the illustration of the major features and advantages of the first post-industrial civilization (it will perhaps acquire a more specific name, as well as ones that follow it). But now it is strictly a matter for future generations to deal with, and let this enjoyable opportunity be left to them. In any way, this long-term cycle is going to finalize the transitional period to the next triad of civilizations, hopefully with a positive

outcome.

Major tendencies in the formation of the future society were drawn in outline by Pitirim Sorokin in 1964. 'The three most important tendencies of current history are, primarily, the shift of creative leadership of mankind from Europe and European West, where it has been during the last five centuries, towards the broader area of Pacific and Atlantic Oceans, and, more specifically, to America, Asia and Africa; secondly, the continuation of disintegration of the sensuous type of man, which has been so far dominating, of culture, society and values; thirdly, emergence and gradual growth of the first components of a new — integrational — sociocultural order, of its values and type of personality traits'. (47. P. 11). The trend of historical progress in the last third of the century demonstrates that this forecast proved true, except, perhaps, for enlisting Africa among leaders.

The world beyond the year 2000. Futurologists, scientists, and politicians are looking forward optimistically to the newcoming millennium. They are anticipating that what they are to discover beyond this mark will be a return to total flowering, a materialization of age-old ideals. However, there were no less audible warnings forebearing appallingly the potentially apocalyptic nuclear age when mankind achieved enough power to destroy itself and its habitat.

The two options seem to have found the most telling expression in '*Competition 2000*', a book written in 1960 by Fritz Baade, the German politician and scholar. The subheading of the book puts our dilemma in the most completely clear way: 'Our future: paradise on the Earth or self-destruction of mankind'.

Baade drew an enticing picture of a possible golden age which mankind may reach at the last decade of our century. 'The world of 2000 is really likely to become a beautiful and wonderful world. Starvation will be defeated, and none of the inhabitants of the Earth will go hungry a single day. All the people will afford not only enough rice, corn, or wheat, but also as much meat, fish, milk as needed for full maintenance of their health and efficiency... Poverty, too, may be defeated. Indeed, if each able-bodied man had enough nourishment, he would be able to work at full strength. Moreover, if, all men were supplied with a necessary set of instruments, it would be

possible for the peoples of Asia to attain productivity at least on a par with that which is currently achieved by North American, European or Soviet workers. Each family will be housed in dwelling worthy of a human being. They will be at least supplied with electricity, hot water-pipe, and central heating where needed. High productivity will allow to reduce labor hours... Vacation opportunities will be really fantastic. Air trips will be so affordable to workers from all the world, and they will be able to choose for many different and exotic vacation venues, from Nordkap, or one of the Pacific islands, to Florida, or the Russian Riviera located at the foot of the Caucasus. These trips will not require visa, or perhaps even passports, for all a wonderful world like this is thinkable only if nation-states would voluntarily agree to considerably reduce their own national sovereignty. Besides being saved from starvation and poverty, mankind will also experience the miracle of personal safety. Full nuclear and conventional weapons disarmament, and therefore, elimination of wars will assure mankind personal safety and security, of which all the nations stand in so urgent need. This will save them from the danger of mass self-destruction.’ (5. P. 237 — 238). But Baade also envisioned a converse, pessimistic scenario for the future of mankind with no less eloquence. ‘Since we have not spared the pink, sky blue and golden colors when drawing the picture of the world as it might look like in the year 2000 and onward, now and on we must use plentifully the blackest paint and to imagine the opposite conclusion — the danger of self-destruction of mankind.

The clash between sense and insanity that we are witnessing is the most dramatic in history. There are three factors that might be instrumental for insanity to defeat sense. The first factor is the awful efficiency of nuclear weapons obtained by ‘atomic’ nations at the moment. The second factor is the monstrous conglomeration of spiritual and moral trash piled in men’s hearts and souls during all preceding epochs. And, finally, there is the third factor, the incomprehensible, as it stands now, inability of senior politicians to find a sensible solution for the simplest issues facing all of us today.

‘Within the last forty years of this century, and indeed in the future decade, we are to accomplish the revolution which can be put on a par only with the great revolution of the age when the cannibalism was exterminated. We should be wake up to the fact that mankind has entered upon a new stage

of history, a stage which will determine our future existence. Mankind is facing problem of great importance, one that history has never seen before. And this problem must be handled and solved in so contracted terms that just thinking of it is awesome.’ (Ibid., P. 239, 244—248).

And now, as the term to find the solution of this problem is almost all over, it ought to be admitted that both extreme scenarios for the development of mankind which were designated in the cited fragment of long-term forecast have never been implemented. People have enough wisdom to halt at the edge of gulf, but lack the sensibility and organization to realize the optimistical scenario. And, sad though it might seem, paradise will never come to be on the Earth. Moreover, this is a hazardous Utopia, fraught with driving potentialities of development to total exhaustion, and hence with the death of mankind from satiation and pandering to its own whims.

So far we had a good fortune to avoid the nuclear disaster. For so much to be done, it took however not ten, but about thirty years. But nevertheless for the first time in history the reverse motion to the arms race has begun, with real extermination of the most horrible weapon of mass annihilation. The great confrontation of the two nuclear superpowers overladen with arms and alliances they headed has now receded to the past. This has certainly reduced the actuality of the threat of mass disaster, though it has not eliminate it completely. Therefore, mankind managed to fulfil the most challenging of the tasks of which Baade wrote in 1960. The pessimistic scenario has not been realized, though there were many premises to the contrary, while the world remains on the verge of nuclear disaster.

Nevertheless the time is not yet ripe for the optimistic scenario. Scores of millions in Africa and in Asia are living beyond the poverty line, millions are dying from diseases and starvation every year. Productivity continues to be low in developing countries, nor it is high in the post-socialist states, while the significant part of the population suffers there bitter penury. Most of people have to work hard overtime in order to provide for their families and themselves. Leisure in places is still a rare commodity for the majority of those living in post-socialist and developing countries. In addition, the voluntary self-restriction in sovereignty is becoming real only in the Western Europe. As for the disintegrated states — the USSR, Yugoslavia, Checho-

Slovakia, new borders were built up there, bringing on 'the war of sovereinties' to go far beyond sound economic and socially justified reasons.

As threat of a world war, whether it were thermonuclear, chemical, or bacteriological, has been put off, many countries were surprised to find themselves facing the variety of local wars by using more and more dangerous conventional weapons. Bursting out perpetually, these wars are running with unusual savageness. Armed inter-civilizational or inter-ethnic conflicts are spreading over many countries. The gory dramas in former Yugoslavia, the Caucasus, and Afghanistan demonstrate how much cruelty can arise from these confrontations. Raging outbursts of crime and terrorism deprives men of safety on streets, in airplane, and in their own homes. Hence security is a long way ahead, and in many countries still the longer one than was in the 60s.

A fresher forecast for the year 2000 and the beginning of the next century is to be found in John Nesbitt's and Patrice Eburdin's work called 'Megatendencies: the year 2000. The ten new directions for the 90-s'. The book was a grandiose success. It delineates major tendencies of the 90-s, seen as 'gates to the 21st Century.

'The oncoming decade is of a paramount importance in history of civilizations. It should bring forth impressive technological novelties, unparalleled economic oportunities, unbelievable political reforms, and great cultural revival. This decade will have little in common with any other, for it will manifest the opening for the new millennium...

Just like in an archaic theatrical performance, the new millennium is going to incite our thought to vision of a new and more perfect world, but at the same time it propels dreadful nightmares of the doomsday... Perhaps this is why arms control fails to relieve us from fear of nuclear weapons, and the positive tendencies of decreasing unemployment, unprecedented successes in business sector, and creation of new jobs fails to mitigate our apprehensions before a new economic decline in the 90-s...

Apocalypse or the Golden Age? It is for us to decide. And with the third millennium getting closer, the whole of our activity, which is to determine our choise in a long run, will give the answer to the question: What being a human is all about?' (39. P. 9. 11, 14 — 16).

Nesbitt and Eburdin' forecast was published three decades later than

Baade's. Naturally the range of alternatives was more limited, and the prognosis itself proved to be more realistic. Many the tendencies, which the latter work indicated and treated scrupulously, make today an outline of transformations bounded with the eve of post-industrial civilization.

Nevertheless, even such a relatively short period as passed after the book had been first published, demonstrates that the authors of this book preferred, all in all, the optimistic scenario, while the real dynamics of changes tended to move in a more pessimistic direction. The paradox is not due to an error in identifying tendencies. No, they were perfectly identified, as they revealed the major features of the emerging civilization. Rather, it is due to the authors' underestimation of difficulties and contradictions of transitional period which are able to restrain positive tendencies and put off their consolidation to the distant future.

So it happened that the first three or four years of the 90s saw the global economic crisis instead of an economic boom. This crisis did not fail to affect even the most developed countries like the U.S.A and Japan. But the most painful impact was felt by the post-socialist countries. Only as late as in 1995 some of them showed signs that they managed to overcome the crisis.

In the early 90s primary elements of a free market began to come into existence in the USSR and other countries of Eastern Europe. Short thereafter, greater part of the former socialist countries have moved beyond the boundaries set in the prognosis. What was built in these countries was by no means 'market socialism' or modern capitalism with the mixed type of market economy, as in Germany and Sweden, but a pure and untamed capitalism with wild market and violent original capital accumulated through depredating property of the state and impoverishing the masses.

The trend toward integration and unification of mode of life which dominated in previous decades remains only, if anywhere, in Western Europe and Northern America. The cultural nationalism changed rapidly into political nationalism, and led to unprecedented emergence of independent nation-states. Muddy waters of nationalism fostered racism, genocide, inter-civilizational conflicts, and wars. Millions of people found themselves on the hostile territories, their will never being asked. Furthermore, they were deprived of civic rights, resulting in the flood of refugees which the world has not seen

since long before. It can be equalled only to the mass displacement of peoples during the World War II.

Religious revival in some countries is ending into fundamentalism, into a form of religious fanaticism. In Moslem countries religion is claiming to dominate over courts, education, and morals. Those who choose to adhere to a different faith are being persecuted.

Therefore, history has actually chosen a path being far from the optimistic scenario as prognosticated by Nesbitt and Eburdin. At least, if there is anything positive in history's move, it is measured at a very slow pace and against the background of the sharply aggravated antagonisms of the transitional period.

How is it possible to approach the unexpected wave of violence, raging in the last years of the 20th Century? Sure enough, it has none of a mass lynacy behind itself. This is just an unusual form in which deep-rooted regularities of historical dynamics and genetics express themselves, but what are these very regularities? And where are they going to lead us? What is it that is waiting us beyond the threshold of the third millennium? A universal collapse, a direct way to barbarism, or rather a new Renaissance?..

The social genotype of every nation rests upon a multiple, multi-level ground. It includes, in the state of compression, all historical and pre-historical epochs. At a relatively quiet stage of development they are well consealed by 'capsule' of a contemporary civilization. But at the turning points of history its millstones grind this capsule down, unmasking people and revealing to the public eye the layers of previous civilizations which rested in the lower depths of genotype and immediately converting man into his distant predecessor. But at these very moments a reverse pole emerges, quite insignificant though at first, the pole of those who are to rear civilization of the future. Between these two poles a majority of men exists, attending to their minor businesses, feeling themselves more and more uncomfortable and discontented, rushing now to one, then to another pole. And it is upon whom this 'decapsulated', disturbed majority will eventually follow, that the duration and intensity of transitional period, and the price to be paid for moving forward to a next, superior civilization depend. The price, to be sure, will be different for every nation. People who saw the light at the end of the tunnel assume responsibility for

aiding themselves and other people, both their own and alien, to pay their way through this period with the fewest expenses... (61. P. 132 — 133).

Rationalization of contradictions and unrest through the terms of sociogenetics and disturbances of technological period is true and valid, but however insufficient. There is so much complexity about the modern society, so diversified, so superficially investigated are the regularities responsible for its cyclical dynamics and genetics, and so very ambiguous and whimsical, rich in surprises and zigzags, are ways and modes in which these regularities would realize themselves, that a far more scrupulous and fundamental research is needed.

The original sight of the contemporary stage of historical process and its perspective is offered by I. M. Diakonoff's book 'Paths of history'. He refers the onset of the eighth, post-capitalist historical phase to the moment when H-bombs were first tested (1952-1953). He develops the features of these phase as universally expanding doctrine of minimizing personal discomfort without any sound religious or philosophical background, the emergence of nuclear and other weapons of enormous destructive power, electronization of information and ordinary life, shifts in social structure, accelerated growth of population, and granting independence to colonies. (22. P. 346 — 347).

The eighth stage is to be succeeded by the ninth stage. The content and chronological frames of the latter are vague and difficult to define as yet. The major threat is rapid population growth which could well reach into 15 billions of people by the late 21st Century, and concomitantly lay an exuberant burden on environment. Diakonoff says, 'Two scenarios are most likely to take place. In the first scenario, mankind will become extinct sometime in the 22nd Century, and the vast majority of the biosphere as we know it today will also die, much in the same way as dinosaurs became extinct in the late cretaceous period. In the second and most optimistic scenario, the countries which reached the eighth phase of historical development, will see a sharp decrease in the growth rate of their population... However, a major danger to the existence of mankind remains in the countries of 'the third world' which cannot still outpace the sixth phase... Therefore it will be most urgent need to advance these countries to eighth phase. (Ibid. P. 353).

The aforementioned scenarios of the future cannot be excluded, but

must be specified. The line drawn between the two epochs is seen best in the context of the 1970-s, not of 50s, but two decades later when a series of economic and sociopolitical crises brought on the collapse of the world socialist system, the Council of Mutual Economic Aid, and the USSR. The bipolar world ceased to exist. Liquidation of weapons of mass destruction was got underway, but the torrent of violent inter-civilizational conflicts and local wars has nearly overwhelmed the globe.

I. M. Diakonoff admits that duration of each succeeding phase, to begin with the fifth one, grows three times shorter than its predecessor. Given that this tendency persists, the eighth (post-capitalist) phase will not be lasting for more than 30 years. Meanwhile, the next, the ninth phase, will last an amazingly unrealistic ten years. Diakonoff admits, though, that 'mankind will soon be facing stages with very weak potentials for progression. Indeed, if having any potential for progress.' (Ibid. P. 353). We however build our theory on the supposition that world civilizations have another terms of duration (2. 4 centuries for the industrial civilization, including transitional period, and 1. 6 for the post-industrial) and only one-half the acceleration rate of historical progress. It is possible that in a number of cases, such as civilizations preceding a new historical supercycle, this rate can be still diminished further. That the growth rate of global population will undergo an exponent increase in the near future also does not seem very credible. In recent years the tendency towards a decline in the natural demographic rate in most heavily populated countries became quite clear. One can assume that this tendency will persist and grow in the beginning of the next century, thus aiding mitigation of the conflict between growth of population and its requirements, from the one side, and availability of natural resources and the condition of the bio-sphere, from the other. Distributing widely resource-saving and ecologically sustainable technologies (which is one of the features of the post-industrial technological mode of production) will work towards the same goal.

The mitigation of this global contradiction which was taken over after the industrial civilization and became a so characteristic a feature of the 20th Century will depend on whether mankind will manage to realize the concept of sustainable development, adopted by the global community at the

conference in Rio de Janeiro. The term ‘sustainable’ does not mean here ignoring cyclical dynamics with recurrent crises, but retaining a balance between requirements and resources for growth, between society and environment, and minimizing losses during transit from one historical stage to another. This concept is based upon V. I. Vernadsky’s theory that the bio-sphere can and should be transformed into the noo-shere by using scientific thinking and human activity. Noo-sphere is the sphere of conscience, where scientific thought serves as a geological instrument. This holds good not only for the future, but also for the present, since the process mentioned here is evolving through more than a millennium. ‘Last millenniums are marked by the intense growth of influence imposed by one sort of living matter, civilized mankind, upon changes in the bio-sphere. Scientific thought and human labor transformed the bio-sphere into the new state — *the noo-sphere*... It can be accepted that within 5 — 7 thousand years the noo-sphere has been building up in constantly accelerating rate. This process is onward, without any move backward, and with stops growing shorter and shorter. This is nothing but the rise in cultural bio-chemical energy of humans.’ (12. P. 20, 143).

This was a process that yielded not only positive results. Negative results were best reflected in the industrial society, especially so during the phase of its sunset. For example, exhaustion of best mineral resources, timber and arable lands; pollution of water and air on an enormous scale; occurrence of large technogenic disasters like at Chernobyl; construction of weapons of total destruction of life on the Earth. All these are only the features of the noo-shere in their own right, however disordered, wicked and very dangerous. Nevertheless humanity is still able to realize another, positive variant of the noo-sphere. ‘We are witnessing changes in historical progress as they take place directly before our eyes. It is the first time in history that people’s aims and concerns — that is, of *all and everyone*, — and *liberated personal* thought do shape the existence of mankind, and are seen as measure for its ideas about justice. Mankind, taken as a whole, tends to become a potent geological factor. And now it is going to face the issue of *reconstructing the bio-sphere in order to meet the requirements of freely thinking mankind as a unified entity*. This new state of the bio-sphere which we approach today without noting it, is what we mean by the word ‘noo-sphere’.’ (Ibid. P. 240 —241).

In 1944, when V. I. Vernadsky wrote his essays about the noo-sphere, at the apogee of global war and on the eve of the first test of atom bomb, ideas like these might seem to have been a scientific utopia exerted by the author's exuberant optimism. Today, fifty years later, they are growing to be a real alternative to the fatal variant of the noo-sphere, a theoretical base for the conception of sustainable development. But for this alternative to become reality itself, for the trajectory by which mankind is slipping towards gulf of self-destruction to be severed, use must be consistently made of these chief factors for sustainable development:

a) restricting growth rates of the aggregate of people's consumption demands through reducing substantially its growth in developing countries and rationalizing patterns of personal consumption;

b) an overall implementation of waste-free or low waste technologies consistent with ecological standards, and hence substantial reducing the demand on natural resources; utilizing resumable sources of energy; a pause in predatory exhaustion of natural resources and contamination of environment

c) spreading of a sensible democratic rule able to keep off from arriving at power all sorts of political adventurers and radicalists ready to exert any forms of violence upon nature and society in pursuit of their ambitious purposes

d) banishing of militarism; expelling wars from a store of ways to solve domestic and exterior conflicts; gradual annihilating the most dangerous types of weapons; implementing a rigid international control over those weapons that still remain

e) combining efforts of the global community in order to bridge threatening spread between developed and developing countries, and to create global ecological policy and program, and executing it in an effective and consistent manner

f) the last factor for its place in this list but not for the consequence of which it holds: the awakening of all strata to dull perspective and extreme danger of the tendencies that prevail today; working out new scientific and political paradigms to lay the grounds for inciting purposeful activity on the part of energetic social strata, political parties and social movements throughout all countries of the world

The future of mankind and its continuing existence will depend on the rapidness and completeness of the awakening to the factors listed above.

Let us sketch *extreme scenarios* for historical dynamics during the transitional period. We refer to them as ‘extreme’ because variants of dynamics of the future are really innumerable, but they are all realized only within the range — ‘fan’ — of alternatives which might happen. This fan unfolds wide under the transitional periods, and folds back at stages of a more quiet, more evolutionary development. But at any rate this fan is circumscribed by extreme variants beyond which no trajectory is likely to pass. Actually, any trajectory will pass somewhere between these extreme variants, closer to the optimistic or the pessimistic scenario. It should be noted, however, that these circumscriptions are themselves flexible, and may shift in keeping with stages of a cycle, with regard to correlation of the chief factors and the starting point, in its own turn being in permanent oscillation. Hence the main task, and the main difficulty, in foreseeing the future is to ascertain the trajectory of ‘the snake’ of future scenarios. This snake is always wriggling with life which is getting calmer and softer under inert phases of cycle, and more vehement, more oscillating (though keeping in certain limits) under the chaos of transitional period.

To each level in the pyramid of society, to each flat on this level, to each country or local civilizations pertain their own wriggles of these snakes of prognostication. When interwoven and resonating, they form the tangle of snakes which design by its fancy wriggles the patterns of the future and the present, the trajectory of historical cycles. The incredible complexity, the multifoldness of developments in social dynamics are to be an excuse to the fact that no trustworthy long-term prognosis has been offered so far, but, what is more, there is as yet no similarly and sufficiently evolved theory on the technique of the foresight like this. The human mind, even in an integral aspiration of best intellectuals, is still not in the position to penetrate into perplexities of historical process so that it might be possible to conceive a reliable idea, if in the first approximation in exactness, of ways of its development for the next 50 or 100 years. History is always eager to laugh at ill-starred prophets, for they are many, and their name is Legion. But people are trying again and again to take up this solution-proof problem, for without

foreseeing the future it is impossible to see the substance of the present and to choose a right trend of behavior, for oneself, one's family, one's enterprise, one's country and world.

Let us, too, make our own contribution into this almost hopeless undertaking by drawing on the theoretical approach brought out above, on regularities and tendencies of cyclical dynamics. We say 'almost', for don't really believe this affair to be ultimately hopeless.

Attempt was already made (see [table 6](#)) to foresee a future succession of civilizations for about four centuries ahead, based on the assumption that in the last quarter of the 20th Century mankind entered upon a transitional period that leads to the next (the seventh one in total enumeration) civilization and the next (the third one for the last 12, 000 years) historical supercycle to unfold on the general basic principles. In this case the transitional period towards the post-industrial civilization, as it was noted before, is to take about half a century, and nearly century in the case of the supercycle. It goes without saying that another theoretical approach will lead to quite different evaluation of substance and time frames of the transitional period. We however will adhere to our own approach which is derived from the scrutiny of historical rhythms for 12 thousands year of human history. Being in no less extent admissible than any other point of view, it is going to create the framework, a number of launching points to set off discussions which may help us to find out the truth.

The table 6 indicates only two variants of the future rhythm which are based on unequal acceleration rates of historical progress. These variants are in no way extreme, utmost ones in a fan of alternative scenarios. It is them that line up the snake of prognostication, that shape its oscillations. Let these two extremes be excluded. The optimistic one is too much comparable with paradise on the Earth to be true; it implies a complete elimination of hunger and poverty over the whole globe; a willing self-restraint by states on their sovereignty; and, most important, full disarmament, liquidation of wars, ensuring security for all. There is no doubt that such variant scenario is inconsistent even with the most optimistic scenarios for the years 2020 — 2025, that is, the final years of transitional period to post-industrial civilization. It might become possible, if ever, in 2060 — 2080 at the very

best, after the transit to the next historical supercycle has been over, and the future civilization enters upon the phase of maturity, developing due to its own principles.

We should also exclude the ultrapessimistic scenario, by which global nuclear or bacteriological war is bound to burst out. What a global catastrophe like this can result into was demonstrated in the research carried out under academician N. N. Moiseyev in Russia and also in the United States (the phenomenon of the so-called 'nuclear winter'). There will be, to be absolutely sure, neither wins, nor defeats, nor even a lateral observer. This will be the suicide of human race, one burning immediately in the flame of nuclear blows, another dying anguishly and slowly from radioactive contamination and epidemical burst. At best, if there will be anything to survive and resume, it will be few organic creatures which manage to preserve their genotype, though with significant mutations. If the worst comes to the worst, only so much as the deserted planet, with lifeless traces of civilizations which would inhabit it, will survive. We will not also take into consideration a scenario of the fatal cosmic disaster comparable with one in the mid-1994 when a huge asteroid hit Jupiter. The result would be much the same as from a nuclear disaster.

Let us deal with more moderate variants within admissible limits, and trace them up ahead for 25 years on the assumption that about a half of a semi-centennial transit towards the post-industrial civilization for a country in the van of historical progress has already passed.

Let us not build a theory on some ideal thought-bred models, but on real tendencies in the confrontation of old and new, the receding society and one that emerges today from a welter of transitional period.

In our treatment of alternative scenarios we will keep to the same logic of narrative as in the two preceding chapters. We are going to follow from the foundation of the pyramid of society, the man himself, to its utmost height, the spiritual world. In doing so, we will need to pass through technological, economic, and sociopolitical levels. But before we set off on our journey, let us pause for a short review of the major contours of future civilization, as they are seen today, from a point in the middle of the transitional period. The chief tendencies and elements of future society have already been brought out, but many things are still obscure, since this society is in the initial stage of its

formation, desperately clearing the ground for further expansion. For the grounds it has to employ as foundation for its growth today do not suite its substance.

The major contours of post-industrial civilization. The approach we took up to learn about the regularities of historical progress will hopefully help us to avoid being misled or laboring in delusion. We are not going to deal with the inevitable future as a finalizing stage of a long and painful distance which leads by many grieves and woes to the ultimate materialization of human dream ever since the earliest times. History demonstrates that ideals differ in regard of different stages of this long — infinite — way. As long as mankind exists, this way foreshadows, from the one side, reiterated replacement of ideals in societies of the future, together with radical changes in human nature, and shifts in external conditions of human existence and development, from the other. Furthermore, we are not going to rely on the teleologic approach taking for granted that it is possible to point out the final end of history, and thus reduce foresight to identifying stages and ways in pursuing the utmost goals. (Teleologists fail to see that their representation of this goal bears inevitably traces of researcher's current level of knowledge and motifs).

We will decide on another paradigm for foreseeing the future. From the above analysis on pulsation of world civilization it follows that a last phase of receding civilization corresponds not to sprouts but to clearly delineated contours of oncoming society which is suit enough to launching into a bold and desperate struggle for self-affirmation against the tendency to self-conservation of a doomed, yet still dominating, conventional social order. Such way of looking at history facilitates foreseeing of the future and long-term tendencies in formation of a next civilization. We say 'facilitate', because by this approach we do not create something which has never been, and construct something unknown, but merely differentiate the present by dividing it into three streams: that which is bound to recede into the past; that which constitutes our inheritance from the past, i. e. the kernel of the historical genotype; that which is to be established in the future, being the coherent elements of future civilization. What we actually will need is to stare with deliberate and intent consideration, and without losing sight of historical perspective, at the reality, the inconsecutive being. But to draw the ideal of

future society, to make up its features, patterns, even details, is easier than to divert oneself from the 'down-to-earth' present tangled in ever-lasting confrontations of rapidly changing tendencies and tied with an investigator with myriads of visible and invisible threads which more or less determine his thinking and his suppositions. Removing from this motley welter, ignoring one's own past, making out and supporting a frequently weak future are not easy.

However, the labor of fulfilling this task may be lessened by the fact that half of the transit towards post-industrial civilization has been already lived out to constitute our historical experience which lends us bringing out and evaluating tendencies in domination.

1. The main feature of arising post-industrial civilization which is now going through the initial period of the phase of formation is the renaissance of humanism; that's why we will refer to this phase as 'humanistic'. Not that it is just a comeback, as though resultant from oscillation of historical pendulum, to the priority of values pertained by free, creatively inspired individual, as was under the Athenian democracy or the Italian Renaissance, these breeding grounds of the utmost surges of the human spirituality. The comeback to humanism from the suffocating industrial machinery has new grounds beneath itself, and is due to the altered sociohistorical conditions. What are these changes all about?

Firstly, this is the real *formation of the noo-sphere* according to the positive scenario. This process is no daring foresight, but the tendency which is actually taking place. Economic, technological, ecological and sociopolitical relations which have been growing ever-more complex during last decades, together with the accelerated growth rate of changes, makes it unworth trying to efficiently operate in any sector or field without applying contemporary scientific knowledge, which is duely enriched and updated. Let's take a look at modern Japan. Its economy is based upon 'three whales': microelectronics, biotechnology, informatics. Man relates with them not only within production, but in his every day life, for meals and medicine which he takes are made with the use of biotechnological processes, his house is furnished with a high-tech equipment, including microwave ovens, television, personal computers, multimedia; he has the use of a car overstuffed with electronic systems.

Minimizing harm inflicted upon nature by man's interference with environment became possible due to making use of latest technological achievements. Japan, though having worst availability of natural resources among developed nations, became the world leader in technologies due to preeminence of scientific knowledge, swift and large-scale materialization of achievements of human understanding, and demilitarization of economy. From this position, Japanese can be considered to be the best and prime way towards the noo-spheric civilization.

Care however must be taken lest to be under delusions of seeing the world through rose glasses. Life of a Japanese scholar or constructor, engineer or laborer, programmer or designer is enclosed within the stern frames of industrial rhythms. Japanese fully deserve to be referred as 'workaholics'. Elements of the noo-sphere are made up at the expense of exhausting and perfectly disciplined labor, both manual and intellectual. The distinction between them is getting increasingly obscure, since the intellectual labor has won an obvious domination.

Secondly, *science* over again becomes of utmost significance for social matters. It is true, though, that science was unprepared for this new function. The global crisis caused disillusion in science, since it proved unable to predict and to mitigate in any particular way the new society's pains of the emergence. Hence arises the tendency to revival of agnosticism and relativism, mystics and sorcery, to discouragement in the possibilities of understanding offered by science. Science itself demonstrates the crisis of ideas and a sharp slackening of the prognostical capacity. But this tendency will not keep for long, hardly over two decades will pass before it vanishes. Looming ahead are the signs of one of the greatest revolution to come over science which is going to evolve a-new the concept of a developing world subject to law-governed and uneven transformations. The renewed science is destined to be leader and a cornerstone of the post-industrial civilization. Not only growth of high-tech has to do simply with manufacture, but with wider spheres of social activities and their dynamics.

Thirdly, *culture* is also taking on an outstanding role. Families in the developed countries which enjoy a high level of supplying needs in meals, cloth, comfortable housing conditions, and availability of electronic equipment

used in household and media develop greater spiritual interests and refined attitudes and tastes in art. The rebirth of a mass interest in culture owes much to the achievements of the modern informational revolution. You can well afford visiting Louvre or Hermitage, attending theatre or watching ballet, listening to Beethoven or Bach's fugues or best vocalists of the world without going out from your home. All you will want is to turn on television, or video, or multimedia resource. The sublime culture is getting more available, while demand for the mass, depersonified anti-culture is declining, evanescing in the past together, carried along with the receding industrial civilization.

Fourthly, contents, patterns and modes of *education* undergo significant changes. Today it is less focused upon moulding personalities by bringing them to the same level, and making zombie-like stuff committed to provide services for industrial machinery, but more and more on developing original attitudes of mind, fitness to a creative daring, efficient solving of innumerable puzzles constantly presented by life, and adaptation to a rapid shifts in surrounding atmosphere of life. Education is getting inseparable as extends through all stages of life of every man, updating and aiding to his skills and knowledge. 'Informatization' of education, combination of logical and imaginative thinking, distant education, spread of multimedial resources goes far to improve considerably the adoption of what is learned and stir student's motivation. And then the contents of education is changing, too: the orientation to those who were expected to perform obediently discrete functions, to the specified professional education and training in narrow fields gives way to humanitarian disciplines — the arts, to a wide politechnization of teaching, to developing flexibility to spontaneous changes of occupation.

These tendencies seem to make a most obvious appearance in educational systems of France and Sweden, and many elements of this kind arise in these of the U.S.A., Japan and Germany, and other developed countries. Eventually, the educational system, which is most adequate to the post-industrial civilization, comes into being, marked with a rich diversity of national touch and local traditions and, along with it, some general features.

The beginning of transitional period to a new system of education was the crisis in the old one. The growth of functional illiteracy and professional incompetence became a risk factor almost in every country. It was the

sensation of millions of workers that knowledge and skills which they had acquired during the course of training and had improved during practical use grew suddenly unsuitable to the changed situation. This was an unnerving sensation, pressing upon efficiency of labor. The new situation necessitated re-shaping university and college programs, but most of all mass re-training of specialists by beginning dissemination of incessant education.

Fifthly, *a new system of ethics*, the rules of intercourse among people, is currently being evolved. This rules are going to emphasize upon a yearning desire of more independence and self-fulfilment of individuality expressed by any man in the society. Man's perceiving himself as unique personality urges him to keep himself according to his own will, but with a due account of same concerns felt by other people. Moral attitudes like these seem to win preference mainly in Finland, Sweden and Norway. They however are getting increasingly typical for other developed countries. Individual here has ceased to be a depersonified particle, or a molecule of collective whole in the sake of which various interests and unique features of individual are suppressed and levelled. The reverse prevails: the principal aim of social groups and institutes is to lend support to individuals.

Sixthly, ideological domination of ruling elite, responsible for suppression and levelling of individual ideals, is eliminated. Self-reliable man is free to choose his outlook, beliefs and purposes. He makes his way through many quests and delusions to his own ideals. This way commences from the collapse of formerly dominating ideologies. Disarray and confusion prevail; extreme views contribute into the split of human personality. This is also aided by the previously unknown spread of unemployment, unfavorable demographic tendencies, increasing birth rates of child mutants. Religion was made a common fashion last decade. It was the Age of the Enlightenment after people had been so keen on religious matters for the last time. This process is pushed forward by an obvious mechanism. The spiritual world is empty-proof. Chaotic and disordered life makes people to turn an easier way of recognition of an all-mighty hand. The collapse of earthly guideline becomes a good reason of seeking them on Heaven. But this is hardly a tendency to last for ages, nor should the future civilization be thought of as a time of the revival and triumph of the world religions. This is rather the tendency for the

technological period; and the preference will soon be given to knowledge once again, with reserving due tolerance and niche for those who will choose to keep commitment to religious beliefs and rites. The regression to the official religiousness is, let it be thought, only a temporary pull-back.

And in such a way, bright and free individual with a creative daring, who fulfils himself in various fields and social intercourse, is building gradually up into the contents and the highest purpose of the new model of society. This does not have to mean that antagonisms, ignorance, crime and conflicts are gone, but that ways to solve this conflicts are going to be more and more civilized, and that violence is due to become exception rather than a rule.

2. *The technological mode of production* — the world of machinery which man builds and uses in manufacture and life — will take another shape, too.

Spread of the flexible automation in production, miniature technical devices and computerizing of all trends of human toil; man's release from a tough manual labor and merciless subjection of machine rhythm sets him, his time and strength free and open for creative use.

As production deconcentrates, diversifies and becomes more flexible, more hi-technological, man's orientation within production also changes. From a screw to industrial machinery he grows to a creator of production process.

Achievements in the fields of bio-technology, unconventional sources of energy, non-waste technological processes, economizing ways of transforming natural matters will make it possible to supply ever-growing needs with a substantial cut in expenditures. The high efficiency and compatibility of the hi-tech economies of Japan, South Korea, and Singapore are quite obvious in contrast with these of U.S.A., Russia, Great Britain, and France, overladen with the burdening heavy and military industry.

Resultant from information revolution, even an ordinary life of men will become more intense, since tendency to shifting the focus of creative work and labor to men's dwelling, 'electronic cottages' equipped with computer systems, will be clearly prevailing.

Nevertheless, diversity of patterns will remain the feature of economic

systems. Mines, huge plants, and transportation network, enterprises based on industrial, and at times even on relict technological orders (as, for instance, in services, in household, in kitchen garden and orchard) will be still in use wherever may be needed.

3. Major changes will come over *the economic structure of society*. Here are the tendencies to these changes.

Small business will gain a second wind, and monstrous corporations will soon yield their grounds. Share of state-owned property will sharply decline. Governing the policy of re-production will be carried out by the state, in the first place, by creating equal opportunities for a free competition, reduction of monopolism, ensuring support for those who are already, or yet, unable to work, and the non-market sectors (fundamental scholarship, education, culture, health care). However, diversity of patterns in economy and multitude of property types will persist here, too. Each type of property will occupy a niche best suitable for acting with regard to men's requirements and with as high productivity as possible. Small and medium-size businesses will produce the bulk of goods and services, but large enterprises, transnational corporations, financial and industrial groups will be preserved, acting under a rigid anti-monopolist control. Households will take on an important part in re-production. Today, the basic features of this new economic model are to be found in Japan, Spain, Germany, and the countries of Scandinavia. International properties based on global telecommunication systems, transport, and environmental monitoring will grow in numbers.

4. *Social relations* are also overcome with new tendencies. Society tends to be more stratified. The struggle between classes in that old-fashioned manner, as it had opened to the Marxist view, is now receding to the past. But the social harmonization or heterogeneity are still hardly to be expected. Social groups continue to be focused on disparate concerns, while proportion of their powers is changing. Social antagonisms persist, growing tremendously acute in the chaos of transitional period.

A mature stage of the post-industrial civilization will see the harmonious polyphonism of social relationship, with dismissal from extreme methods of confrontation, and developing co-operation between various social structures for solving general problems facing society. The new order of social

relations seems to be most apparent in Scandinavia.

Contrast developments are taking place in national and inter-ethnic relations. The last years of the 20th Century bear a distinct touch of national recuperation. Inter-civilizational and ethnical conflicts arise, sometimes bursting into wars.

Dispersion of national and ethnical distinctions, loss of identity, which was the tendency for cultures within the industrial civilization, should not be expected to revive in the society to come. Nor the present confrontation between nations or exaggerating one or another aspect of the inherited ethnical identity have any chance to survive. Modern Switzerland is a perfect illustration of the multi-national state, with the full equality and the elaborate mechanism to regulate national intercourse and inter-action.

5. Nor we are going to face the extinction of *state and law*, not in the future century. This is not just because 'the declassed' society is none of the features of the nearest future. The state have been always holding important responsibilities in organizing and governing the macroeconomic policies and in promoting interests of whole nation in social and ecological matters. Under the industrial era, and in particular at its last phase, the state seemed to insist on embracing everything and defining anything whatever it was that could be put into service of the ruling beauracratc elite; this tendency reached its culmination under totalitarian regime. But in the last years of the century the tendency to *deetatization*, the slackening of the state's role, begins to prevail, which is especially characteristic of economic processes. Against the same background there is the rise of crime, narcotism, shade economy, corruption, resultant from the chaos of transitional period. The state and bodies responsible for enforcing the law are to come through an uneasy adaptation to changing conditions. The state is facing the role of being a real guard of any aspect of the human individuality, its freedom and property. Within this framework, rigorously delineated by the law, the potent and capable state will continue to exist. Elements of a legal state like this are already to be found in U.S.A., Japan, and West European states.

Irreversible changes penetrate today in political order and mechanisms by which the democratic rule is carried out. Regional bodies of self-rule enhance their role in political system for being more sensible of regional

peculiarities and customs, and of what population of this or that particular area needs in the first place. At the same time, mass political movements and trade unions which formerly claimed an unbound influence are yielding their positions. But many a smaller political organizations and parties arose. The increasing social apathy of the majority, occasionally interrupted by bursts of social unrest and conflicts, will be followed by more smooth and plain developments in the matters of politics. There can be no saying that any uniformity can be achieved. There can be no standardization of the state-governed, inter-state and inter-regional political methods and modes. The traditional distinctions between countries of East and West will survive, but they will never form a case for wars and conflicts. The total equilibrium of forces will resumed at least for the period of the mature post-industrial society.

6. And finally, worth mentioning are the new tendencies in the dynamics of *global community*. The tendency to the accelerated formation of global economy and global market, of integration unities and multi-national powers, which has been prevalent until recently, is opposed today by another tendency to partition of federal states and emergence of new independent ones, actually facing the third wave of the process which previously took place after both world wars. However, the latter tendency is only an outcome of the transitional period. The future will belong to integration developments currently evolving in Western Europe and Northern America and characteristic of the major process by which inter-state restrictions are subject to a voluntary, gradual elimination. Still, we should not expect that borders and customs will disappear in the near future.

While a new integration based upon voluntary union of independent states will certainly prevail, contradictions between countries and groups they constitute will survive. Military clashes and armed conflicts are not excluded, at least at an initial phase. However, war and tough decisions will soon become unpopular. International, inter-state arbitration, international court, the UNO, and likewise institutions will take a more significant part in maintaining the global security.

The formation and development of industrial society took place under the domination of the Western local civilization which succeeded in extending its borders so far that they encompassed almost the whole world. Then it

transformed the world to the best of its own interests by subduing and throwing to the past the archaic civilizations of the East and some of the original civilizations of the New World. But the Western domination has been undermined and dissipated in the 20th Century, as was sagaciously predicted in the middle of the century by A. Toynbee. 'The modern Western domination, to be sure, will see its end before long... And as the united world will be gradually finding a way through new generations and ages to counterbalance different cultures of which it consists, the Western contribution will enjoy a modest position on which it can only count considering its actual value as compared with other cultures....' (50a, P. 101)

History witnesses to the fact that re-sharing spheres of influence between local civilizations, and shift of the epicenter of historical progress are never an unpainful processes. A wave of armed conflicts has already upsurged whenever civilizations concerned get interfered; one can readily recall Afghanistan, Yugoslavia, Caucasus. The key problem of the 21st Century is whether these local blazes of conflicts burst into suicidal and overcoming flame of the global civilizational clash, or a shift in the proportion is apt to take a peaceable and tranquil way, where the triumph of tolerance, allowance of views and beliefs which are not wholly approved will help the post-industrial society to create instruments with which to solve efficiently inevitably arising counterworks between local civilizations of the fourth generation and to establish partnership.

These were the general and inexact outlines of future world civilization in such a state in which it is currently maturing in depths of industrial society, gradually and, at the times of crises, even swiftly, casting away its obsolete robes.

4. 2. The transformation of society on the eve of post-industrial civilization.

The period of formation of the post-industrial society may be divided into two semi-centennial phases of next super-long (civilizational) cycle. These are the phase in which a preceding society undergoes a crisis and a new one emerges, i.e. the transitional period, about half of which has been already gone; the phase in which a new civilization extends deep and wide, in which it embraces most of countries and establishes itself on its own grounds. It can be said that the first phase is the transition to the seventh world civilization, the two together being the the transition to a next, the third historical super-cycle to cover a time period from the 70s of the 20th till the 60s of the 21st Century.

What are the changes which take place, or are to take place at all levels of the society's pyramid during this period?

Man and mankind in the transitional period. Let us start with discussion of changes at the lowest, basic level of the society's pyramid, i.e. with human being. We will treat number and structure of population; requirements and capacities of man, his qualifications and interests, and, finally, his evolution as a biosocial species. The most general hypothesis to be brought forward is as follows: during formation of the post-industrial society the tendencies in all listed spheres will suffer inevitable break.

This suggestion holds true, in the first place, of the dynamics of numbers and structure of global population, on which depend the amount of requirements and the possibility to meet them with use of limited resources.

According to the recently updated assertions of Fritz Baade (5, P. 25), the total number of earth population is rapidly rising. The period of re-doubling of population have grown shorter from 2, 500 years under the neolithic and 1, 000 years under the ancient to 150 at the period of emergence and apogee of industrial civilization, and 37 years at its sunset.

According to the prognosis of International Institution of Applied System Research (table 7), the number of global population will double in about a 45-years term. But soon after the growth rates will drop considerably.

In the course of next 75 years, i.e. near the late 20th Century, it will enlarge only for a quarter to become stable at the level of little more than 12 billions. At the same time the share of developing countries in the total population of the globe will increase from 78 % in 1990 up to 86 % in 2030 and 88 % in 2070, and then will begin to fall away. Let us examine closely the prognosis of dynamics of the global population. (65. P. 7)

Table 7. The prognosis of dynamics of the global population.

Population	1990	2030	2050	2070	2100
Total for the world;					
in millions of people	5, 291	9, 499	11, 238	12, 334	12, 562
percentage to 1990	100	180	212	233	237
Developing regions					
in millions of people	4, 149	8, 167	8, 959	10, 897	10, 980
percentage to 1990	100	197	238	263	265
percentage to the world	78. 4	86. 0	87. 7	88. 3	87. 4
South, South-East, West and Central Asia in millions of people					
in millions of people	1, 906	3, 807	4, 503	4, 826	4, 619
percentage to 1990	100	200	236	253	242
China					
in millions of people	1, 159	1, 722	1, 873	1, 945	1, 968
percentage to 1990	100	149	162	168	170
Africa					
in millions of people	642	1, 831	2, 537	3, 090	3, 295
percentage to 1990	100	285	395	481	513
South and Central America					
in millions of people	441	805	946	1, 037	1, 089
percentage to 1990	100	182	215	235	249
Industrial countries					
in millions of people	1, 142	1, 333	1, 378	1, 437	1, 582
percentage to 1990	100	117	121	126	139
percentage to the world	21. 6	14. 0	12. 3	11. 7	12. 6
Western Europe					

in millions of people	377	416	416	415	426
percentage to 1990	100	110	110	110	113
North America					
in millions of people	277	376	420	475	577
percentage to 1990	100	136	152	171	208
Eastern Europe					
in millions of people	345	380	385	392	427
percentage to 1990	100	110	112	114	124
Japan, Australia and New Zealand					
in millions of people	144	160	158	154	151
percentage to 1990	100	111	110	107	105

Tendencies in regions will differ. The most rapid growth, 5. 1 times in 10 years, will be that in African population, to be followed next by South and Central America (2. 5 times) and Asia (2. 4). The population of Japan, Australia and New Zealand will demonstrate the lowest pace (all in all 5 % in 110 years), Western Europe (13%) and Eastern Europe (24%).

Some figures from this prognosis do not seem undeniable. There is little reason in that why the population of North America and Eastern Europe would quickly increase, while that of Japan and Australia would develop to the contrary. For the Eastern Europe the figures should be less than shown, considering the tendency to decrease of population in Russia, Hungary, Bulgaria and other countries in the early 90s. It is equally unlikely of the population of Asia to demonstrate an absolute decrease in the last thirty years of the 21st Century. Nevertheless, the prognosis provides a grasp of the real tendency to territorial shifts towards the currently least wealthy regions of Africa, South and South-East Asia. The fact that their share will account for 59 % in 2070, increasing from 44. 5 % in 1990, is going to aggravate the social opposition in the world.

Population is changing from the age's aspect, too. Two tendencies are to be noted here. Due to fall in birth rate and increase of the average duration of life the share for senior age groups rises in developed countries. But in developing ones, with the birth rate keeping on the same high level and significant decrease of the infant mortality, the share for junior groups is getting larger. In both cases a burden is imposed upon able-bodied population,

for each worker ought to provide for the increasing number of those who, though yet or already unfit to participate in creating social product, nevertheless consume it.

What tendencies will prevail in the vital statistics of the 21st Century?

Let us consider four possible variants.

1. The population of the Earth will be growing by the lower paces than it has been during previous 37 years, with annual growth rate 1.5. In such a case, the population will have next re-doubled pretty soon, near the year 2034. The earth inhabitants will reach the number of 10 billions this year, and 20 billions in 2081. It is obvious that while the labor efficiency rising, the obtainable resources will be not so many as to feed most of people in developing countries at least by the current standards. The over-population will cause raging hunger and epidemics.

There is no reason to lay hopes, not in the nearest decades, on progress in science and the more developed countries' experience for bringing this tendency to a breaking point and ensuring substantial levelling the standards of life in developed and developing countries. While the gross domestic product per head in developing countries increased in the last fifty years, their lag from developed countries has nevertheless enlarged. In a vast majority of developing countries millions are living on the edge of death from starvation.

Considering achievements made by new industrial states (South Korea, Taiwan, Singapore, Thailand, Malaysia), it is likely that the gap will somewhat shorten at the end of transitional period. There is, however, little chance for it to be bridged substantially, if the new technological mode of production, including the fifth and the sixth technological orders, does not spread throughout developing countries, which it will not before the year 2020. With rapid augmentation of human masses, most of inhabitants of the Globe will have to survive through starvation and penury, which will make up yet another case bringing social and inter-state conflicts up to a ranging point.

2. The second scenario unfolds at the background of intense efforts made by developing countries to improve educational level, implement a good family planning and enhance standards of life. If the rates of natural growth keep to the average for 1950 — 1987, the 10-billion mark will be reached as soon as at the end of transitional period (in 2057). This will help to take a full

advantage of an enlarging mass of national resources to do away with the lag of developing countries, and to meet in a more complete way requirements of world population. At this situation share for senior generations will be somewhat less, with the simultaneous decrease of junior share due to the fall of birth rate. But even in this case, a burden that will be overhanging natural resources, especially exhaustible ones, is clearly exuberant, if such rate will persist in the future.

3. The third variant will take place if and when the growth rate of global population is reduced considerably to the level currently existing in developed countries, down to 0.05, and then the total population is stabilized around the figure of 10 billions. This will herald a culminating point in the historical developments of demography and will challenge for the major mental changes in developing regions, first of all in China, India, Indonesia, Pakistan, and Brazil, where almost a half of the world population will live. We are speaking about the deliberate and voluntary self-control of family problems. China may provide a nice guidance in that matter, since the natural growth is 2.4 times lower there than in Mexico, though it is still 2 — 4 times higher than in most developed countries. But demographical policies should differ. In those countries where population is in absolute diminution and rapidly advancing in age, the policy to stimulate birth rate may be pursued. In this case the demographic dynamics are to be improved due to the rise of life standards, education and culture, and progress in family-planning devices.

With rise of population slowed down, a rigid cut of military budget will allow to allocate part of a national income increment for improving well-being of the people, standards of living, solutions of economic issues by expense of achievements in hi-technologies and development of labor productivity. In fact, this is the only way to assure outpace in the growth rate of the developing countries' economies and bridging their lag in the quality of life from the developed countries inhabited by an insignificant part of the world's total population. This is also the way to prevent the tremendous enforcement of racial confrontation, which in the past led many local civilizations to total extinction because, more developed though they had been, they exhausted their potentials and collapsed under the pressure of younger and more vigorous nations which were inferior to them both in economic and

cultural senses.

4. We cannot disregard the fourth variant, which is insistently advocated by certain scholars. They offer a radical diminution of global population in order by reducing it six times down to one billion people and thus ensuring for those who are left a respectable standard of life, and substantially relieving the burden currently sustained by environment (the concept of 'the golden billion'). But who is to decide which of the nations must be left? And what is the way in which it has to be done without a civilizational clash and suicidal global war?

While keeping the growth rate of population on a certain level and stabilizing, subsequently, the whole number of people on the Earth with having the gap between countries in the quality of life bridged is perhaps the most burning problem facing the nearest decades, it will not be solved until man himself, and in particular his requirements, capacities, skills, knowledge and will have changed radically.

The last model of consumption, introduced, as it was, to determine the dynamics of requirements under the late industrial society, was apt to exuberant novelties and demands from the part of minority, neglecting a quick rise in requirements of majority, which is quite common for the sunset phase of global civilization. This tendency is best realizing itself in the growth of a gap between the levels of personal consumption in developing and developed countries.

And this is the real damnation of industrial civilization, the main contradiction of the transitional period, the embryo of a perspective global outburst.

Parallel examination of level and dynamics of the GDPs (gross domestic products) per head made up an uncomfortable picture.

The data acquired from this investigation indicate the appalling tendency. The gap between poorest and wealthiest nations proved to be enlarging. In five years (from 1987 to 1992) the 10 wealthiest countries enlarged their advantage in the average GDP from 10 poorest countries to 44 times, from 37 times in 1987, i. e. in 1.2 times. This spreading gap between the wealthiest and the poorest represents a delayed-action mine which can explode the whole global civilization in the beginning of the 21st Century, if

the reverse tendency does not gain the upperhand. This problem is of a paramount importance for the oncoming century. Either it will be solved, or this century will be the last in human history. However, finding a solution is easier than it seems. The experience of Singapore, South Korea, Thailand, China witnesses to this.

Under the transitional period, with growth rates slowing down in many sectors, economic contagions becoming a common feature, and natural growth staying at the same level in the developing countries, gulf is getting only wider, as if beckoning the world to throw itself into its arms... Global social explosion is unavoidable, portent enough to drive the globe into a faraway past. For the threat of this pessimistic scenario to disperse, the global community has to concentrate on the rise of economics and standard of life in developing countries. In doing so, it should rely on 'the human factor' in the first place. This would involve training of employees, introducing hi-technologies, simulating control and reduction of the birth rate.

But the model and rate of growth of consumption as established in the U.S.A. and other developed countries, are prodigal and lavish in expenditures. If there is any way to promote this model, it is due to a precipitate exhaustion of natural resources, and ruthless exploitation of the majority living on the Earth. But the ruling elite of the developing countries make use of the same model, thus enlarging breach between themselves and fellow-countrymen. This breach will soon make up another case for the oncoming social explosion.

Working out and planting the concept of a more rational and thriftier, a less prodigal model of consumption in the developed countries, accompanied by advocating for a capacity to meet one's own demands mainly by expense of one's own resources is the problem to be handled on the way to post-industrial civilization.

Shifts *in family relations* are also inevitable due to incoherent dynamics, characteristic of transitional period. Western families will continue to lose their role in the society. Divorces, childless and small families will be even more common than they are now. In the developing countries, especially in Moslem ones, these tendencies are far less conspicuous. Large family remains an ethical ideal there, women being seldom involved into social re-

production which is outside the family and commonly educated a deal worse than men are.

The 'sexual revolution' and tendency by which the monogamic family is getting feebler provide many scientists with a ground to build up prognosis to the effect that the family as a social pattern we know today will dissipate in the century to come.

Three main functions of the family will remain, their mechanism slightly changed. The first one is the function of re-production, *continuation of genus*, transmission of a biological genotype to generations to come. Men and women form families to realize the law by which they have been abiding for millions of years — the law of continuation themselves by creating posterity. Without that neither a species, nor even a human race on the whole will manage to exist any further on the Earth. Powerful instincts of motherhood and fatherhood pertain to every human person, they are essential for bringing up a normal child, not a mentally handicapped one. A rocketing tendency to augmentation of incomplete families which exists today deprives a child of childhood and underlies many cases of the adolescent crime and irrational violence. One whom society deprived revenges on it. If this tendency persists and spreads over the developing countries, it will become a huge impediment to revival of humanism which cannot be rested on cruelty and animosity.

It seems quite reasonable to think that tendencies which are so characteristic of the developed countries in the transitional period will be brought to an end, that in most of countries of the globe the family will be kept from dissolution, and that at a stage of maturity of the post-industrial civilization the tendency to revival of the family as a major cell of the society will gain an upperhand. The family will build upon love in increasing number of cases, not only a love between husband and wife, but also to children, and a sense of ultimate responsibility before them. This is the only way for genotype to be transmitted and for whole nations to avoid extinction.

Secondly, the economic role of the family will sharply increase, too, especially under tight conditions of doldrums, unemployment rise and struggle for survival. That may seem to be opposed by a wide female involvement into production and social life, by the fact that women reveal interest in self-fulfilment in many spheres. However, extension of independence and social

activity must not be seen as a factor of depletion of the maternal instinct, or a denial to have families. The family builds upon equality, assuming a more broad male participation in family routine work and housekeeping, assuming partnership in family relations.

Such factors as spread of home labor ('electronic cottages'), rise in the number of families owning a small plot of land with the orchard, kitchengarden and countryhouse, accumulation of home possessions, a greater role of personal households in life-sustenance of the family should be also considered. All these factors are instrumental for the family's continuous role as an economic cell of the society, the crucial part of social re-production.

Thirdly, the family holds indispensable role in the re-production of *social genotype*, transmitting knowledge and cultural legacy, educating and rearing new generations, contributing to its spiritual world. The formation of individuality is the process to take place inside the family before a child enters a school. The sum of knowledge and skills which a child adopts through his early years exceeds in many times the amount to be acquired over all the rest period of his learning. He builds up his character, acquaints himself with moral rules, the understanding of good and bad. As every child tries himself in creative actions, he develops his emotions. His drawings are lively, full of bubbling impressions. While social contacts are undoubtedly useful in adding to and enriching the child's spirituality, it is the family that lays down the foundation for his internal intentions, and nothing is a worthy substitution for it. Collapse of families having children is a social depravity which the post-industrial society will have to minimize, if not overcome.

Will there be any changes over man as *a biological species* in the course of the future century? The answers to this questions differ widely. Many demographers hold the view that evolution of man as a biological species ceased because of his turning away from the natural selection.

We find it difficult to share this view. Firstly, man's independence from environment is a self-conceit myth produced by a personality inclined to overestimate the degree of own autonomy and being instead a creation and an integral part of nature. That personality experiences the everyday impact by cosmic and earth natural powers. His life cycles are subdued to natural ones. 'The artificial space' reared by man is a transformed part of the natural space

which is perpetually rebounding towards its bosom. The regularities of the natural evolution hold good operating over man, too, though in greatly modified way. What we face here while dealing with this problem is aberration in the historical time. The entire history of human society takes all in all 12, 000 years, and all the course of life cycle of *homo sapiens* as a biological species is a evanescent tiny quantity against the scale of geological or cosmic time, the second, the millisecond. For any conspicuous changes in the biological genotype of humans to take place, many millenniums have to pass; but micro-changes, as they accumulate, are bound to end up eventually with the qualitative leap, with changing substantially a biological species, or else superseding it, removing it by a more perfect one, as happened 40, 000 years ago when the Neanderthal yielded ground to the Cro-Magnon. Initiating this leap are radical changes to occur in the environment.

Is time already reaped for the leap? According to Fomin, it is. 'Man is no a finalizing link in evolutionary succession on the Earth. Crises in the development of this species are getting more frequent, inexorably pushing it to dying. However, it looks reasonable that from the inner depths of its nature a new species originates, a result of ever-continuing evolution, to replace a precedent one. Let us refer to him as 'superhuman', i. e. one who is superior to human, but at the same time took after him some of his features and qualities... Such prognosis is deduced from the presumption that a new biological species originates in the depths of a precedent one, but representatives of the former acquire new qualities and features, critically helpful for their existence and development under circumstances which are fatal for a modern man... In the long run this process will lead to dividing society into two unidentical parts. They will consist, respectively, of unnumerous representatives of an originating species and all the rest of a decaying and dying society. That such division will be accompanied with raging social unrests cannot be excluded, for no sustainable equilibrium can be thinkable in such a heterogeneous society. (54. P. 167 — 168). To put it another way, mankind will live to face 'inter-species' conflicts. In view that an 'extincting species' has the thermonuclear, the biological and other weapon in its use, and while a superhuman, being a more ingenious species as he is, will invent something which will be still more tremendously devastating, it is hard to believe that evolution itself will

persevere any longer. More likely, it is to come to a full stop together with the human race, and, most probable, with all living creatures on the Earth — while the latter will become at least a deserted cosmical body, one of the billions of its kind in Universe.

How will superhuman differ from modern man? Let us allow the author to make himself clear. ‘A next stage of the evolution will be the emergence of a superhuman — a humanoid creature possessed of ability to maintain telepathic contacts and not depending on our sophisticated technical machinery for life-sustenance. It may be well supposed that photosynthesis will be discarded to make use of other methods of the power concentration and utilization... Many habitual organs will disappear because of their unusefulness. For instance, cessation of procuring material supplies from the exterior biological resource will cause liquidation of digestion and alimentary canal and all attributes which are related to them. If energy is no longer imported by the oxidation process, there can be no further need in breathing organs. Such creatures will bear little resemblance with a human; nor will they remind any of known animal species. Perhaps they will look like an ultimately harmonized geometrical structure, able to transform their outlines in regard with what they deem most needed in a particular moment. (Ibid., p. 185 — 186).

Moreover, as the superhuman will be coming to dominate, great changes will hit upon the inner structure of society, informational network and modes of communications. ‘Superhuman will be gradually giving up, completely or partly, language as a way of communication, changing it for visualized images. This will cause the extinction of ethnical and national differences, and allow to do away with using many technical devices which are so vital today. Telephone, radio, television and other communication resources will be no longer of any need. Similarly, there will be no need in all sorts of publication — newspapers, magazines, books. From a moment of his birth superhuman will enjoy the ability to collect necessary information without having recourse to teachers and textbooks. Medical aid will be replaced for efficient self-treatment.

Naturally, these conditions will lay a crucial impact over social structures. States will cease to be, human relations will change, and such

concepts as marriage or family will take another shape. All these will cause inevitable consequences as to psychological conditions, morals of superhuman, his way of looking at various situations, etc. It can be said that we witness a new civilization currently coming over the globe today, which is enormously different from our'. (Ibid., p. 172 — 173).

But both human body (i.e. that of *human sapiens*) and human society retain high sustainability and endurance in their basic features, in their sociobiological genotype. We have a perfect perception of the world of ancient man who lived a pair of thousands years ago. Additionally, there are little, if any, biological differences to speak about. Radical changes of a sort treated by Mr Fomin can only be possible after a few millenniums will pass, if possible at all. Moreover, they are unlikely to take place as an unexpected emergence of a new psychological species — superhuman, his existing all along with, and confronting modern man. More likely, changes will develop by gradual accumulation, growing with every coming generation. At the same time, a pace of these changes will sharply increase due to dramatic process in environmental conditions and these of human life. Changes come upon the radioactive background, the consistence of air, contents of food products. As the ozone layer becomes feebler, the tough cosmic emanation will be of a still tougher effect. Number of mutations and numbers of mutants will be growing; some of them, adapted to the changed condition, will establish themselves, increasing anthropological diversity and contributing into a gradual formation of a new kind of human species, a new specification of the Homo genus. But this new creature will have none of the sharp differences from modern man, as prognosticated by Mr Fomin. Such distinctions mean a disjunction of evolution which moved onward during thousands of years.

The emergence of the post-industrial technological mode of production. Transformations in human being always cause radical changes in technological mode of production, in technical systems used by man to convert original natural matters into products to supply requirements in personal demands, production, understanding, management, and others. In asserting these changes, their scale, structure and dynamics, it stands to reason that a few basic trends would be identified.

1. Succeeding the industrial technological mode of production, a

starting point of which was the industrial revolution, the post-industrial one is emerging. It can be also said about profound technological revolution currently underway which will take a time period of about half a century and will alter the look of 'the second level' in the society's pyramid. While this fact is universally recognized, the term 'second (or third) industrial revolution' sounds somewhat inexact, for this revolution in no way bears out the key principles and basic trends of the industrial revolution. It rather knocks them down. The technological pendulum swayed towards small and medium businesses, a more individual labor. But driving this sway is an entirely new scientific and information base. This is a new coil of the big spiral of technological progress. We should refer to it as *post-industrial technological revolution* — though a more adequate term is still to be found in the course of time to indicate more precisely contents, depth and scale of changes in the technological base of society.

The life cycle of emerging technological mode of production is roughly the same one that of the post-industrial civilization. The beginning of this transit usually dates the mid-70s, though fundamental premises had been ripening years ago. It will take half a century, i.e. till the 20s of the future century, for the new technological order to establish itself in epicenter, and another half a century for it to extend in depth and wide. Then will follow almost as much durable a period of maturity, an utmost ripeness of potentials laid in a mode of production. Next will come a phase of decrepitude, with technological crises and premises ripening to create the embryos of a next coil in the big spiral of progress (unless powerful turbulences from outside would interfere to distort the course of technological progress).

The fact that two decades of transitional period have passed make it possible to formulate some main features of the post-industrial technological mode of production which is essentially different from the previous one, destined to a gradual removal from the scene of history.

First, it is *humanization of technology* which is seen not only by changes in the marketing pattern of the engineering production (rise in the production of technology directly focused on personal needs), but through the way technology is used now. We watch hard manual labor minimized everywhere. Labor is getting increasingly involved into technological process

which imparts to labor a more creative touch.

Secondly, *the hi-tech boom* of the modern production. As they reflect the last achievements of scientific thought, hi-tech systems account for a more and a more gain in market.

Thirdly, *minituarization* of engineering systems. Production becomes less concentrated to be prepared to react at rapidly changing demand.

Fourthly, *ecologizing* of technology, which involves comprehensive use of natural raw materials, or replacing them with synthetical ones (plastic, synthetic tars, composites, ceramics, etc.); use of waste-free and low-laste technology which diminishes noxious pollution; establishing more and more rigid ecological standarts.

The fifth feature is combination of tendencies to more localized and more globalized production. The former incoherent division of labor, by which certain regions were specialized in extracting fuel and raw materials, currently gives way to local technological systems providing complex processing of raw materials directly at places where they have been extracted, a higher degree of regional self-sufficiency and exchange in final manufactured goods. While links of integration strengthening, they become somewhat different, more focusing on meeting diversified consumption needs. Population is moving about more actively due to the wider range and cheaper prices of transportation. Information network would get up to every man whenever he lived, making him a citizen of the world, a participant or an observer of occurences taking part in any point of the globe.

2. Diversity in technological orders; recurrent succession of technological systems (trends in technology) and generations of machinery. On each phase of a super long-term technological cycle will co-exist a number of inter-acting technological patterns, representative of the present, the future, and the far-away past. While each pattern will occupy its own niche, a correlation between them will modify, as leading patterns will change each other, and there will be shifts in technological structure of economics.

From the mid-70s the fifth, counting from the industrial revolution, technological order has been going through formation. Its kernel contains electronics, data-procesing, telecommunications, natural gas, low-waste production. It can be supposed that the leadership of the fifth technological

order will cover a period of half a century, i.e. till the 20s of the 21st Century. As readily seen, it will coincide with the transitional period towards post-industrial civilization. Moreover, this order is a transit in its own right, combining blended features of industrial and post-industrial technological modes of production.

The sixth order will perhaps hold leadership for slightly less than half a century, lasting till 60-s of the 21st Century. Its fundamentals, in their original outlook, are already conspicuous (nanoelectronics, geneal engineering, Internet, unconventional energetics). It is through them that potentials of a new technological mode of production unfold themselves. The seventh order coincides with a phase of maturity of the post-industrial civilization, which the eighth one does with a phase of decrepetude. The ninth order is likely to bear characteristics of a transitional stage to a new technological mode of production of *second* post-industrial civilization. The latter, in its own turn, will also go through 4 or 5 succeeding technological orders. Thus, pulsation of technological progress never comes to a halt.

3. A kernel of the post-industrial technological mode of production reflects three basic directions connected with mutual links — mycroelectonics (later to transform into nunoelectronics); informatics, and bio-technology. These trends serve as an elementary base for technological directions and generations to lead in the fifth technological orders and those to succeed them.

By creating conditions for employing computers and mycro-processors in almost each field of technology, *microelectronics* greatly contributed into productivity and accuracy of operations, and permitted to deliver man from irksome monotony of both manual and intellectual work, to bring technological processes to perfection.

Bio-technology becomes another essential link in the kernel of the technological revolution. Its aim is to realize the same scientific discoveries in the molecular biology that really turned things upside down in modern science by laying grounds for the geneal engineering, which is basically the way to decipher and correct the code of heriditary matter. It launched a deliberate work on creating more productive species of mycroorganisms, plants and animals, to heal heriditary deseases, to develop more powerful medicines, ferments, materials with prograded attributes, to clone more productive

animals.

A third link in the kernel of the new technological mode of production is an overall *informatization* of society, every side of it and each field of the labor occupation, due to telecommunications, informational computer networks using cosmic communications facilities, optical fibre, facsimile resources, and e-mail. With use made of multimedia (a synthesis of computers, audio and video equipment) a virtual, vicarious reality has been created. Man plunges into the world built by himself. This presents an enormous opportunity to develop creative skills, acquire and add to his knowledge.

Information revolution has established a new global community of individuals without having deprived them of their individuality. Man can receive and transmit any information needed in due time and place. He can come into contact with any other person or enterprise in any point of globe map. By the same process, current media institutions are losing their monopoly, switching onto work with more specific needs of their customers. The total availability of information is really making man a citizen of the whole world.

4. However, care must be taken to avoid being obsessed by technological euphoria which is a common background of each technological overturn later changing by a bitter disillusion. Inconstancy and incoherence are still the features of progress in the scientific research, containing potentials to threaten mankind in the future.

The formation of basic trends which were identified above and of innumerable trends of their practical use in many fields and sectors will require tremendous funds and specialists of superb expertise, extensive knowledge of those who will use advanced technology. Only most developed countries representing a very small part (about 0. 1) of the globe's total population can afford such conditions, while greater part of developing countries are not able to provide resources needed to realize new trends of technological overturn. Considerable efforts should be made by the UNO and other international agencies for directing streams of sound technological assistance into developing countries in order to launch there advanced technologies and improve education. No doubt this enters in these countries' own interests, since they are searching ways to avoid social explosion.

There is a greater inconstancy in technological development within single countries, too. While few large centers and techno-poleis concentrate a national scientific power and pioneer enterprises, basic conditions for research in most regions reflect technological patterns which were outdated for many years, unable of making production more efficient, and goods more competitive, and to ensure growth of earnings. This turns into greater spread of inter-regional differences and conflicts.

Another thing to be considered is that scientific achievements can be both beneficial and disastrous for humankind as they are charged with the danger of new global catastrophe, either deliberate or accidental. Arms race of new models of mass annihilation is far from being stopped; new generations of nuclear and biological weapon are developed; yet even conventional arms are getting more and more destructive and exact, as electronic war in Persian Gulf have demonstrated. Nor the exceptional potentials of military complex are discharged, creating ever more perfect means of aggression and defence still being its aim. Atomic weapon creeps around the world, and danger that it will eventually come down to the hands of extremists who have nothing to stop them is more real than ever.

The geneal engineering, despite all precautions taken, does not prevent a possibility of creating such organisms that would effect an irrecoverable change in nature and heredity of man. In addition, there is another possibility of abuses of the latest achievements in bio-technology, affecting human mentality in such a way as to transform man in an obedient tool of someone's malevolent plans.

Attention should be paid, then, to less conspicuous, but widely spread side effects of technological overturn. A continuous work with computer is a serious sight hazard and radiates organism. Children overtaken by with computer games, programs and block busters on television and video become exposed to an information danger. They give up reading books and meeting other boys and girls of their age.

Far from exaggerating some contradictions and hazards of technological overturn, the expounded position is a mere warning against ignoring them. There is nothing about technological overturn that is absolute good or absolute evil. We all should be just sober in our perception of the

current progress in technologies, we should undertake sensible measures as to reduce the negative effects, and we should put it in service for the benefit of man and mankind. There is no mightier instrument to transform the world.

5. The post-industrial technological revolution brings changes as to tendencies in *patterns of organization of production*, ways of using scientific and technological achievements. Engine gave birth to a manufactory as a system of engines, and manufactory became a symbol of industrial production. Century succeeded by century, one phase of the industrial technological cycle succeeded by another, manufactories and plants were becoming more and more potent, employing thousands and scores of thousands, forming unions and corporations in major industrial centers, absorbing power off neighboring villages and producing heavier and heavier damages to the environment.

Three factors: electronization of production and common life, information revolution, de-concentration of production originated the tendency to de-urbanization in ways of the people's settlement. More efficient, and more flexible in their reacting upon changes prove to be smaller enterprises, especially so those operating in processing sector and services. Monsters of industry survive, yet their number falling. It is possible now to propel production at a maximum close distance from man and consumer market by setting up a network of small enterprises in small villages, lending support to farmers scattered over country, relieving burden that is on nature, and discharging large cities.

Part of the inhabitants in developed countries rushed to suburbs at first, and then proceeded further away from cities-octopuses, eager to make advantage of informational technologies. In developing countries, prevailing is however a reverse tendency. Villages there are casting off into towns scores of job-searchers. This tendency will perhaps persevere in next decades, at least untill the growth rates of population become slower.

The division of labor changes its character. Evergrowing complexity of labor and rapid succession of generations in technology allows less profits from being a narrower technician. Wanted now are workers of a broad expertise in any sorts of professions — general laborers, technologists, constructors, managers, scholars — whoever are able to adapt to changing conditions. A particular specialization in some specific field, a mono-

production does not make much sense any longer, the mining sector remaining the only one where it still dominates. The unilateral territorial division of labor, the mono-productive regional specialization inducing an unreasonable transportation upswing are also being avoided. Increase in integration of processing sectors, diversification of production, a regions' greater self-sustenance combine with de-concentration of production and de-urbanization to alter the scene of national economies. They will contribute to levelling their development, removing the ugliness of exuberant specialization, reducing transportations of raw materials and fuel. This is the beginning of the new super longterm cycle in organization of production.

6. The strands of emerging overturn in technological base of the society as listed above came together, providing ideal opportunity for *rise in efficiency of re-production*. That is going to be an irregular and undulate process. Characteristic of a transitional stage, and most particular of a time of its outset, during the general crisis of a system, is decline in the growth indices which comes down, for some periods and some countries, to absolute degression of rates indicating efficiency of social re-production (i. e. productivity of labor, material and capital input per unit of production, ecological safety). For instance, the annual rates of fall in the GDP in 1989 — 1994 for countries sustaining the transitional stage amounted to 9. 6 %, while for the previous five years annual growth rates amounted to 2. 8 %. At the end of transitional phase, i.e. in the beginning of the future century and especially at the phase of formation of post-industrial technological mode of production high growth rates of efficiency are expected, aiding to relieve social and ecological tensivity. At the maturity phase the growth rates will keep at a relatively low level. They will be falling again at the phase of decrepitude, manifesting the emergence of a new total technological crisis. (Partial crises will arise whenever there will be replacement of technological orders). It is readily seen that the more efficient a technological overturn is, the more benefit it profits to the countries in its van, while this process is always developing incoherently and slowly at the periphery.

Here are the tendencies to reveal efficiency of a new technological mode of production during the first half of the future century:

— considerable expansion of the assortment and improvement in the

quality of production, most particularly in consumer goods and services meeting diversifying and rapidly changing needs of humankind. Commodity values will become an increasingly individualized sphere, targeted on narrower market segments and demand of specific groups of customers;

— rise in growth rates of national income per each employee and per capita, per unit of material resources and fixed assets involved in production. Miniaturization of technology and use of waste-free technologies will be instrumental for this process;

— improvement in ecological standards of production and manufactured goods; decrease in, and more comprehensive use of, natural resources involved in production; repeated curtailment in polluting environment; a rising claim to ecologically safe meals and transportation facilities;

— relative, or absolute, so far as having inflation minimized, decline in prime costs, stimulating progressive shifts in production and consumption;

— improving ergonomic characteristics of applied technology, beneficial for organizing better conditions, safer and more creative labor;

— cutting the technological distance between developed, post-socialist and developing countries.

Note should be made that the beneficial effects of technological overturn will not be felt immediately. These are to be the distant consequences of committed labor and vast expenses put into renovating huge industrial machinery. With different countries they will be realized in different time, and at the outset of transitional period reverse tendency may prevail.

Still, transformation of the technological base of society stands is inevitable, its transit towards a next spiral of cyclical dynamics naturally determined. The whole question is whether mankind will stand the task of making advantage of this regularity, to put changes into a right drive and reap benefit from the process.

Transformations in economics on the way to the post-industrial society. Let us have a look at a next stage of the society's pyramid — economics. What are those changes that come, or are expected to come over structure of re-production, dynamics of economic orders and market relations, and management in the course of formation of a new civilization? Here are

major tendencies in outlines.

1. The last quarter of the 20th Century witnesses a crucial shift of the trajectory of *economic dynamics*. Global economic crises rage, following each other in a succession. Russia and some other post-socialist countries are facing a falling off of production which is unprecedented for a peace time. A new wave of poverty and starvation flushed over developing countries. People discovered that the industrial mode of production, either socialist and capitalist, has lived it all; and that time was ripe to replace it by the post-industrial one. All the world was taken by radical economic changes which none could match ever since the industrial revolution. We witness capital shifts in the very structure of economics and property. The state came to be much less interfering in processes of re-production. There is survival of market and competition. Medium-sized and small businesses recuperate, especially in production sector and services. In the international trade, primary and fuel goods give the way to hi-tech commodities and tourism. The old economic order is delivered of the new one in spasms and agony. People re-ascertain their values, moving their emphasis from unconstrained quest for economic growth upon the quality of life, sustainable development, ecologic safety.

2. *The post-industrial economic mode of production* will go through the phases which are roughly correspondent to those of the emerging civilizational cycle: origination during a transitional period (from 70-s of the 20th till 20-s of the 21st Century); extension (till 60-s of the future century); maturity (35 — 40 years); decrepitude (25 — 30 years); and then a next overall economic crisis can occur, manifest of transition to a next economic mode of production. Thus the time frames of the future civilization will be more contracted than those of the industrial society, and changes will come about by a more intense pace.

What are the main features of the post-industrial economic mode of production, which is currently going through formation, the process we witness and take part in?

It can be called neither capitalism, nor socialism. It is a new economic order inheriting the features of industrial economy, which are adapted to the radically changes in social condition, and acquiring essentially new features of

the post-industrial one.

Three decades ago prevailing was an opinion that communism was the common destiny of the human race. We looked at the contemporary epoch as a transit stage from capitalism to communism. And then, all of a sudden, our sight became different. The communist faith holding as inevitable oncoming of communism and extinction of the market economy collapsed, most crushingly in the socialist countries and their recognized leader, the Soviet Union. The latter divided into 15 independent states currently proceeding on their own way to the future. While socialism remained an official ideology in few countries, even there it sustained serious transformations. Here and there, but most frequently among elder generation, still are adherents of the communist ideals, yet their numbers are strongly dissipated.

The bitter historical experience compelled a majority of intellectuals to re-consider again their attitudes about the future destiny of mankind and tendencies as to dynamics of economic order. Most of them, disillusioned in socialism and communism as they were, changed over to a vehement support of capitalism, seeing it as a prospective ideal. However, objective examination of historical tendency reveals that capitalism as a social and economic order having been prevailing over last centuries has come to a general exhaustion of its potential and has entered upon a last stage of its life cycle. This does not mean that it is doomed to a soon crash, as was the prediction voiced by many a prophesying Marxists. In 1979 F. Braudel wrote: 'No one is there who would dare to doubt the fact that the current crisis which began in the 70s does endanger capitalism. This crisis is something more troubling than one in 1929 and likely to crush corporations of the first rank. But the odds are that capitalism as a system will live out this crisis. Economically (I am not saying 'ideologically') it can even come out from it in a firmer state'. (9. V. 3. P. 647). This prediction came true. Both economically and politically capitalism is more firm than it was before the crisis of 70-s. Additionally, now it has no adversary comparable with the socialism headed with the USSR.

Nevertheless, capitalism as economic order based on capital's exploiting hired labor and unrestrained yearning for profits has no future. Moreover, the order currently dominating in the developed countries has less and less to do with the features of the classical capitalism.

It is difficult to expect for a social revolution to occur in the developed countries, bring a new ruling class to power and alter relations in economics. More likely is another tendency — a gradual evolutioning of current relations which will acquire more features of the post-industrial economic mode of production as they are transforming to a new quality.

3. During a period of formation of the future civilization there are intense *shifts in the structure of economics* which have to do with a gradual humanization of economics and promotion of advanced technological orders. Now we would like to look at the tendencies of these shifts as to the economic structure of the developed countries which are in a van of movement towards the new civilization. Let us take advantage, as we did in the three previous chapters, of economic reproductional cyclical macro-model. To begin with, we identify three periods: original (the 60s of the 20th Century); a late transitional period towards the post-industrial civilization (the 20s of the 21st Century); an eve of the maturity stage of this civilization (the 2060s). Let us take into our consideration two scenarios of prognosis — a pessimistic and an optimistic. (Table 8). It should be reminded that the figures shown in the table are more or less approximate, intended to convey a general representation.

It is likely that there will be shifts in re-productional or sectoral structures, yielding more gain to sectors supplying personal needs by commodities and services (with reduced share of nourishment and increased share of personal equipment), intellectual product, machine-building and scientific complexes by the curtailment of share of intermediate product and sectors of raw materials, and also that of state consumption and the military industrial complex.

Table 8. The prognosis over the dynamics of economic structure during the period of formation of post-industrial society.

(percentage to GDP)

Blocs of the macromodel and parameters	the 1960s	Scenarios	the 2020s	the 2060s
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1. *The re-production structure* — sectors of re-production

1.1. Personal consumption	25	opt/pess	31/28	137/31
1.2. State consumption	18	opt/pess	15/17	14/16
1.3. Inter-mediate product	22	opt/pess	20/19	16/18
1.4. Prime product	12	opt/pess	9/11	7/9
1.5. Intellectual product	8	opt/pess	12/10	14/12
1.6. Market infra-structure	15	opt/pess	13/15	12/14
Total	100	opt/pess	100/100	100/100
<i>2. The branch structure — economic complexes</i>				
2.1. Agroindustrial complex	10	opt/pess	6/8	4/6
2.2. Production of personal goods and services	16	opt/pess	21/18	24/21
2.3. Machine-building	15	opt/pess	17/15	19/17
2.4. Fuel complex	10	opt/pess	8/9	5/8
2.5. Construction materials	8	opt/pess	6/8	5/6
	9			
2.6. Construction		opt/pess	7/8	6/7
2.7. Transportation	8	opt/pess	8/9	7/8
2.8. Military industry	10	opt/pess	6/8	4/6
2.9. Science	3	opt/pess	6/4	7/6
2.10. Social complex	6	opt/pess	8/7	10/8
2.11. Foreign trade	5	opt/pess	7/6	9/7
Total	100	opt/pess	100/100	100/100

3. The hierarchical structure — levels of re-production

3.1. Households	15	opt/pess	13/14	10/12
3.2. Private enterprises	50	opt/pess	53/51	54/52
3.3 Regional level				
	10	opt/pess	13/12	16/13
3.4. National level				
	20	opt/pess	14/17	12/16
3.5. International level	5	opt/pess	7/6	8/7
Total	100	opt/pess	100/100	100/100
4. The technological structure — technological patterns				
4.1. Relict patterns	12	opt/pess	6/8	3/5
4.2. The third one	33	opt/pess	10/12	4/6
4.3. The fourth one	55	opt/pess	20/29	8/10
4.4. The fifth one	—	opt/pess	40/33	16/30
4.5. The sixth one	—	opt/pess	19/16	46/37
4.6. The seventh one	—	opt/pess	5/2	23/12
Total	100	—	100/100	100/100
5. The economic structure — properties				
5.1. Individual properties	25	opt/pess	32/26	41/33
5.2. Small private	8	opt/pess	12/10	15/12
5.3. Large private	44	opt/pess	32/41	20/32
5.4. Corporate	5	opt/pess	8/7	10/8
5.5. State-owned	12	opt/pess	8/9	6/7
5.6. International				
	6	opt/pess	8/7	10/8
Total	100	—	100/100	100/100
6. Structure of costs				

6.1. Material costs	30	opt/pess	25/28	21/24
	10	opt/pess	13/11	16/13
6.2. Depreciation				
6.3. Remuneration of labor	15	opt/pess	16/17	18/19
6.4. Social consumption	12	opt/pess	14/13	17/16
6.5. Accumulation	13	opt/pess	15/13	14/12
6.6. Unproductive consumption	20	opt/pess	17/18	14/16
Total	100	opt/pess	100/100	100/100

4. Radical changes will come over *relations of property*, in distribution of social wealth among different groups.

First, share of individual properties will grow sharply, and most significantly of personal housing and home belongings (means of transportation, equipment for home needs, furniture, footwear and clothes). This tendency became first perceived in the developed countries in the second half of the 20th Century. Personal property grew outpacingly in the U.S.A., accounting for 47.5 % of national wealth in 1985. But judgements based on indices for the wealthiest nation of the world are no to be held good for the rest post-industrial society. For this reason the bloc 5 of the table 8 indicates more moderate figures and relatively lower rates of the growth in personal properties in the transitional period. Rates of changes will substantially accelerate during the second long-term cycle, as a more reasonable and economizing model of consumption will make the spread over the world. The share of personal properties will be mainly growing due to a larger number of people who can afford high quality dwellings, furniture, equipment for home use as computers, audio and video tape-recorders, faxes, etc., cars and other vehicles.

Secondly, correlation of small and large private property will change. If for the initial period the proportion was 1 — 5.5 in favor of large property, it will curtail to 1 — 2.7; 1 — 4.1 at the end of transitional period, and to 1

— 1. 2; 1 — 2. 7 at the stage of maturity. The cause is the accelerated advancement of smaller businesses, in services and production of personal goods in the first place. However, large properties will retain their dominant positions in sectors with a high level of socialization, especially in raw materials, fuel and transportation. Inter-national companies will operate under the control of society and stern anti-monopolistic legislation.

Thirdly, the share of state-owned property will drop considerably by the expense of de-militarization of economy and privatization being put intensely into effect in all the post-socialist and developed countries. This goes to limit opportunity for the state bureaucracy to interfere in processes of reproduction. Yet there should not be expectations that the state property would soon be extinguished. It will keep over a part of natural resources, some means of transportation, weapons production, national cultural wealth, etc.

Fourthly, some gain of the share of collective property, in 1.8 — 2 times can be expected, resultant from the increase in number of companies owned by their employees (the tendency which made itself felt during recent years in the USA) and co-operation processes among small manufacturers.

Fifthly, growth of integration will lead to augmentation of share of international properties, inter-state ones as well as ones possessed by international concerns, consortiums, joint ventures, etc.) However, progress of internalization will be somewhat more moderate than it was in the 1960s and the 1970s.

Hence tendencies of dynamics of properties are in many aspects contrary to those that were in the industrial society. However, the picture will not be the same in different regions of the world. During the 90s share of state-owned and co-operative property will contract in several times in most post-socialist countries as a result from privatization, establishment of stock companies, and bankruptcy of numerous state enterprises.

5. Shifts in the cost structure of re-production make it possible to discover tendencies in dynamics of *distribution*. While capital availability makes an upswing, thus increasing the amortization rate in value of gross output in 1. 3 — 1. 6 times, rate of indemnification fund will grow somewhat lower due to a considerable reduction of material costs in production. By retaining the current rates of accumulation and cutting unproductive

consumption, the society will be able to extend a share of product which is allotted for personal consumption, both individual and collective. With the factor of a total rise in production taken into account, it speaks to an upsurge of individual consumption per capita, especially in the second long term cycle.

As to the distribution sphere, tendencies of changes are incoherent here. From the one hand, the equalizing tendencies which have gained a wide spread in the former socialist countries may be overcome, together with paternalism of the state and parasitism on a part of employees associated with them. Personal incomes stand dependent upon results of activities in labor and business, thus contributing to motivation. From the other hand, there are such factors as growth in polarization of incomes; a spreading gap between rich and poor, in particular in post-socialist and developing countries; increasing number of beggars and paupers. Meanwhile, the undercover re-distribution of wealth profited from the expanding shade operations, corruption and abuses is brisker than ever. However, all these tendencies should be looked at as ones pertaining to a transitional period and changing to the contrary once the post-industrial society will develop on itself.

6. Major changes are going to take over *trade and exchange*, the sphere of market relations. Market is becoming less distorted and constricted as it overcomes both the state-socialist and the state-monopolist regulation. Bureaucracy now is allowed a poorer opportunity to interfere in controlling prices and moving the product. Expansion of small and medium-sized businesses will re-endow market with competition. The post-socialist countries face with revival of share markets and movement of securities (shares, debentures, bills, promissory notes).

The state, however, cannot stand observing indifferently element of the market game. It will determine the general principles of this game to secure it against those who gamble unfairly, and it will take an immediate part in this game, too, by carrying out emission, placing the state orders for part of products or purchasing them, developing and implementing anti-inflation programs.

Will inflation survive in the future society — or will prices reflect persistently cost dynamics of goods (in keeping with changes in their use value)? An ultimate victory over inflation we may never know, for there are too many factors responsible for deflecting the price dynamics from

progression of costs. Nevertheless, a soaring inflation able to take off rocketing into hyper-inflation, would threaten a normal course of re-production, de-valuate personal earnings and savings, and result into re-distribution of gains in favor of leads of inflational boost. Since that, inflation will be always kept under the society's control. The tendency as to relative or absolute reducing prices for new production will increase, stimulating progressive shifts in re-production and consumption structures and broader demand for products of innovations.

7. The tendencies in re-production and economic relations which has been listed above will call for a radical change over *management of economy*, making it softer — 'softsized' — and putting up with the principles of the market game, not oppressing independence of participants, allowing initiative and broader opportunity for manufacturers and customers. Management will tend to be more democratic within enterprise, particularly once an employee and an employer are one and the same person (small businesses or shareholders who both own and work at the enterprise). While joint companies may further diversify (concerns, consortiums, holding or trust companies, financial groups), businesses will be normally kept under extensive social control. Taken together, all these are contributing into entrepreneurial flair, vein of a novelty, an individual responsibility for the company's successes. The advancement made by Japan in this direction is most impressive.

8. New tendencies will penetrate into approaching the rates of *efficiency of re-production*. Former records such as in economic growth, rise in productivity of labor, and a level of real incomes in the developed countries are likely to stand, in view that all them resulted from outpacing expansion of the military complex, intense consumption of power resources and raw materials, exploitation of the developing countries, depredation of natural resources. At the same time, services, characterized as they are by an essentially small share of previous labor input, will obtain a greater share. Here are some new targets for economic policy to be aimed at: sustainability of development, with a lower range of cyclical fluctuations; ordering demographic processes; decline of material input per unit of production and specific consumption of natural objects; decrease of contamination, and improvement of natural environment; rise in standards of living; bridging a

gap in standards of living of different strata; the curtailment of dangerous spread between the developed and developing countries. New targets will struggle to a greater influence through a transitional period to reach crucial domination under the second long-term cycle.

Hence the whole system of economic relations will be subject to a radical change during the formation of the post-industrial civilization, and a few crucial tendencies observed in the course of last civilizations will come to reversal.

Radical changes in the sociopolitical life. Logics of the chain reaction in the social life is always determined by changes in human beings, technologies and particularly these in economic positions of groups of people. Thus, radical changes in economic structure cannot fail to result into new standing of classes.

The classical industrial society at the sunset of its life, in the mid-19th Century), set forth two perfectly delineated classes, confronting each other, and yet unable to exist separately. These were the class of hired workers deprived of means of production, and that of capitalists, the proprietary class of those who owned means of production, employing proletarians to draw the surplus value which might have shaped into industrial profit, profit on sales, interest on capital, dividend yield, ground rent. Smaller bourgeois groups such as farmers, craftsmen, petty traders seemed to have been a mere survival from the past. Workers, capitalists, petty bourgeoisie yield a share of their incomes to the state to maintain an army, bureaucracy, police, courts and to support free-lancers such as artists, writers, solicitors, etc.

For all its lucidity, this picture became increasingly haze as early as in the late 19th Century, its components dividing and merging. The second half of the 20th Century witnessed emergence of new tendencies which are going to affect seriously the social life's appearances.

Division of *bourgeoisie* generated a few social groups, their interests lying in explicitly different spheres. Monopolistic bourgeoisie standing on the top of bureaucracy, senior army officials, and heads of the criminal world have grown into a power adverse to social progress, interested in militarization of economy, in blowing 'hot spots'. Drawing on the international economic power, this stratum stands desperately opposed to mature changes.

But it is *petty proprietors* that give their support to the process of revival. They are farmers, small manufacturers and traders, owners of innovation companies, cafés, restaurants, etc. The more is a small businesses' share in the gross output, the greater is their social potentials and mightier their political influence, the more their votes will be critical on elections. Edging to this class are many representatives of 'free-lancers' who set up law companies, art galleries. Share of petty entrepreneurs will account for more; such factors as de-concentration of production, development of modern communications technologies and miniaturization of technologies push this process forward.

The figure of *the working class* became different. It is no longer the destitute proletariat. Qualified workers have their own houses, cars and shares in businesses. Scores of thousands who have been crowding huge industrial monsters belong to the past. Those operating automatic lines, data processing, communication systems, or creating computer programs come to be seen as the key producers of material wealth and services.

Employees in private and public sector face the spreading divesification in their own turn. Part of them, top managers, enter into ruling classes. As they adjoin the bourgeoisie elite, they adopt the conservative social orientation, impeding radical reforms or trying to take advantage of them for their own sake. The other, and most numerous part of employees, has virtually merged with the working class.

The stratum of *pensioners* becomes increasingly extensive. They live by their benefits, or are engaged in their households, or earn additionally in services or production. Whenever inflation eats away their benefits, this stratum, however, becomes a social combustible.

As things stand today, a base for social overturn has shrunk. It consists as much as of radicalist youngsters and intellectuals, the unemployed, paupers looking forward to their share of loot if and when the obscure time come. But there is a majority which stand to loose too much and therefore is strictly opposed to revolutionary violence, unwilling to face unpredictable consequences of overturns.

But who, then, serves as a chief engine for pushing progress forward under this conditions? In the first place, these are vigorous young who look for

a weightier share in the economic succession and politics. These may be representatives of creative professions, being aware of the urgency of changes and affecting public consciousness. These are intellectuals with technological background who are carried along by new leaders. These are young servicemen and top rank workers.

Now, we can more easily make out an outline of *the social structure of the century to come*. It includes a few number of the major social groups and a multiplicity of their varieties.

1. *Qualified workers in the sphere of re-production* — manual workers, technologists, program-makers, scholars, constructors, teachers, office employees;

2. *Small and medium-size businessmen* running their own companies in industry, agriculture, construction, transportation, services.

3. *Pensioners and rentiers*, making their living by incomes from former labor inputs or interest dividend yields.

4. *Major businessmen, top level of office employees, army servicemen, leaders of political parties, barons of the criminal world*, — the stratum comprising few numbers, but possessed of overwhelming economic and political power and standing in opposition to democratic reforms.

Among groups identified by age or sex a growing influence will be won by the young and feminist leaders. Each group puts their own interest first. The young are going to assume the role of leading promoters of changes, while women, reflecting the growing female involvement into re-production, particularly in media and information, claim leadership in social and political life.

The transitional period saw an unexpected inflammation of the national and racial violence. In the late 60s — the early 70s the U.S.A. was stricken by hordes of black protests. Black majority took over political power in South Africa, putting an end to decades of racial clashes. The priorly dominant tendency to disposal of national differences and growth of mixed marriages has changed for an upsurge of nationalism, in culture as well as in politics. The struggle for resurrection and consolidation of national sovereign states, a blessed opportunity of the local elite, was ardent again. Some of the federative

states has parted (the USSR, ČSSR, Yugoslavia). In many cases, the rise of nationalism has to do with territorial claims, wars and international conflicts (the Caucasus, former Yugoslavia). National movements have enough political power to be reckoned with.

However, the wave of nationalism is circumscribed by the certain limits. Having taken up a burden of power, the national elite is growing increasingly aware of the fact that for this power to be secured, it should keep and maintain equal relations with other nations in their own country as well as abroad. As intoxications of the national jingoism pass, more sensible and moderate approaches gain the upperhand. We look forward to a golden age of national cultures and to a firm alliance of nations within a single country as well as internationally.

In the sphere of *politics*, the chief tendencies of the transitional period are:

a) decline and decay of political parties which would unite great masses and form a base for the totalitarian regimes in the former socialist countries and dictatorships; these parties do not get out their votes, losing their electorate; however they may still survive in the developing countries.

b) political pluralism; emergence of numerous political movements and parties representing interests of different social groups and struggling for votes, but however unable to be crucially influential;

c) relief of political rages and a growing apathy among electorate during smooth periods in political life, to be replaced for periods of the sharp acuteness and radical re-arrangements of forces when political frenzies are running strong

Regularities in the cyclical dynamics of political relations which proved themselves relevant to the past will hold good for the future. We can speak of a long-term cycle lasting from the 1970s till the mid-20s of the 21st Century and including three of four medium-term cycles 15 — 20 years each. One of these, finished at the outset of the 90s, was the reflection of an unfolding crisis in this sphere, resultant from transit to a new semi-centennial cycle. The second one, embracing the 90s, will come to an end in the middle or the end of the first decade of the 21st Century. It has introduced radical

transformations into political scene, causing enervation of the communist influence over politics. It ended into the collapse of socialist political order in the USSR, Eastern Europe, and Mongolia. It brought about an upsurging wave of national conflicts. And it caused an increasingly frequent succession of political leaders. The third medium-term cycle will stand till the 20s of the next century, setting off tendency to integration of political forces, establishment of a political order which best fits to the new political reality. In the course of the second long-term cycle, which is to run till the 2070s, the post-industrial society will spread wide abroad, extending over new countries and refining mechanisms for self-realization. At this stage, number of armed conflicts will drop, and area of disarmament will expand. Day will come when warfare will be no longer recognized as a way to realize political ambitions.

A personality's enhanced prestige, humanization of society, new correlation of political and economical agents at the transitional period are all them essential factors to bring changes over *state and law*.

The last quarter of the 20th Century saw a deep crisis of the state rule, with which none of those which had occurred ever since the transitional period to the industrial civilization stand equal. This process has taken on relatively mild terms in countries traditionally oriented to democracy, such as the U.S.A., Great Britain, France, Sweden. At the same time, it has externalized into the atmosphere stricken with much more radicalism and toughness as has been in Italy, and, more so, in Russia and the other CIS countries. Most of the developing countries has not yet faced up to these transformations. What tendencies take place in this sphere now, and which of them are going to gain momentum?

First, the tendency to minimize interference of the state in reproduction and social life has become prevalent. Since as early as the late 19th Century the state increasingly insisted on taking on regulation of anything which developed at all levels of the society's pyramid. Though done on behalf and in the name of social benefit, this was essentially a matter of the dictatorship of ruling elite. These processes reached the apogee in totalitarian states which may differ by ideological strain, but were just the same in their commitment to put under an ultimate control all regions of social life.

But this order was originally cracked and then crashed as early as in the

1970s and 80s, in some totalitarian countries, and in the 90s in almost all the rest of them. Tendency to essential curtailment of the state interference in various spheres became increasingly apparent. The first to quit the area of control was the spiritual life. Scholars, men of letters and arts, contributors to newspapers, dissidents worked like trojans to unmask the image of all-mighty and merciful state in the eyes of citizens. The collapse of planning system, revival of market, liberal economic reforms cut opportunity for the bureaucracy to put economic processes under its control, to distribute social wealth as it would see expedient, i.e. most beneficial for itself.

The state is gradually settling down in a niche that it will occupy in the future society. It will deal with protecting human rights, freedoms of economic entities and social movements against abuses and infringements; act as an umpire in multiple conflicts and arguments; set down legislative 'rules of game' in economics and social life and see to abidance by these rules; prognosticate, choose, and implement national policy; support basic innovations; carry on, as a society's agent, some commitments in view that entrusting them to private agents or companies may be too risky or unefficient (for example, control of pollution rates, support of depressed areas); struggle against crime; combat assaults from abroad; govern foreign policy; secure citizens and companies off the country.

The second tendency is that structure of the state power is changing. The idea of separation and balance between the three branches of government (i.e. legislative power, executive power, and judicial authority) is accepted by an increasing number of states. But it will be the very end of transitional period before the three powers will come into balance.

Thirdly, the former tendency to centralization on the top changed for the reverse. Power began to be distributed among local (municipal) authorities. Most countries have effected reforms with just the aim of handing down more functions to them. That was a step enhancing democracy of the state power and brought it closer to the needs of people. There will soon be a moment when the optimal correlation of central, regional and local authorities will be achieved.

Fourthly, there have been changes in mechanism rendering the authority of the state. The democratic electoral system has established itself

firmly. The state bureaucracy is more willing to employ professionals.

The society's control over bureaucratic proceedings and malfeasances in office is largely carried out by 'the fourth power', i. e. by mass media, and particularly television. Being telegenic is an important feature of a politician who hunts people's votes. Indeed, struggle to take over media in transitional periods is a tough undertaking in many countries.

Fifthly, more people are prepared to recognize supremacy of the statute law. Rules of law are more complemented and updated these days in such a way as to assure men's rights and equality for all. A touch of conservatism has always pertained to the law as one of its important merits, an antidote for daring ventures and subjectivity. But a lag in updating rules of law presents just another chance for arbitrariness and voluntarism. Hence many countries witness today an increasing number of initiatives in legislative process.

International political relations have evolved into a new quality these days. They abandoned the two-systems confrontation which was a life-blood of international political rivalry since 1917 (superseded for a short period of confrontation between the nazi and anti-nazi coalitions). The most powerful nation at the moment claims total hegemony over the world. But changes which currently got underway over the international climate leave no chance for such a claim. All the tendencies of transitional period stand in opposition to the probability of the monopolized world.

To begin with, there are countries which stand upon their own claims for leadership in certain regions of the world. Japan, China, India, Germany and Russia will not have any other imperious influence.

Secondly, interregional alliances are gaining strength — the Western European or North American, to take an example. Changes in Western Europe are of especial significance. 'The general European idea is making way on the continent. The European process begins to be more and more humanly characterized, so that one may hear today of 'the Europe of citizens' and 'the Europe of man'. Processes of democratization keep pace with those of national and religious resurrection, and there is a sensation of an intense quest for moral and spiritual ideals, for harmony within society, and that between man and nature. In contrast with this, the marked feature of our time is abundance of 'hot spots', expansion of local civil wars on the European territory,

xenophobia, ethnic clearances, racist and terroristic wars. The society finds itself standing in general civilizational crisis which penetrates into morals, faith, ethic attitudes, human environment. Hence a strain of creativeness is as much an attribute of current Europe as a strain of decay. The new climate call for a compromise between economic growth and social justice, geopolitical interests and national yearnings to be achieved. This climate will foster accord and tolerance. What goes on in the Europe of geographic and economic integrity, though housing, as it still does, different civilizations, in the Europe which we now discover and create, is, above all, search of ways for global human reconciliation'. (40. P. 7 — 8). This search is of a crucial significance for formation of a new post-industrial model of political, economic and sociocultural relations.

Thirdly, international bodies such as UNO, UNESCO, UNIDO, World Trade Organization, the International Court and others become apparently more instrumental in governing political inter-state relations, forming and maintaining rules of international law, settling, though often inefficiently, international conflicts. There is certainly still a long way to go before arriving at global government and global law. Nor this aim is likely to be achieved before the end of the next century. But there is a fixed tendency that separation, aloofness and animosity in international affairs are being gradually terminated, and a growing acceptance of the fact that nations living on the little and fragile planet of Earth share common basic interests which need to be safeguarded.

Tendencies of transformation in the spiritual sphere. The radical changes deeply affecting all spheres of social life cannot fail to penetrate into the sphere of spirituality and intellectual work (science, artistic production, education, ideology). More often than not spiritual transformations precede overturn in economics and politics, preparing grounds for changes to come over these spheres. However, there is some lateness in fathoming meaning, structure and scale of the current change-over. This may be only a peculiarity characteristic of a transitional period from one historical supercycle to another; no outstripping development of the social thinking was apparent at the sunset of ancient society. Anyway, this may stand as an explanation of the painfulness and the durability the of current changes, the vagueness of

people's representations about them, and lingering adaptation to the new reality.

Indeed, this transit started with the expansion of *the spiritual crisis*, felt and unfolding since the World War I. The economic, technological, ecological, sociopolitical crises of the 70s and the 80s, which science failed to foresee, or mitigate for most part of population, followed one another in an appalling succession to discard the trust in the unbound potentials of the human mind. Euphoria and scientific romanticism have made way to disillusion and skepticism, faith in the other world and occult sciences. There was an outflow of anti-culture, reared by a media's huge support. Age-long moral foundations have been torn off to yield the ground for cult of violence and overindulgence. Religious fanaticism has recovered life; many sects arose, including most savage ones. Education stood in dismay, wondering what sort of knowledge and rules of behavior it would be that should be taught to young generations. Intellectual and moral degradation of mankind seemed a real danger of these days. Surely, these tendencies were revealed in an unequal proportion in different countries.

Nevertheless, the spiritual life in the late 20th Century was subject to a major overturn. This refers, in the first place, to development of premises for *a scientific revolution* to culminate in the early years of the future century. It is not only physics, but sciences of man and his life, and primarily biology, that are leading the way. Started in the mid-70s, an entirely new stage in the development of biology — geneal engineering — has been evolving, originally with regard to microorganisms. No efforts and pains are spared to decipher the human genom, a genetic code of heredity. Scientific study approaches bio-field and extrasensory perception, the abilities which some people claim. Scientific discoveries in this field are still to be done. The formation of a new way of looking at the substance, abilities and capacities of man has got underway. Evolved are new theories on origination and development of the Universe, influences imposed by space onto the life of society and individuals.

Social sciences are to face up to a particularly troublesome transformation, as they largely keep to obsolete tenets and dogmata which have nothing compelety to do with the real life. This life cannot be forced down in

the Procrustean bed of devoid theoritization. Attention should be turned to actual processes. It is vitally important to discern, generalize, and speculate on new facts and phenomena, to give precise definitions to regularities and tendencies of social statics, dynamics and genetics, scrupulously testing them by means of the retrospective analysis and prognosis. The adequate scientific picture of the society, its structure and dynamics, which may be fit for social understanding and social transformation, cannot be evolved prior to this. And there is still a long way to go. It will take several decades of a thorough investigation, dawning discoveries, and failures for such picture eventually to be produced. But even now ultimate atoms of new paradigms begin coming into being in many regions of social science. As soon as they stand a scrupulous selection, are tested by life and borne out valid through prognostications, they will develop into a skeleton, a backbone of new scientific outlook.

It can be expected that demand will rise as to output of scientific research in the beginning of next stage of the transitional period, and the science itself will effect a breakthrough by creating pleiades of bright discoveries and major inventions. Being implemented, they will immensely contribute to an updated, a more high-tech and a more efficient production. But relapse to the former, extensively high rates of dynamics of scientific potential, as were apparent in the 50s, is nigh impossible. These extensive rates were, above all, due to militarization of economy and revolution in military technologies. Nor fundamental science, neither development of new brands for personal consumption or new technologies need heavily employed research institutes or design departments. The general process of decentralization and diversification will affect science, as well.

During the course of scientific overturn number of workers occupied in fundamental research will rise. At the same time, share of those who are occupied with perfecting obsolete generations of technology which can hardly find any market because of a low competitiveness of goods produced with its help sharply decline. The spirit of private enterprise and the inventiveness of a bysiness-like type ready in expedients will ensure flow of investments of which new science stand in need to gain a second wind. Enhancing the science's prestige in eyes of the society, that will entail the young coming to

this sphere.

The resurrection of the sublime culture is the tendency of paramount importance, taking place in the transitional period. This tendency was fostered by humanism of the emerging post-industrial civilization which have creativity as its core and essence. Through the pains of crisis, which was brought out by Pitirim Sorokin and other scholars, the industrial culture deliver a new tendency to the renaissance of art, to the disavowal of mass anti-culture.

The developed countries increasingly place emphasis upon culture today. J. Nesbitt and P. Eburdin name the revival of arts second among the ten global tendencies of the 90s. 'The last years of millennium will see radical and revolutionary change of priorities in leisure and its costs. The 90s will call into existence a modern renaissance of fine arts, poetry, dancing, theater and music all over the civilized world. This will stand in sharp contrast with the recent industrial epoch, when the military was a specimen, and sports were a metaphor... As art will claim a more important role in the society, private individuals, corporations, large and small cities will work out their own destiny under the influence of images, characters and style of life in works of art'. (39. P. 70, 71, 90).

It can be said, speaking rather inexactly, that we witness a second Renaissance, since similar tendencies are to be found in the age of Renaissance in the 14th — 16th Centuries. But what we witness is the second coil in the developmental spiral of the global culture, which has to do with specific features of a modern stage of historical progress, and the formation of the post-industrial civilization.

What are the features and factors of the tendency to resurrection of the sublime culture during the transitional period?

1. This tendency constitutes a critical element in a wider flow of *humanization of the society*, surge of the spirituality, priority of man's creative abilities. The 21st Century will be that of strongly marked creativeness, soaring of the human spirit which transfigures surroundings and draw on esthetic criteria as its ultimate guidance. Ever since their early ages, men fostered craving for beauty. Sometimes that revealed itself in great artistic performances, rendering human person more harmonious. It was no accident

that the Renaissance in art and great scientific revolution in mediaeval Italy concurred, for these are twins originated from ardent fits of the human spirit.

The post-industrial epoch is characteristic of a bright self-fulfilment and the realization of spiritual potential of individuals and ethnic groups or nations. The cultural peculiarities which were depressed under industrial standardization recover life. Culture becomes the most important sphere of personal, ethnical, and national self-fulfilment, a major instrument of interpersonal and international intercourse. Thus, the neorenaissance of the sublime culture smooths a high road for the formation of post-industrial civilization and the spiritual world of man of the 21st Century.

The current changeover will have an obvious impact upon contents and functions of art and styles. Domination of various forms of modernism which makes a deliberate point of distorting harmonious integrity of man and nature, was due to the machinery age and a form of protest against dissection of the wholeness of human person. 'Endowed, as it were, with much destructiveness, the modernistic art is too chaotic and wanton to stand as a foundation to permanent artistic culture. But as a herald of protest against the prevailing sensuous form, this movement is very significant in a historical sense... Decay has gained a full strength today. Nothing can stop it. Succeeding it will be the ideational or idealistic art... It will take many pains and chaos of transitional period before the emerging new art, perhaps, the ideational one, will immortalize in its aspect unfailing impulse of the human culture'. (48. P. 462). That was a point of Sorokin's forecast.

This forecast was voiced in the late 30s of the present century. However, it was many years later that time was ripe for the succession of artistic styles. Preceding that was a period which covered almost completely the second half of the century when the modernistic art prevailed in the Western artistic culture, opposed by attempted confrontation using the utmostly ideologized 'socialist realism'. However, both these trends are only the ultimate branches of the decaying tree of the sensuous art. They will be succeeded by the resurrection of the sublime art, which expresses the harmony and the beauty of man and the world around him, the tragedy and the deeds of man, his penetrating thought. It is no accident that the classical art, masterpieces of antiquity and Renaissance have come into fashion these days.

The future belongs to the art which, instead of making people coarse and morally ruined, creates and unfolds beauty in them and nature. For art is a school of harmony and beauty in the chaotic and troublous world of ours. School here does not mean domination or imposition of a single artistic trend or style. Harmony and beauty may be only fulfilled only through multiformity. We will still have a wide alternative choice of works to meet multiple aesthetic tastes of different people and their different moods. Imposing certain schools and styles which claim monopoly in tastes, using organized campaigns through mass media, will be falling away. More important, a wider range of people, rather than few representatives of the elite, will find it available to be acquainted with the masterpieces of national and global art, as they will discover the use they can make of modern technologies, telecommunications and tourism to this end.

2. Indeed, the peculiar feature and the advantage of the new Renaissance of art is that this Renaissance rests upon modern high technologies, upon *informatisation of art and aesthetisation of education*. This makes it possible to discern and render masterpieces of art, opera, music, ballet, architecture onto modern information resources such as videocassettes, CD-ROM, holography, etc., and to put them in circulation by hundreds of thousands of copies, show them on TV, including a cable one, integrate them into international and national informational networks, Internet, and the system of aesthetic education. This will help to make masterpieces of national and global art available to every family, every school, and to create the sphere ennobled by art for each man to live in from infancy to the declining age.

By forming information picture of the world, the modern informational technologies effect overturn not only in culture, but also in other spheres of the spiritual life. This lended a case for R. F. Abdeyev to characerize the post-industrial civilization as an informational one: 'The change of ideological outlook on the eve of the third millennium was reared by the revolution in communications and information... The mass computerization, introduction and development of the updated information technologies led to astonishing advancement in education, business, industrial production, scientific research and social activities. Information has grown into a global, and largely inexhaustible, resource of mankind which entered upon a new epoch in the

development of the civilization...' (1. P. 7).

3. The sublime culture becomes an *economic resource*, a beneficent sphere to allocate capital on the surging market. J. Nesbitt and P. Eburdin make out a few cases to illustrate turn for the sublime culture in demand. In the years 1965 — 1988 the annual attendance of museums in the U.S.A. rose from 200 mln up to 500 mln. In Western Germany 300 museums were built in one decade. In Great Britain culture and art earns \$ 17 billion per year, on a par with the British car industry. The exhibition of Van Hogh's works in the Metropolitan Museum in New York attracted 253 thous. visitors from other cities who spent \$ 223 mln in hotels, restaurants, and shops. In 1988 the museum shop sold goods for the sum total \$ 53 mln. and made net profits \$ 9. 2 mln. That year U.S. corporations' support for art surmounted \$ 1 billion. (39. P. 78, 83, 85, 94, 98).

4. The rebirth of art also contributes to a more intimate intercourse between national cultures, becoming an important link to the internationalization of the spiritual life. This tendency, however, owes nothing to unification and standardization of culture which are characteristic of the industrial society, — it is just this revival of national cultures and vivacious change between them that stands behind it. We do not need to have the language of art translated to understand what it really means. It underlies any human intercourse, and it rears the formation of global cultural continuity and global cultural heritage.

Great transformations are also to come over some other spheres of culture. Today, bookprinting is supplemented, if not superseded, with perception of information from TV and video screens, or computer and multimedia displays. At that, a viewer enjoys the possibility to discern among various sorts of information according his own will. Electronic media is now really a booming sector. Archival materials and book rarities, being copied to the laser disc, are preserved forever and become commonly available via satellite communications, telefax, and e-mail. There is no further need in sitting long hours in the reading-rooms once it is possible to receive via communications network a required literature and documents and to use them without leaving 'the electronic cottage'. Later on even more compact and capacious information bearers will be invented, perhaps, on ???crystalline base, rendering real predictions of some fantasy authors, and building up

structure of a next information revolution about the mid-21st Century. That does not mean that current libraries or archives will be abolished. They will be of use not only for admirers of rarities, but as the original sources for technological bearers??? of information. Their functions will alter, and they will re-open their storages for millions of users by a means of informational technologies.

During the transitional period exceptional changes are to come over the sphere education. The deep crisis overtaking it was apparent as early as in the late 60s and the early 70s. Much like all preceding overturns in this sphere, the current revolution embraces a few decades for about half century, going through a number of stages. A first stage (from the 70s to the 90s) was marked by quest of new ways and shapes, which would be adequate to changed conditions of the society's development, and of ways to do away with functional ignorance and professional incompetence, building up into a real danger today. At a second stage (first decades of the 21st Century) content of education will be made adequate to with unfolding scientific revolution, while informatisation of learning process will aid to a multiple rise in its efficiency.

What changes are to come over this sphere out of the emerging overturn, as followed from the tendencies which have already arisen?

There are a number of trends by which contents of education is changing. A first one is the revision of textbooks currently housing a sum of knowledge which largely reflects the general outlook and conditions of the industrial society, now receding to the past. It will take more than one decade, especially if one considers a sluggishness of educational system, a succession of two generations of teachers and that of several generations of students before a system of knowledge to be handed over will be adequate to the post-industrial civilization. But, even so, it will still require for the emerging civilization itself to be built up and crystallize, to acquire more obvious and intelligible forms, to get rid of chaotic confusion of the transitional period. There is no point in teaching and systematising the chaos.

The other trend is the humanization of society: terminating technocratic and exceedingly pragmatic inclinations; distributing study of the arts over any educational stage; combining professional education with aesthetic and ethical ones. Only all-round educated person who learned

enough national and global culture, and are capable of realizing the multi-structured cyclical dynamics underlying any process, and genetical grounds in which they are rooted, can master a quick adaptation to the rapidly changing society, avoiding the destiny of chips driven by turbulent torrent to an unseen whirlpool.

The third direction is that education today tends to embrace wide scope of technics, both for secondary and professional teaching. Every man has more and more to cope with the increasingly technically sophisticated generations of technologies, in his professional field and ordinary life as well. Man is forced to have the extensive background in technics, which could aid his adaptation to updated technologies and new technological orders.

But it is impossible to be introduced to a unceasingly growing and rapidly developing knowledge (or professional lore), if one relies upon traditional methods of learning. These are also subject to radical transformation in the transitional period. Orientation on absorption of as much amount of general or specific information as one can mechanically keep in mind does not pay well, for this information is getting obsolete quickly, impeding the smooth and easy motion in tumultuous world. Inertia of accumulated knowledge deteriorates ability for timely identifying new tendencies in life and quick adaptation to them. Conventional moulds prevent scientist from imaginative work on untraditional tasks. Graduate of a respectable university gets in mess whenever facing up with unfamiliar situation. Many tenets crash during transitional periods. It seems that history is getting more and more apt to playing tricks.

We have no other way out to offer than to be focused on creative pedagogy, to develop imaginative skills of students. These should be expected to set and solve untraditional tasks, to switch quickly and efficiently from one mode of mental activity over to another, and to form a multi-dimensional, volume way of looking at subject, processes, and their partners. They will have to learn how to combine the specificity of approach with the globality of outlook. That presumes a profound and elaborate knowledge not to be learnt mechanically, but rather with aim of solving puzzles which life is so eager to submit. The ratio of mastering knowledges is a deal higher with such a presumption than can be learnt by a tedious studying aimed at passing the exam

and receiving the diploma. It is vitally important to effect the combination of learning theory with practical deeds.

Approaches as to organization of education are changing, too. The current system of junior and senior education spreads over the term of more and more years to set forth 'specialists' who have to study a-new in their offices or factories. In doing so, they do acquire practical skills, but do not utilize and thus abandon most part of the knowledge to which they were introduced during the course of their studying. Failing to meet new requirements, this system gradually recedes to the past. It is being replaced by the system of unceasing education which comprises all stages of human life and paves a way for development of intellectual, physical, spiritual, and moral potentials of person. This system is characterised by a diversity of contents, forms, and methods of education, and it embraces both secondary education and professional training. It is beneficent for a swift mastering of scientific achievements, realization of novelties, and, in the long run, for improvement of living conditions.

A system which is essentially based on the aforementioned principles is now at work in Japan, France, Sweden, and some other developed countries which took up orientation on additional training and advance courses for workers in various fields through all stages of their labor activity and, in particular, at changes of occupation. But they also seek to improve primary, secondary, and special education.

The system of unceasing, perpetual, and cyclical education may include 5 cycles, with a specialised focus laid upon each stage.

1) *pre-school education* — which may take place both in family and kindergartens. The emphasis here should be placed upon developing pedagogical skills with parents, providing them with textbooks, manuals, video films, computer games, and organizing really good TV-programs for kids.

2) *school providing general education* — primary and secondary (high — US) school, which are based on a systemised, spiral-built study, from easy towards more and more complicated study knowledge. Finally, students are expected to embrace all knowledge which are vital for man in the modern society. But more important is that this system must be stimulating for them to develop their imaginative abilities and knowing how to find a right path in the

world of tumultuously changing knowledge. In that the emphasis is laid upon study of the arts, natural sciences, and the basic ideas of information. Secondary education has to be flexible, focused on children with different abilities and different concerns.

3) professional training of various levels and degrees (these may be college, university, internship, etc.) provides students with a scope of specific knowledges and skills to be applied for efficient work in the chosen field of occupation in the future. Characteristic of these institutions for the transitional period are the following features: the extension of training background — overcoming the too technical specialisation which would make people always stick to their profession and impede their adaptation to the next generation of technology, to the new employed position, or to the new kind of work; the humanization of education — combining disciplines of common scientific background and disciplines with regard to specific fields with upbringing of culture, general outlook, the morals, and developing physical skills and strength, in order to educate a specialist, or a manual worker, of rich personality who would be able to meet various challenges of the post-industrial epoch; the politechnization of education, meaning that students are increasingly involved into acquaintance with various kinds of modern technology with which they are to deal both at their works and their homes; the organic involvement of learning with work in material sector, services, or with scientific research, in order to get student accustomed to the rhythm of work, and to force him work out competitive business decisions.

The current spread of international exchange in culture and education will be making visits and internship abroad an indispensable element of specialised education for a growing range of teachers and students, which will help to level educational standards in different regions, to develop quick adaptation to high technologies, and to attain a level of quality and services which would fit market demands. Also, these exchanges may be of benefit for mastering one or two foreign languages from age of childhood.

4) *adult education* during the course of their active period. The need to update and to supplement to worker's knowledge and skills perpetually and unceasingly is imposed by the following facts: knowledges acquired in colleges are quickly getting obsolete; the rate of succession of generations in

technologies is getting outpacing; new technological orders are spreading over; moving to a new jobs, changing professions and occupations is the common occurrence today due to professional promotion, migration, bankruptcies, etc. Adult education is carried out in several ways. The most common and constant one is to obtain new knowledges and skills through one's own labor efforts, or from books, television, video, inter-active discs, etc. However, that is enough. Workers must be granted opportunity to evaluate in a systemised and profound way what they have learnt, to acquire new professions through various courses, business schools, colleges, etc. This sort of adult education has become wide spread in the developed countries, where it is carried out at public expense or paid by the company.

The new training becomes of vital importance during the transitional period, when former knowledges are no longer adequate to the drastically changed life, when unemployment is the danger that is sustained or threatens to many, changes of occupation are more frequent than ever, and professional incompetence is wide spread. All these necessitates that most of workes need to pass a training courses within relatively short terms, which naturally demands huge expenses.

5)education of pensioners and unemployed members of family. These people have an opportunity for broader concern in childcare and culture. With some help given, they can make their lives more bright and interesting. There is no need in a long-term special education; the whole idea is to develop self-education, various clubs, TV programs, etc. All these may have a significant impact on how these people carry out child care, maintain their homes, and on their health. It is the state (together with pension and charity foundations), that should cover most of the expenses related to the 5th cycle.

The technological overturn cannot fail to exert intense influence upon the sphere of education. Technical devices of education are now subject to an unseen transformation. The central link of this transformation is the growing informatisation: broad use of computers, television, video, interactive resources of multimedia, as well as equipping educational institutions with training simulators, devices, outfit for laboratories, and other technologies meeting international standards. Japan and the U.S.A., the countries where families and education institutions are densely equipped with new

technologies may be called the leaders in computerising education. Teaching computer programs and video films allowing for easy learning became wide spread there.

Transformation of spirituality has overtaken ethics and, even more intensely, ideology. The dynamics of both is inseparably tied with and reflects changes that take place on all the levels of the social pyramid, as it determines ideals, purpose focuses, and rules as to human behavior.

The previous chapter revealed the modern crisis of ethics which became obvious in the 20th Century and was thoroughly investigated by Pitirim Sorokin, Karl Jaspers and other sociologists and philosophers as far ago as in the 40s.

It is worth noting that Pitirim Sorokin payed much attention in his work as a scholar to the formation of alternative, humanistic ethics. He was the fonder and head of the Harvard Research Center for Creative Altruism. Sorokin came to believe that ‘unselfish creative love is the power, which, as being used sensibly, is able to 1) put end to aggressive clashes between individuals and their groups 2) make hostile relations become friendly <...> Love may influence globally on international policy and pasify international conflicts <...> Unselfish and adequate love is the vital force as to physical, intellectual, and moral development. After all, altruists live longer than egoists. Children who did not see much love grow morally and socially retarded. Love is a powerful antidote against felonies, illnesses, suicides, hatred, and anxiety neuroses. Love performs functions understanding and aesthetics. It is the best means to educate and ennoble mankind... And, finally, at the current catastrophic moment, augmentation of ‘production, accumulation, and circulation of love’s power’, or significant rise in altruism of certain individuals, groups, institutions, and cultures, — particularly universal spread of unselfish love — is crucially improtant for preventing new wars and reducing an enormously high interhumane and intergroup animosity’. (49. P. 226 – 227). So numerous preachers of hatred, intolerance, and violence of nowadays should be reminded of these wise conclusions of the eminent sociologist of the 20th Century. These were the fundamentals of the ethics of the 20th Century.

Human ideals, his moral rules and deterrent principles as to

relationship with other people and society and to treating cultural values may rest either on faith, or on knowledge. Since the late 18th, and especially in the 19th Century religion yielded grounds under the triumphant pressure of knowledge, scientific discoveries and rational comprehension. Marxists took up a militant crusade against religion, trying to eliminate it by force.

But now, at crossover of epochs, both faith and knowledge have shaken, no longer offering reliable account of this world, or at least spiritual equivolence of a sort. We lived to see the time of universal crush of ideals. This brought about three tendencies in religion and the morals, which were most acutely felt in the late 20th Century, and are, at their most, a reaction to the spiritual degradation, liking to levelling and unifying people, which was characteristic of the industrial world at its last phase.

The first tendency is spread of nihilism, an approach denying not only faith, but science and all moral regularities, as well. By the flair of genius F. Dostoyevsky grasped this tendency at its very emergence and reflected it in the speculations of Verkhovensky. His novel 'Demons' anticipated many extremis of the oncoming socialism of the 20th Century. Ideologically, nihilism owes much to the super man of Friedrich Nietzsche. The overall crisis, the collapse of ideals, and the chaos of transitional period set off a powerful surge of nihilism, mainly among youngsters. Nihilism discards traditional moral rules. It recognizes only law of might and depreciates the humane life. Nihilism is a rationalisation for crime, corruption, and moral decay. But eventually it confronts rejection on most part of society, and, as the chaos of the time of changes is being overcome, it is dislodged to lower depths, to underworld of society, to where it actually belongs.

The second tendency is that the religious rebirth, currently witnessed all over, takes on an orthodox, even fundamentalist flavor. These movements may casually come to the power and dictate their will to the nation. This tendency has been best conspicuous in the Moslem world, where it is planted in rather a social soil: the rapidly growing population outpaces the growth of productive forces and urges people to commence a war for re-division of the world wealth. This war, this yearning, as it happened scores of times in history, is wrapped by religious cloth. The Catholic and Orthodox Churches are also gaining greater influence, which various sects are doing, too. The

most surprising transformation take place in Russia and some other post-socialist countries. The inveterate atheists, former party bureaucrats, became quick to attend services in temples, pledging their deep-rooted, but priorly concealed faith. But now, exposure of cross (which Orthodox believers wear next to the skin) became a way to embellish the body, and as much a common fashion, as jeans are. This yearning *to be* believer is caused by disillusion and fear of uncertainty, the need to fill the spiritual emptiness which has currently superseded the communist ideals, and to find rest and peace in a spiritual harbor among wide maelstroms of weird, unaccountable occurrences. This tendency is of some positive weight, to be sure, in that it relieves human sufferings and consolidates the strongholds of morals. But there is, however, little chance that it would persevere in the future. Suffice it to think of fundamentalist features, though ill-matched with its substance of goodness, that make their progress to demonstrate to the world intolerance to other believers, claims to perform a key guidance in making of the outlook of young generation, determination to share wealth and state power. Of course, the global religions, in disregard to what Marxists prophesied, will survive in the 21st Century, to occupy more modest a niche than they do now and to satisfy traditional needs of believers.

The third tendency is emergence of a variety of new religious movements, some of which attract adherents, and then evaporate without leaving a trace. Usually new religion and sects are trying to rely on the moral rules belonging to all human race. However, some sects are to be found, which call for violence, murder, and suicides (eg. 'satan' sect in the U.S.A., or Aum Senrikyo in Japan).

Although religious rebirth will hardly survive long in the 20th Century, but at any rate it is a way to restore proportions between material and spiritual which were broken by dogmatism and industrialism. For the time of transitional period, the following statement of an American futurologist will do: 'The dawn of a new historical epoch and return to the old faith witness that we are ready to apprehend both sides of the human nature... In approaching the notable year 2000 mankind will not discard science, but by religious resurrection we affirm a spiritual emphasis in what now is a more harmonious quest for improving our lives and lives of our neighbors. (39. P. 341).

At the formation and maturity of post-industrial society, ideals and rules of ethics which are more adequate to the substance of this humanistic society may develop, abandoning both nihilism and religious rebirth of the transitional period. The kernel of these ideals is a self-affirmation and development of human person, an optimistic acception of the stage-like, cyclical progress of human society, and tolerance towards ideals, beliefs, and ethical rules shared by other people. The beginnings of such ideology and morals are ripening today in many countries, but as yet are not prevailing.

4.3. Local civilizations in the 21st Century: clash or partnership?

The cyclical dynamics of local civilizations. While opinions concerning the beginnings of history vary considerably, scholars generally agree on tracing local civilizations from the verges of the 4th thous. B. C., when a new sort of human communities originally consolidated, sharing cultural ties, mentality, and a social and state order.

The run of history of local civilizations is related with *regularities of cyclical dynamics*. How do these regularities express themselves?

1. Every civilization runs within its own *life cycle*. It goes through the stages of origin, vigorous growth (formation), maturity, and crisis (rupture), the latter stage resulting either in transition to a new generation of civilization, or, on the other hand, in decay and evanesing from the scene of history. The Russian philosopher N. A. Berdyayev succeeded in putting this idea into a more colorful exposition: ‘Destinies of all nations, societies, and cultures in history, taken together, demonstrate that all of them pass through the same different periods — these of the origins, childhood, maturing, golden age, and then these of the old age, decrepitude, fading, and, finally, death. All national cultures and all societies underwent this process of perpetual decrepitude and dying.’ (6, P. 151).

2. There is one problem that deserves to be the subject of a very thorough consideration. Why and how is it possible that a mature, prosperous, and vigorous civilization experience rupture, and then decay? In his investigation of this problem A. Toynbee assumes that it is militarism that is to be blamed for this transformation. For militarism is the most common and wide-spread cause of fractures in civilizational body for as long as four or five millenniums. Militarism breaks civilizations, dragging local states into the fratricidal strife. By this suicidal process all the social fabric turns to be a fuel for the all-devouring Molech.’. (50, 222). The period of rupture and decay is not a linear development, and an original portent of death may be succeeded by a short term of recovery. But this process, in its own turn, results into the

rupture manifest of the new recession, one that anticipates the end of civilization. 'History of every civilization bears a touch of decay. Decline which commences at the moment of rupture, is followed by recovery... However, this process, in its own turn, ends up with the fracture manifesting a new decline which is not to be followed by recovery, but results into ultimate decay.' (Ibid., P. 477). Thus the rhythm of rupture is two, or even three-stroke. But these are mere tumults of the doomed and dying social body.

Conquest or extermination on the part of a more powerful neighbor was another and formerly quite common a cause for local civilization to become extinct. However, these developments frequently occur by a time when civilization has already, or nearly, been ruptured. A push from outside therefore lends the hand for a reaped fruit to fall down.

3. *The succession of generations of local civilizations* is a general process usually taking place at joints of historical epochs, as civilizations and historical supercycles make way to their successors. Equilibrium in correlation of forces of various civilizations is broken, and conditions of historical progress are subject to drastic changes, its epicenter frequently shifting to some other position. This is not to say that all civilizations of preceding generation vanish or belong to the past thereafter, to be succeeded by civilizations which lack deep historical roots in former epochs. Such idea will be against the law of heredity in historical process and sociocultural dynamics.

Toynbee identifies 4 lines embodying parallel, though sometimes intercrossing, cultural developments which in its own turn fall into three generations.

Minoan — Helladic — Western;

Minoan — Helladic — Orthodox;

Minoan — Syrian — Islamic;

Shumer — Hindu — Hinduist.

This picture, however, fails to be complete, for it does not take into account civilizations preceding the Minoan one which enjoyed independent development. Such are Chinese, Japanese, and Middle Asian civilization, and a number of civilizations in the New World. Considering the latest data in this field, and with a due account of the fourth generation of local civilization which is currently developing, it may be helpful to create chronological

catalogue of a sort to contain history of local civilizations.

4. The regularities of heredity, mutation, and selection can be learned by the sociogenetical approach to cyclical dynamics of civilizations, succession of their phases, and transition to civilizations of a next generation. During phasic transit within a life cycle of civilization, its genetical kernel, chiefly sociocultural genotype, is preserved and enriched by the mechanics of hereditary mutation and selection (the latter being chaotic rather than purposeful) of progressive elements from variety of mutations (departures from normal development) coming out at breaking points of trajectory (so-called points of bifurcation).

While the content of local civilization, including its geographical sphere, population, economic, social and political relations, technological basis, varying significantly at different stages and phases of its life cycle, it is still its own self as long as its hereditary kernel remains the same. As civilization transforms into a forthcoming civilizational type, its hereditary kernel undergoes some most radical changes, either falling into separate parts, or, on the contrary, fusing with a kernel of the adjacent civilization. Changes become conspicuous in cultural and historical type, geographical borders, technological and economic modes of production, and the system of state and law. Every time when a life cycle culminates into decay and partition, the fragments of civilization are picked up by, and associate with, neighboring civilizations or by those who vanquished in disastrous warfares.

5. Proceeding on the course of historical development, local civilizations change leading positions, exercising influence upon the rest of world. This was the service Mediterranean civilizations filled with ancient communities. Later on leadership passed to Western civilizations. 'In extending its influence the secular Western civilization of the present day turned into the global one, indicating the precise meaning of the word, by spreading its network throughout all living civilizations and primitive communities.' (51, P. 142). But this triumph is to be ceased sooner or earlier. 'The Russian communist salvo will seem something inefficient to us when a deal mightier civilizations of China and India will take on the Western challenge in their own way.' (Ibid., P. 133).

The forecast that the illustrious historian brought out in 1947 is most

likely to come true in the coming century.

Local and world civilizations should not be confused or, on the other hand, looked at as mutually excluding. Employing both historical notions yields multi-dimensional and volumetric view of historical progress in its spatial and temporary outline. While the concept 'world civilizations' manifests stages and historical epochs of the development of human society as a unified genetic entity, the concept 'local civilizations' add spatial and temporary aspects to dealing with, and understanding of, this process.

I propose that the emphasis should be placed upon the unity of world historical process. This unity expresses itself along three dimensions — a vertical (world history of mankind as a unified community), horizontal (heterogeneous complex of many kinds of local civilizations), and temporary (cyclical dynamics of both trends in their unity and interweave).

One of the most difficult problems is reciprocal reference between dynamics of world and local civilizations with regard to stages of historical development. A few basic positions are to be identified here:

1. At every single moment different local civilizations stand on different stages of social dynamics. While their leaders make an uneasy way to the future, most of others are manifest of the present, and there are always those belonging to the past, or even to epochs gone long ago. There is no doubt that these proportions are subject to permanent variation, especially in the course of transitional periods.

2. Leading civilizations are the first to usher in transition towards the next civilization, a forthcoming period in human history. They are not necessarily more developed regions, leaders of a receding period. In their being organically incorporated in the doomed, yet still dominating order the priorly leading civilization is desperate to extend its leadership and generally set against changes. But it yields its positions to young and aggressive ethnoses that have been feeling themselves deprived of their piece of a pie at civilizational festivities. They are less prepared to retain whatever it was what connected them with a former epoch, they are all for bidding adieu to the past. Yet rush into the future requires a sufficient level of knowledge, stock of energy, and economic and military power. It is also possible that some forces in formerly leading countries will manage to give up their conventional biases

and become fit for demands of the new epoch and therefore able to maintain their position in the vanguard.

Where is the energy for the active strata taken from? Where do these people, who are eager to struggle resignedly for the radical renewal of the world, obtain their force? Alexander Chizhevsky related this source with an intense flow of the solar energy during culminating periods of solar activity. Lev Gumilyov places an emphasis upon cosmic energy. Arnold Toynbee points out urgent need for society to meet the challenge thrown out by the developmental stage. Thus the former two place the source of changes outside the society, while the latter discovers it in the society itself. We find Toynbee's position more persuading.

3. Transition towards the new world civilization comes about in three successive echelons. The first one contains the local civilizations (a certain group of countries) that paved the way for the new society. The second echelon comprises civilizations characterised similarly to the first group, yet falling behind in their development due to some causes. However, as far as use is made of their accumulated experience, they are able to catch up with leaders and aid to expansion of the new global civilization. As this process is over, it is possible to state that outlines of a new society are basically finalized. The most lengthy way is that of civilizations of the third echelon for their being least prepared for this transit, as they still cherish former epochs and lack forces to effect a historical break-through. In these civilizations, the period of transition is likely to proceed into a long-age delay and acquire quite fanciful shapes. Yet even this echelon eventually fails to remain 'untouchable' at edges of the high road of historical progress. Civilizations which made progress ahead of the others carry along those lagging behind, establishing in them breeding grounds of a new world and comprador-like social strata, as was in the case of the formation of industrial society and tremendous colonial empires.

Sometimes such a 'multi-echelon' transition witnesses a 'passionary' impulse able to bring countries over a row of several steps of history and put them among leaders, as in the case of the former British colony turning into the world power of the U.S.A., and the recent developments which have led to the formation of industrial society in other former colonies and dependencies.

4. The succession of global civilizations heralds an onset of transformation and regrouping of local civilizations on their way to a new developmental stage, and causes geopolitical situation to change radically. Several civilizations will be burst by the flame of transitional period, while others will bifurcate, and still the others will dispose of main elements of the old society to transform into a new one, rounding off a stage of their development. Transition to a new historical supercycle entails formation of a new generation of local civilizations.

What is, then, the key mechanism for this lengthy process that embraces life cycle of a few human generations? Does it involve changes in single local civilizations which combine to create outline of the new society, or is it a need of entire human community in moving towards some new coil of historical spiral? Differences in answering this question will chiefly depend on whether it is acknowledged or not that the development of all mankind comes through the stages of global civilizations on the lines of some integral scenario. We assume that it is changes in internal and external background of the human existence taken as the integral subject of historical process, in spite of its undeniable complexity and contrastness, that serve as a key mechanism to induce transformations. The leading local civilizations are at the head of these developments, carrying along others. It is the ascertained fact that there are cycles in global history.

Let it therefore be stressed that the co-operation of world and local civilization in statics, cyclical dynamics, and genetics, much as variable and contradictory this process could be, is at work as a spring that drives forward historical progress, effecting its transition from one phase to another, which in the turn affects a destiny of every single nation or ethnos. There could be, however, no illusion that a lucid and complete picture of this sophisticated mechanism operating through millenniums of human history has already been obtained by historical science, and so much by rest of social sciences. This picture still bears a number of blank points and contravenial, incompatible patterns. Clearing up these problems will aid to the postindustrial paradigm currently being evolved by the social sciences, but, more important, it will also serve for every citizen of the Earth, every social and political community to attain a penetrating sight of retrospective and perspective in the whole of

social development and its single elements.

The inter-action of local civilizations. The historical experience of inter-action of local civilization reveals a few tendencies to be denoted throughout 5 millenniums of the process by which their generations succeedingly replaced each other.

Civilizations of the first generation were comparatively poor in numbers, as the population of the Globe hardly reached 80 millions in 1, 000 B. C. , and were scattered over a vast territory to the North of equator, where the natural conditions were most beneficial for agriculture and stock-farming. The highlights of these civilizations were the fertile plants of the great rivers of Nile, Euphrates, Tigris, Indus, Ganges, Hwang Ho, and Yangtze. The relations between them were rather slack in the beginning, but they grew to be more intense as time went on, with trade links becoming vital, stimulated by conquests, grab of slaves, competition in military technique. Then 'knots of civilizations' emerged in places where the civilizational inter-course was exceptionally intense. This was primarily the case with Mediterranean where sea routes facilitated contacts. It was there that the ancient civilizations sprang up — in North Africa (Egyptian), Mesopotamia, and South Europe (Minoan civilization). Less intense was the Eastern knot, in which ancient civilizations of India and China developed. Perhaps pre-Columb civilizations of the North, Central, and South America can be related to the civilizations of the first generation, too, in spite the fact that they reached prosperity thousand years later than those in the Old World did since changes were coming over local civilizations more slowly in this area than in other places.

Therefore, local civilizations gained much experience in the inter-action before III — II millenniums B. C., including clashes as well as mutual partnership and penetration, and it is since this period that a certain rhythm of cyclical development of whole mankind can be observed, at least as much as its vanguard is concerned.

The process of inter-action between local civilizations of second generation rose onto a step higher in ancient society intended to mean here a single historical stage comprising development of mankind both in East and West. Due to the acquisition of skills in handling iron tools and bogara-type agriculture, the area occupied by these civilizations vastly extended. The

population grew increasingly dense, yet it was distributed unevenly in different parts of the world, with more than two thirds of it belonging to Asia, and Europe falling behind about 4 times.

Meanwhile, the process of inter-action in Mediterranean intensified overwhelmingly, expanding over the Black Sea region since the 8th Century B. C. No one can dispute a chief role played here by the Greco-Roman local civilization, which survived through three successive stages — Hellenic, Alexandrian, and Romanic, and lasted for more than one thousand years. The Eastern knot also established firm positions, with the Chinese, Indian, and Persian civilizations reaching the utmost results. Cultural exchange underwent substantial growth, too; and the same is the case with co-operation in economics, military affair, trade, military and state order, financial mechanisms, and state government. Chief civilizations of this period turned to be a magnetic field that attracted neighboring regions and created premises for them to develop their own local civilizations, or at least sprouts of civilizations (i.e. Kingdom of the Bosphorus and the state of Scythians).

This period is characterized by numerous wars inside and between civilizations, especially in Mediterranean. Simultaneously, there went on the formation of world empires, which afterwards emerged far beyond the boundaries of local civilizations, promoting dissemination of their culture, economic and political orders, agricultural and military technology. The short-lived empire of Alexander III (Macedonian) and the Roman Empire, the most powerful and sustainable one, ought to be mentioned in a first rank at least for their being universally known. But there were less famous and expansive ones still to be enumerated: Assyrian (the 9th — 7th Centuries B. C.), New-Babylonian and Midian (the 7th — 6th Centuries B. C.), the Persian Empire of Akhmenides (the 6th — 4th Centuries B. C.), Mauryan Empire in India (the 4th — 2nd Centuries B. C.), Chin (the 3rd Century B. C.) and Han (the 3rd Century B. C. — the 3 A. D.) in China. Shifting of borders and nations, together with colonial conquests, resulted into a mixture of cultures, as it was in Black Sea Region.

The fall of ancient society was concomitant with the collapses or painful transformations of former leading civilizations, partitions of empires, and great migration of peoples. On the one hand, this process eradicated partly

the cultural legacy, but on the other hand it afforded possibility for aggressive barbarian tribes to adopt technologies and culture of the antique. This prepared a material for a new social and cultural fusion to yield local civilizations of *third generation*.

For almost a millennium the Byzanthian Empire stood as a bulwark of Hellenic heritage, exercising its influence far upon its neighbors, stirring up the beginnings of the Slav civilization, and providing it with a significant part of its own sociocultural heritage. For a short period the epicenter of historical progress escapes towards the East, to make home in ancient China and India, and in the newly-born Islamic World which adopted profoundly from the Ancient Greek culture. However, as soon as in the 12th — 14th Centuries, since the Renaissance, the leadership returns to the motley-composed Western European civilization that had inherited many traditions from the Roman Empire. After Columb had discovered America, and the vast Spanish Empire had been founded, after the revolutions in the Netherlands and England had triumphed, and the British Army conquered India, Australia, and Africa, the Western European civilization began dictating its will and rules to the rest of the world, pushing aside or subduing other civilizations. The same developments laid the base for the dissemination of the Western culture, technology, economic, and social and political orders throughout the entire world. The industrial revolution, followed by the globe-wide distribution of the benefits it had reaped, did not fail to make this base even more solid. Mechanization stimulated international unification of cultures, style of life, educational standards, and mentality.

Number of local civilizations of a third generation decreased considerably, but they formed an hierarchy of a sort. On the top of this pyramid rested the all-mighty Western civilization. The inferior levels are occupied by the Orthodox civilization, headed by Russia and confronting with the West, though yielding to it enormously both politically and economically, by the dependent Islamic and Far-East civilizations, and by the subdued Hindu civilization.

A correlation of forces like that must have temporarily set backwards differences that had separated civilizations before this. ‘The end of history’ seemed to be looming from a close perspective, foreshadowing emergence of

‘The Golden Age’, in which every nation would obtain a block of faces to be readily identified as the part of some enormous working industrial mechanism. Communism and fascism took up these tendencies to contribute significantly into eliminating social and cultural differences and national features, and those who was unwilling to abandon them. Mankind approached a verge of the near transforming into the all-world plant where no touch of individuality would be accepted.

The efforts Toynbee and his followers were making to demonstrate the essential inter-civilizational contradictions were thought to be a hopeless archaism, much as Spengler’s warnings concerning ‘the set of Europe’ were regarded as the extravagance of a lonely pessimist. ‘The Western secular civilization of the present day, — Toynbee writes, — turned into a global civilization, in the precise meaning of the word, by spreading its network throughout all living civilizations and primitive communities.’ (51, P. 142).

Nevertheless, the course of historical developments in the last quarter of the 20th Century brought evidence that it was too early to serve a requiem for the repose of the souls of deceased local civilizations. Relegating their social and cultural genotype that developed through ages proved to be a formidable issue. The end of the 20th Century witnesses the Renaissance of renewed civilizations.

Historical experience proves *the inter-action of local civilizations* mainly to develop through the following trends.

1. *Military — political inter-action.* Every local civilization and states which it comprises constantly contact adjacent civilizations (states). This interaction expresses itself in the two extremes (wars or military and political alliances), and in a greater number of intermediate patterns, — not necessarily meaning patterns of overall civilizational partnership or civilizational clash, for this is a rear thing to happen (for instance, Tatars’ invasion to Eastern Europe, the Crusades, and the encroachment of Napoleon to Russia). Generally, warfares and alliances set in between neighboring states involved into different civilizations. But any pattern of co-operation and rivalry does not fail to stimulate activated exchange in both techniques and methods of warfare, and rapid spread of basical innovations in this field (fire-arms, tanks, airplanes, nuclear weapons). It also aids to adopt effective tools of political

organization, as can be illustrated by the spread of parliamentarism in the 19th Century, and totalitarianism in the second quarter of the 20th Century. Since survival of states and destinies of people and civilizations depend on successes in war and politics, hence intellectual, material, and financial resources are concentrated for rivalry in this field. The expansion of militarism, uneven in principle, culminating during periods of war and military preparations, makes up the general tendency in economics and society at large. Achievements in military technology are employed in civilian fields. But wars and militarism anyway keep back civilizational progress, for the most active and qualified part of population is swept away from spiritual reproduction and manufacture of civilian goods to the military. Millions of people die through wars and warfares, material wealth ruins, and cultural and historical relics are being destroyed.

2. *Economic inter-action.* Contrasted and confronted to military conflicts, is the field of economic co-operation, based on the international division of labor, growing trade in manufactured goods and services, and gradual formation of continental and global markets. Market is a major peace-maker by itself, for it generates mutual economic interest in maintaining fabric of inter-civilizational and inter-national partnership. Fernand Braudel has carried on a thorough study of multiple shapes of trade and economic partnership between world-economics and different nations. (9).

Every historical epoch, every following global civilization makes its own specific contribution into consolidating and strengthening this fabric, into evolving shapes of economic inter-action, and developing of a world, and in the current epoch even a global civilization. By the end of 20th Century these include exchange in goods and services, monetary relations, inter-national financial structures such as the Global Bank and the International Monetary Foundation, intergrational unions (European Council, Asia — Pacific Rim economic co-operation, and NAFTA in the North America), trans-national corporations, training courses for managers, intensive exchange in experience in economic management and business operations, etc.

3. Inter-action in the spiritual sphere. Partnership in this field does not profit as self-obvious advantages and benefits, as in the field of economics. However, it contains the inner reserves for inter-civilizational inter-action,

progress of mankind from one historical stage to another.

Science allows for no borders. Scientific discoveries, hypotheses, and theories rapidly sweep along throughout the world. However, contribution into global progress in science made by each local civilization, and ability to approve and, more significant, to implement effectively new scientific ideas, are unequal. They depend on intellectual rate, scientific and innovational capacity of every country and every civilization. In this area, inter-action ranges tremendously, — from exchange, translation, and publication of works of science and science information, license exchange — to conducting international scientific conferences and joint researches which form international intellectual property.

Things are more tough with *culture*. Each nation and civilization enjoys its own cultural treasure, unique and essentially distinctive. And if civilizational exchange in cultural values is carried on, developments in art and architecture taking over the whole world, with gradual unifying of technical devices with which culture is disseminated (printing press, radio, television, Internet), preserving cultural variability and avoiding standardization remains to be still important a task. Clash of civilizations resulted into their collapse is something that occurred many times in history (i.e., the death of Minoan culture). Wars, and especially the world ones, cause a tremendous damage of cultural legacy.

It is the general tendency of our time that national and civilizational cultures intensify their mutual influence, cultural exchange, creation of global space of information and culture, thus aiding to a better understanding of peoples involved into different civilizational communities.

However, there is one dangerous tendency in the period of the sunset of industrial society which should not be omitted. It is mass culture, called to existence by and expanded through media resources. It lacks national or civilizational features and drives back high and folk culture. Contrasted to this tendency, in the end of the 20th Century there are some signs of oncoming rebirth of Renaissance of high culture.

The field of *education*, too, is a field of revivalry and co-operation of local civilizations. National systems of education seem to become increasingly close to each other, with the general level of education going

upward. This reflects generally progressive developments in the spiritual life and the process of appropriation growing to be more complicated than ever. However, the rate of literacy enormously vary for different civilizations.

Partnership in education goes on in a variety of shapes, such as schoolchildren, student and teachers exchange, spread of professional patterns of education (universities for the Middle Ages, colleges during the 19th Century, and persistent full-time and distant education in the second half of the 20th Century), translation and publication of best textbooks.

Inter-action *in religious life* bears a double effect. From the one hand, the world religions help to form and to consolidate spiritual community of different peoples, ethnoses, and nations involved in a same civilization (i.e. Orthodox, Catholic, and Moslem religion). From the other hand, inter-confessional contradictions are responsible for a big number of inter-civilizational conflicts, religious feuds, and exteriotation of 'unfaithful ones'. The slackening of religious influence remained a sustainable tendency for inter-civilizational inter-action during the 19th and most part of the 20th Century. Yet since the last quarter of the 20th Century began the world religions, with many religious sects and beliefs coming into existence, brought about by the overall crisis of the spiritual sphere in the period of sunset of industrial society.

4. *Ecological inter-action.* There is no other field in which local civilizations take common interests so manifestly, than that lying between human communities and their natural environment, and being the scene of struggle with natural cataclysm, disasters, and increasing pollution. In as much as influence exercised by the reason upon the biosphere and the formation of the noo-sphere is growing (this process, according to V. I. Vernadsky, lasts for several thousands years), and danger of local and global disaster is increasing, this community of interests becomes only more evident. Yet carried along by their immediate objectives, and anxious of earning profits and attaining economic growth, more developed civilizations, such as the Western one, consume natural resources in vast ammounts and pollute the atmosphere, oceans and seas with noxious extracts. The same thing is true concerning countries with high density of population.

Ecologic inter-action of local civilizations may take the following

forms:

- enjoying uneven share in the use of natural resources of global significance, and pollution of the environment;

- combining efforts for eliminating natural disasters and catastrophes of inter-civilizational and global character;

- working out a common concept of sustainable development, a perspective ecological strategy, rigid international ecological standards, activities to keep ozone from being wrecked.

- establishing world-wide and international ecological organizations and foundations for designing and supporting joint ecological projects.

5. *The socio-demographic sphere.* The inter-action of local civilizations in this field is a delicate and complicated process. For this reason, it will be the last one to be tackled in spite of it being most important among other patterns of inter-action. Number of population, as well as its dynamics, is one of the main parameters on local civilizations. These parameters varied in different epochs. In the late 20th Century Chinese civilizations accounts for 24% of the population of the Earth, Moslem and Hindu civilizations both are 16%, Latin American — 9%, and African 5%. Taken together, these five give 74%. The population of Western civilization, which took the lead through the industrial epoch, amounts to 13%, the Orthodox 6%, and the Japanese 2,2 %. (Table 9)

Table 9.

Percentage dynamics of shares held by local civilizations in territory, population and gross domestic product of the world (72, P. 85, 87)

Date	Western	Orthodox	Islamic	Sinic	Hindu	Japanese	Latin American	African	Others
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Territories under political control of civilizations

1900	38, 7	16, 6	6, 8	8, 2	0, 1	0, 3	14, 7	0, 3	14, 3
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1920	48,5	19,5	3,5	7,5	0,1	0,5	15,4	0,8	4,3
1971	24,4	19,7	17,5	7,5	2,5	0,3	14,9	8,8	4,4
1993	24,2	13,7	21,1	7,5	2,4	0,3	14,9	10,8	5,2

Shares of population under the political control

1900	44,3	8,5	4,2	19,3	0,3	3,5	3,2	0,4	16,3
1920	48,1	13,9	2,4	17,3	0,3	4,1	4,6	0,7	8,6
1971	14,4	10,0	13,0	22,8	15,2	2,8	8,4	5,6	5,5
1990	14,7	6,5	13,4	24,3	16,3	2,3	9,2	8,2	5,1
1995	13,1	6,1	15,9	24,0	16,4	2,2	9,3	9,5	3,5
2010	11,5	5,4	17,9	22,3	17,1	1,8	10,3	11,7	2,0
2025	10,1	4,9	19,2	21,0	16,9	1,5	9,2	14,4	2,8

Civilizations' shares in world economic product.

1950	64,1	16,0	2,9	3,3	3,8	3,1	5,6	0,2	1,0
1970	53,4	17,4	4,6	4,8	3,0	7,8	6,2	1,7	1,1
1980	48,6	16,4	6,3	6,4	2,7	8,5	7,7	2,0	1,4
1992	48,9	6,2	11,0	10,0	3,5	8,0	8,3	2,1	2,0

In the second half of the 20th Century, during the period of sunset of industrial society, major alterations in political and economic strength of different civilizations are being conspicuous. While Western civilization is giving up its positions, and near the end of 20th Century the same is doing Orthodox civilization, Chinese, Japanese and Moslem ones gain strength. The general shift towards the East is manifest, and it entails differentiation of the global economic space and undermines the supremacy of the West.

But apart from growing number of population, there is a gap in standard and quality of living which has been rapidly spreading during the years of industrial civilization. If, according to Fernand Braudel's data, in 1800 the Gross National Product per head in China exceeded Western Europe in 7.0 % and yielded mere 14 % to the U.S.A., and India yielded 30 % to the U.S.A. and 13% to the Western Europe, in 1987 India and China were behind the U.S.A. in GDP respectfully 22 and 15 times.

Social and demographic inter-action of local civilizations are carried on in various forms:

- migration of population (the great migration of peoples, Tater invasion, modern forms of migrations, etc). In any rate this process results into hybrid civilizations coming into existence with mixed ethnic content (i. e. the North American or Latin American civilizations)

- capture of war prisoners in the course of warfares with subsequent partial assimilation;

- increasing numbers of mixed inter-civilizational marriages;

- exchange in experience in sustaining of social equilibrium.

Global history has gained a vast experience in the formation and development of *mechanisms of inter-civilizational inter-action*. This experience is still waiting to be generalized and thought over. Anyway, a few sub-systems of this mechanism can be identified now.

1. *Inter-civilizational rivalry* for taking the lead on a certain coil of the historical spiral. As it is known from history, position of leader is never obtained forever, for different civilizations, peoples, ethnoses constantly struggle to win leadership and attain survival. Winners often claim to have

won sovereignty over the whole world (Celestial Empire in China, Empire of Alexander Macedonian, Roman Empire, etc.). But triumph does not last very long. Life cycle of leading civilization enters upon its final phases, making it yield a place in a vanguard to a new, younger and more aggressive civilization. This rivalry never really ceases. It sometimes tends to be exceptionally violent during inter-civilizational wars, exhausting all parties involved.

2. *Economic motifs of inter-civilizational partnership* are based upon direct and indirect profit to be created by participation in this partnership. Here are some examples of such profit: procuring services and goods which cannot be manufactured or produced in natural conditions of civilization (for example, subtropic fruits in Western Europe) or would require unjustified amounts of labor input; economizing on labor as resulted from exchange in goods manufactured in countries largely favorable to such production and then delivered into world markets; expanding of innovations aimed to satisfying newly-born requirements or minimizing expenditures consumed by this process; formation of a global economic space beneficent to exchange in trades, services and institutional experience. If economic progress happens to be quite efficient and rapid as seen from the outlook of global developments, it owes much to the partnership of local civilizations.

3. *Mechanism for modes and shapes of progress to be adopted from leaders by lagging countries and civilizations.* This mechanism is instrumental in synchronizing society's move between developmental stages. Thus there are 'donors'-societies revealing new perspectives for those behind. In their doing so, care must be taken to avoid destruction of originality and genetical kernel of adopting civilization which will bring it to completion of a life cycle. Aiming to impose its own model and way of living upon the rest of the global community is a dangerous line able to result into reducing genetical multiplicity and viability of mankind. That is why lagging civilizations display resistance to such unification in every possible way and show fanciful lot of inventionness as they are trying to preserve their original culture.

4. The mechanism of conquest is the most rude and violent form of inter-action between local civilizations. And at its utmost culmination, to be not an occurrence of which history is ignorant, conquest finally brings death

and collapse to defeated society, and subsequent assimilizing of its remains by conquerers, as was the case with Byzantine Empire. In other cases, on the contrary, conquerers were absorbed by the mass of those defeated, adopting their culture and economics (as happened with hordes of barbarians after they flooded ancient Rome). It also may well happen that vanquishers confine themselves to laying down tribute and establishing political influence, and do not ruin civilizational kernel of defeated peoples (the vassalage of Ancient Russia under the golden Horde), thus providing them with a chance for survival. But at any case, conquest resulted from clash of local civilizations turns into immense losses, throwing defeated countries back away for several decades, if not centuries. When describing the results of barbarians' invading into enfeebled Europe, J. Le Hauff, calls attention to this specific phenomena: 'The setback was expressed in numbers, in the first place, — human lives lost in vast numbers, numbers of ruined monuments of architecture and buildings; rate of population falling down; absence of works of art; ruined roads, workshops, storage facilities, irrigation systems, destruction of areas under crops. But the setback was material, too, as it was the scarcity in technique that exposed West unarmed for long centuries'. (28. P. 35-36).

Conquest may alter destiny of civilization and its geopolitical position. Jawaharlal Nehru supposed that India could have claimed to be industrial workshop of the world in the 17th Century, but the British conquest threw this ancient civilization back away for a century.

In the second half of the 20th Century, due to the expansion of the nuclear arms, wars aimed at conquering retarding civilizations became nonsensical. Wars have given way to other mechanisms of inter-civilizational inter-action.

Alternatives for the inter-action of civilizations in the 21st Century.

The 20th Century, the final century of industrial society, leaves to the oncoming age a massive burden of unsolved problems yet growing in numbers during the last quarter of the century. What are the premises and factors of the inter-action between local civilization at this new coil of historical spiral?

1. *The formation, through many a contradictions and hardships, of post-industrial world civilization* is a basic characteristic of oncoming epoch. But subjected to a more thorough view, this epoch reveals signs of a transit

period towards a next historical supercycle, which will include three successive civilizations (provided that the course of history will not be broken) and embrace (if there will be no alteration in the set of ever-increasing rhythms of historical development) about four centuries. This is, however, a remote and obscure perspective. As yet there is only one thing to be ascertained: the transit period from industrial towards post-industrial society perhaps will cover about half a century (the final quarter of the 20th — the first quarter of the 21st Century), and the way towards the new historical supercycle will take about one century. At the periphery the transit process may last for a longer period.

The formation of post-industrial society implies a radical transformation in the historical climate, in which local civilizations have so far developed and interacted. It also will cause their forming and joining new groups, proposing new leaders, changes in values. But this will have nothing to do with invention of an Utopia of some kind forced upon the masses by intellectual or political elite. The post-industrial society, in its major features and attributes, is already existing. It has established itself in leading states, but has not yet become enough dominant to determine essence and perspectives of historical progress. There is no need to contrive ideal systems. Looking intensely into turbulent world around us, it is possible to make out fragments of future society which only need to be cleverly gathered up.

2. *The gap* separating Western civilization, together with Japanese one which joined it, both leading in the contemporary industrial society, from the rest of the world is perhaps the most dramatic part of the legacy left by the industrial epoch. It serves as a background against which the inter-action of local civilizations is, and will be, coming about. It was as long as two century ago that the gap in economic development had been remaining relatively small, but it became hefty at the end of the 20th Century, threatening to make a split in the global civilizational space.

Western civilization, and Japan which joined it after the World War II, afforded the level of economic development three — three and a half times higher than world average, and secured more than a half of the global GDP, while being populated only by 17 % of all mankind. Civilizations with a level of economic development 3-4 times lower than average for the globe, were

populated by 37%, and produced only 10, 5% of the global GDP. Therefore, the progress has failed to overcome poverty. On the contrary, it has just succeeded in making poverty even more bitter and grievous, as it pushed millions of people to a verge of famine survival. Much in this situation is definitely to be found common with last ages of Roman Empire, on the eve of the Empire's fall. It is not worth speaking that this situation is bringing contradictions between rich and poor civilization to the worst. It came to be a powder keg able to cause an explosion of geopolitical equilibrium and to bury fed up and carefree Western civilization under its fragments.

3. One of the main causes for the gap between civilizations to increase is *the demographic boom* that stroke developing countries in the second half of the 20th Century, with the result being a tremendous growth of population from 2, 524 mln in 1950 up to 6. 1 billions in the end of the century (i.e . by 2. 4 times).

This led to laying a drastically harder pressure upon natural resources and the environment, and corrupted national processes of re-production in exuberantly populated areas. In addition, felling of 'the green lungs' of the globe, — tropic forests in Africa and South America, breaching of the ozone layer, choking up of oceans and seas, breeding grounds of radioactive contamination were all demonstrating an alarming growth. Thus the ecological problem became supremely important, claiming joint attention of all civilizations to avoid global ecological catastrophe.

Still, the situation does not seem so far hopeless as shown in some astonishing works brought out by a number of ecologists and followers of the 'golden billion' concept. That a substantial increase of annual GDP per head, together with rising of living standard is something what can be effected within quite short terms even with having a tremendous population to feed, is well demonstrated on the example of China, for this country's GDP per head has been doubled during 7 years. The experience obtained in Japan, the U.S.A., and some European and new industrial countries, creates new opportunities in making essential improvements in natural conditions of human's life and the environment. Thus work has already been done to find solution of ecological issues without decreasing of the world's population.

4. The industrial society made way originally in Europe, and then in

the North America and Japan, attended by triumphant fanfares of all-mighty *scientific progress* and technological revolution. Human seemed to be able to perform anything in order to make himself closer to the onset of the Golden Age. The reality, however, discouraged prognosis of vehement optimists. First, it soon became clear that the progress in science and technologies has mainly triumphed in military field, taking up limited intellectual and other resources from the sectors providing goods and services for human needs. The second outcome of the progress was removal of the human being to an inferior position in the machinery system, as he virtually degraded to a status of an attribute to the machinery, this huge industrial Molech. Next, pursuit for economic growth and accumulating wealth were carried out by increasing involvement of natural resources which exhausted them and polluted environments. Fourthly, the science itself failed to provide a reliable prognosis on close and far-away outcomes of its own accomplishments, to the effect that they have been substantially discredited, with growing social distrust to 'egg-headed' elite. Thus the sunset of industrial society collapsed the paradigm of unchecked progress priorly considered to be a main road to future prosperity.

5. Industrial epoch has effected some basic shifts in the *global geopolitics* as the field of inter-action of local civilizations. After winning the leading positions, Western civilization have spread over the North and South America, Australia, subdued and doomed for ages-long preservation the ancient civilizations of India, China, Africa, and greater part of the Moslem world. Two horrible global wars resulted from the fight for a redivision of the world, led by the countries of the West. Meanwhile, aggravation of the crisis brought Russian Empire to the socialist experiment and the formation of the world socialist system, with the Orthodox civilization as its core, a single one to challenge the West with confrontation. For long decades the geopolitical map of the world was divided into two rival systems headed by the global powers, armed exuberantly with weapons of mass annihilation and fighting to exercise their influence upon the 'third world', meaning other civilizations. Many times the world stepped on the verge of suicidal nuclear catastrophe.

The last decade of the 20th Century was characterized by cutting out again the geopolitical map. The formerly mighty Soviet Union committed a political hara-kiri, suffered a crushing defeat in the cold war, and lost most of

its economic and military power, in fact becoming a second-rate state with nuclear war-heads. Few years were enough to undermine the former unity of the local civilization, which reached a verge of decay, if not stepping beyond it to the effect of vanishing from the world's historical scene. It is difficult, if at all possible, to point out another example of so headlong a self-destruction of local civilization in peace-time, without a civilizational clash.

But the world did not come to be any calmer out of the destruction of bi-polar system. Inter-civilizational conflicts spring out in greater numbers, though, fortunately enough, on a local scale. There is a need for creating a geopolitical map for the 21st Century for equilibrium to be restored again, and global political balance be rested on a new base. But the world inserted into this map is unlikely to be of a westernized type with domination of single superpower. Going on now in global civilizational process is the shift to the East. Suffice it now to recall the alternative put in words by A. S. Panarin: 'The global civilization stands now at the cross-roads. The industrial epoch is coming to the end, and the post-industrial one begins. And if the transit from industrial towards post-industrial society is taken in yet by a westernized phase of a global mega-cycle, with the economic, spiritual and geopolitical hegemony of the West still keeping up, it will culminate in a more refined pattern, to say the least of it, as could be, for example, domination of information technologies. But if the end of this transit falls upon change of phases of the global mega-cycle, therefore unfolding against the background of the increasing role of the East, the post-industrial society will acquire a chance to establish itself as an essentially new post-economic civilization.' (19, P. 389).

6. The onset of crisis in the industrial society's *culture* was characteristic of a greater part of the 20th Century. This crisis affected its contents, which has been moving further away from the reality to the world of modernist fancies and perversion of images, while losing a principal part of national heritage under the pressure of the faceless mass culture. To please market dealers and to accept technicalization, culture has been ruthlessly commercialized. A broad- scale applying of new technologies (television, video, computers, Internet) afforded to disseminate through and impose upon younger generations base-alloy, but profitable images. With the morals

degrading continually, use was made of the means of imaginative perception to promote violence and porno, hits full of merciless fighting scenes, and to create a zombie-like kind of person, which is so welcomed by industrial, political and ideological machinery.

In spite of all efforts made by cultural elite and UNESCO, much was lost from the global cultural legacy. But more principal, the channel of reproduction through which cultural legacy came down to new generation in a family, or a village circle, was substituted with a heartless educational machinery set to follow demands of the element of mass industry.

But at the end of the century, taking up the challenge of the late-industrial cultural decay, appeared signs of the formation of post-industrial paradigm in culture which is based on the perception and developing of supreme culture of preceding epochs, harmony and moral purity. It is most important for this appeal to be answered in hearts of future generations to dominate (делать погоду) in the 21st Century.

Scenarios for crash or partnership of civilizations. In the above paragraphs we have observed premises of the inter-action of local civilizations, the same background against which it is due to unfold in the oncoming century. Let us accept three possible scenarios for consideration: a pessimistic (inevitable clash of local civilizations), an optimistic — the transit towards partnership, and a neutral one — conservation partially modified with modern tendencies, which combines elements of both clash and partnership but does not fully realize either of the two previously mentioned scenarios.

Are there any premises for the scenario for clash to be realized? Not only there definitely are such premises, as has been demonstrated above, but they were already put into effect during inter-civilizational conflicts of the last decades at Lebanon, Caucasus, Yugoslavia and Afghanistan. The question is whether these conflicts and others of their kind, to spring up in future, develop into global confrontation and military way of clash of civilizations.

Divergence of basic interests and confrontation of civilizations will continue taking place in the next century, or at least in its first half. There are some objective pre-conditions, and unsolved problems remained after preceding century. However, for these confrontation to develop into clash, a

few other pre-conditions are needed.

First, there should be those who believe their interests to be deprived and degraded, and therefore aim at redivision of economic and political spheres of influence. S. Huntington was right to note that this is the case with Moslem and Chinese civilizations, their part in the population, GDP, and export of the world quickly going up, while their diaspora penetrating into countries of other civilizations. Much in these developments is motivated by care of obtaining 'a place beneath the sun' for generations to come, for children and grandchildren. In spite that the Indian and African (to the south of Sahara) civilizations are situated in a undeniably worse positions, they do not have any manifest aggressive ambitions. Western civilization is on the defensive in this confrontation, while Orthodox civilization and Latin American civilization keep neutral, attending only to their own problems.

Secondly, 'passionary' splash of local civilization does not appear before national idea and fundamentalist forces come into existence, eager to spare no price to see this idea materialized. For this thing to be done, charismatic leaders are needed. The positions of Islamic world currently seem to be most powerful in that matter, owing to wide spread of fundamentalism (one can judge about its strength from the events in Iran, Afghanistan and Chechnya), and to emergence of a group of aggressive leaders prepared to do anything. None of persons of their sort are yet to be found in China, which is rather engaged with domestic problems, neither there are any in Russia or Latin America. All the more, no consolidated groups of passionaries can exist within Western civilization, since they would scarcely put forth sprouts upon a conservative soil, though some exceptions are also known.

Third, a purpose like this requires major forces of local civilization to consolidate on an inter-state base, and a flag of great national idea to be raised, and commitment of different communities to support this flag, which is something that very few, if any, civilizations can claim, even the Moslem one, with some countries of which conflicting sharply, including using of war troops.

And, finally, a geopolitical climate have to be beneficial for confrontation of civilizations, to be able to set it off. There have to be no mechanisms to settle down inter-civilizational and inter-state conflicts, and no

structures strong enough to set this mechanism working. At the moment there are none of such premises. The UNO takes an active part in setting at rest many international issues, while the U.S. military and other members of NATO are always prepared to intrude into any conflict.

It follows from this that the nearest decades will lack sufficient premises for bringing local civilizations into clash. This however does not mean that situation will necessarily fail to alter substantially, and that there can be nothing to provoke such conflict. This could occur in case of obtaining weapons of mass annihilation by some aggressive power, which is quite real by itself, and putting them into effect in some local conflict, which will have every chance to develop into a global one.

What is the main line of the confrontation of civilizations today and potential front of their clash? Likely enough, the West with its enormous wealth must serve as the most challenging object to be attacked by aggressive civilizations. There will be much loot to share if battle is won. But Western civilization enjoys an undisputable supremacy in military force, and employs the single might of the NATO's fist in critical situations. In a war like that there is no chance for victory, or at least for survival, and petty terrorism seems to be the only suitable weapon. Japanese civilization, prosperous and untouchable, made home under the Western nuclear shelter. Latin American civilization is far beyond the reach, and threatens to no-one. The Hindu civilization is close enough, but is too heavily populated to be coped with. The victorious campaign over African civilization, the poorest of all, does not promise huge profiting, — let them manage to feed themselves first! Since that, there is an only titbit left 'to let off steam', to satisfy a growing appetite of aggressive civilizations, that is the Orthodox civilization with Russia in the lead. Though, until recently Russia has been one of the global powers, and even now it keeps a huge arsenal of weapons of mass annihilation. But its military power has been essentially diminished, the USSR and the Council for Mutual Economic Aid dissolved, and CIS countries, as well as single regions, found themselves heavily tangled with bundles of contradictions. Russia saw its share in the global GDP and global exports halved these years. The country joined the third echelon of nations which have a level of development lower than world average in many times.

Huntington and Brzezinski give the Russian civilization up in their investigation of this situation, predicting inevitable seizure of the Russian Far East and Siberia by China, and deflection of a group Moslem regions which virtually amounts to a partition and dissolution of the local civilization resulted from redivision of global order.

Is this scenario realistic? Of course, it should not be thought of as inevitable, especially if there are forces able to bring this local civilization back to life. But it must not be totally dismissed, too. There are quite enough causes for it to be performed. But if so, the realization of such scenario will only enhance the probability of clash between the West and the East in the following decades of the 21st Century. When stored with powerful arsenals of natural and military resources, the Moslem and Chinese civilizations will become more urgent in their claim for redivision of the global civilizational sphere. Fall of the Orthodox civilization will merely move off clash of civilizations to a further date and will make it really inevitable.

It is not worth trying to guess time and a possible scenario for such clash to unfold. However, results which are to follow are more objectively predictable. In fact, these developments have few versions to offer. If they pause upon a point where weapons of mass annihilation are involved, a train of inter-civilizational clashes between the weakening West and the East gaining strength will go along in a lingering pace, and to a changing success. But in case of employing nuclear, chemical, bacteriological weapons stored today in numbers enough to exterminate repeatedly all living creatures on the Earth, a clash like this will only result into self-annihilation of mankind in the most complete manner, together with the bio-sphere, or, in the better case, by killing just itself. But at any rate, the history of world and local civilizations will indeed come to the full stop.

Hopefully mankind will not go so desperately deep insane as to finish its journey through history by committing suicide. It can choose another scenario, that one more sensible and promising, — the transition towards *partnership of local civilizations* within the framework of global progress and quest for joint solutions of global issues.

Are there any real premises of such scenario? Or is it just a fancy dream about the future, one of those castles in the air, constructed out of the

pure nothing by group of intellectuals to make themselves at ease and to relieve the worried mind of the masses?

Such premises do exist. In the first place, it is the historical experience of partnership between local civilizations which was accumulated through thousands of years of historical process, especially in such areas of their entanglement as Mediterranean or Black Sea regions, and South-East Asia. Historians are promptly inclined to describe wars together with most bright manifestations of belligerent spirit, obvious victories and defeats. But wars, however abundant their numbers might be, do not embrace the whole of the historical space. Periods of peace-time partnership have stored no shorter time, or have been even more continuous. The experience of this partnership, beneficial for those who participated in it, perhaps does not look so outspokenly historic, but nevertheless it is it that deserves to be a subject of most thorough treatment of historians, since until now the 3-volume study by Fernand Braudel may qualify as the only attempt.

Secondly, there are powerful economic interests which call for partnership, rather than for clash. Of course, military victory also brings profits for a winner, but, to say nothing about costs, there can be no sound guarantees. Meanwhile trade, investments and partnership in the monetary field lead to obvious and predictable results, bringing huge benefits for countries and civilizations which take part in them. The unity of the world's market of trade, monetary exchange and services make all parties involved keep to the rules of operating in these markets which are established by the private international law. The increasing role of international division of labor and trans-national corporations urge along processes of integration which are now efficient instruments of and telling argument for partnership.

Thirdly, the sphere of the spiritual reproduction (developments in science, culture, education) has moved far beyond national and civilization borders, being globally recognized today. Scientific theory or discovery, as soon as it appears in any country, is immediately obtained into possession by interested scholars throughout the world. Though culture is wearing national garments, it has a global soul. Intense exchange in cultural benefits creates unified cultural space, as the most valuable pieces of the cultural legacy are declared possession of all mankind, and as such are taken under protection by

UNESCO. Education acquires an increasingly global character. Even the global religions, said to serve identical signs of local civilizations, are growing to bear and forbear, to become tolerant and ready for dialogue when faced with most sharp issues of mankind.

Fourthly, races and peoples are confusing a marked mixture, migration of population and its mobility are constantly expanding, and international tourism is taking up wider scale of operations. While making ethnical borders transparent, this developments aid understanding between peoples of different civilizations, and form humanitarian pre-conditions for these people to join partnership.

Fifthly, the informational revolution and developments in technology have gradually been resulting into the formation of global information space. People in all countries become immediately aware of events that occur in any point of the Earth. Making preparations for armed conflict and manipulations of opinions are rather difficult now to be concealed.

Therefore, premises for taking steps to unfold partnership of civilizations are obviously available, however uneasy, lengthy, and contradictional this process may be. It should be remembered that this way of partnership is superior to any conventional form of inter-state co-operation, since it involves integrational links throughout the whole of a social system, including economics, science, technique, ecology, culture, education, and creating climate of mutual trust. Illustration of these developments is to be seen in maintaining the European unity through the EC, or close co-operation established between the Western Europe and the North American local civilizations (in the framework of the Western civilization).

However, only few developments of this sort are to be traced so far. There are too much more cases of inter-state and inter-civilizational contradictions and mutual distrust. Renaissance of cultural and ethnic distinctions led to the partition of multi-national states, such as the USSR, Yugoslavia, Czechoslovakia, and to the grave separatism and fundamentalism. It is therefore necessary to enhance the sphere of partnership, to watch this mechanism working in life, and to dismiss mutual distrust and hostility in a patient and tolerant way lasting for decades. It should be also emphasized that partnership implies equality of parties involved. Hegemony or thrusting

approaches upon others attempted by either country, however mighty in regards of economics and military force, must not be accepted lest they should exterminate feeble shoots of partnership and create premises for inter-civilizational conflicts.

It is possible to predict now that certain tangles of partnership will be established through first decades of the future century. Two larger civilizational regions, the Atlantic and Pacific Rim areas, will perhaps witness these developments earlier than elsewhere. Forms and mechanisms of partnership will be examined through work in a variety of fields, such as economics, ecology, technology, culture, politics. The UNO, ??? OEEC, and regular meetings of the 'big eight' are expected to largely contribute to this process.

Being involved into this partnership will be essential for nations with currently undeveloped economy, such as India and sub-Saharan African countries, for it will help them with making decisions about their urgent problems. But it will be no sooner that in the middle of the coming century that the mechanism for such partnership will establish itself globally. Yet different countries and civilizations will participate in it on a different scale. About the second part of the century partnership will grow to embrace every nation, since mankind will face some global problems by this time. This, however, will not do away with dispersion of interest and does not imply uniformity of those who take part in partnership.

Described above, were two extreme scenarios for inter-civilizational relations in the coming century — those of the partnership and clash. But between them, there are a lot of *intermediate scenarios*, which have most likely chances to guide the real dynamics of inter-action.

Intermediate scenarios will not fail to take in local inter-civilizational conflicts, even armed ones, but those that will not spread globally, and will not involve use of weapons of mass annihilation. Meanwhile, the different fields of partnership will enhance, and mechanisms of partnership will be perfected, with some of local civilizations not being involved. But this process will anyway be more incoherent and last for a longer time than one guided through the optimistic scenario. It will face with the sharpening re-division of areas of civilizational influence as a major obstacle. New epicenters of tension will

appear, and some old ones will remain (Balkans, the Caucasus, Central Asia, and Middle East). After having won the cold war Western civilization will make attempts to sustain its leadership and to maintain its hegemony over the rest of the world, which will undoubtedly cause resistance of other civilizations, especially those currently gaining power and influence.

How much likely is realization of either scenario for inter-civilizational inter-action in the 21st century? It is difficult to answer definitely to this question. I would ascertain the probability of scenarios above in the following way: scenario for clash accounting for 10-15 %, partnership — 15-20%, intermediate scenarios — prevailing position.

But whatever scenario will be, it can be well stated that the process of formation of *local civilizations of the 4th generation* began evolving on the eve of the 3rd millennium. What is this generation characterized by?

1. Growth of differentiation, as compared with civilizations of the third generation. A. Toynbee identified five 'living' civilizations of the 20th century: Western, Orthodox, Islamic, Hinduist and Far Eastern. According to S. Huntington, the latter civilization falls into Sinic and Japanese civilizations. But this scholar also accepts the separate existence of Buddhistic civilization, African civilization (to the south of Sakhara), and Latin Amercian civilization. To go further this course, it is well possible to divide Western civilization into the Western European and the North American counterparts, which however does not leave any place open for Australia and New Zealand, while both are considered belonging to Western civilization. Besides that, Orthodox civilization headed by Russia also suffers transformation and stands under threat of decay.

2. Enhanced role of civilizational community and inter-civilizational distinctions replacing social and ideological confrontation (the world of capitalism vs. the world of capitalism), with the awareness of the principal role of spiritual life (chiefly culture), in social differentiation and dynamics. Civilization is coming to be the main notion of geopolitics.

3. Creating and spread of weapons of mass annihilation makes it unreal to settle down civilizational contentions by broad warfares. Ecological and technogeneous catastrophes are a growing danger today. The problem of mass starvation remains an urgent problem with no decision found so far. All these

is turning the activities in intensifying partnership into a global and vital necessity, for solutions for global problems can only be obtained through combining efforts. There is no chance whatever in sitting snugly somewhere far away from these problems.

4. Growing diversity of cultures and civilizations delineates more sharply, rather than disperses, mankind as the unified entity, embracing regularities of global history, the community of historical destinies in a tiny point of the Universe, the unity of economic, ecological, scientific, and cultural space situated within the populated part of the globe. This is to create real premises for the formation of a new type of relationship between local civilizations, that is of partnership.

4.4. The future of Russia in post-industrial civilization.

The peculiarities of the local civilization headed by Russia. Every local civilization has its own unique features, peculiarities of historical destiny. What are the peculiarities of civilization headed by Russia?

1. This is a relatively *young* civilization which numbers a mere millennium years of history, to contrast with Western, Hinduist, and Chinese civilizations, aged about 3 — 5 thousands years. The only ones younger than that are Latin American and North American civilizations which appeared three-four hundreds years ago. While the pre-history of Russian civilization should not be ignored, as it reflects the influence of Helladic civilization, and later on of Roman civilization (Kingdom of the Bosphorus, the State of Scythians, etc.), these communities failed to develop into separate civilizations and broke down under Huns' attacks.

2. This is a *hybrid-type civilization*. Though having constantly Rus — Russia as its kernel, it succeeded in absorbing parts of other-type civilizations — Western, in case of Baltic region, Poland, or Finland; Islamic (nations of the North Caucasus, Tataria, Central Asia, Azerbaijan); Buddhaic (Bouryatiya, Kalmykiya, Touva). Later on, in the epoch of the USSR, acquisition of such regions was reduced, but the hybrid multi-confessional type remained untouched. Yet in general this was not the case of colonial oppression, but rather an opportunity the backward nations used to intensifying pace of their development. (Though a few cases of discrimination are known, too).

As a geopolitical entity, Russia holds intermediate position between the West and East, bearing deep traces left by their influence in culture and destiny.

3. The landscape of the local civilization headed by Russia is chiefly *continental*, flat plain, though it is washed by many seas. Its area is far from being heavily populated, and it faces none of the problems familiar to Chinese, Japanese, Hinduist, or Western European civilizations. Those of its areas which are located far away from sea coasts are however sufficiently provided with natural resources for self-development. The eastern regions with their poor density of population enables the domestic expansion to be effected

without having to invade within the borders of other civilizations. This accounts for a non-aggressive, placable and mild temper, patience at grief and woe. Of course, these features look differently with different strata of population, but noting distinctions that separate 'average Russian' from 'average' European, Chinese, Moslem, or Latin American is definitely possible.

Great spaces are important to sustain stability in periods when civilization is threatened by conquer from outside. But they impede further innovational steps, keeping open ways of extensional development rather than intensive ones.

4. During its millennial history civilization led by Russia lived through a few *centennial cycles* and a number of national disasters.

The first cycle embraces a period between the 9th — 13th Centuries. Its culmination came under Yaroslav I in the 11th Century, when Rus of Novgorod and Kiyev took up one of the leading positions in the history of the Middle Ages of that time. The cycle ended with national disaster because of feudal division and Tatar conquest which both threw Russia away to the periphery of global progress.

The second cycle started with transferring capital to Moscow and the formation of the State of Moscovite. It reached culmination under John III, and during the years next to his rule, in the so-called Time of Troubles.

The third cycle in the history of Russia began with Romanovs' accession to the throne and reached its utmost point under the reign of Peter I and Catherine the Great, when Russia, ending with backwardness by a leap, joined the great world powers of the time. Due to adopting some of the benefits of pre-industrial society Russia did not share destinies of ancient civilizations of China and India which were subdued by aggressive Western civilization. But later on conservative tendencies regained strength, delaying the transition towards industrial society for about a century after its epicenter. This again threw Russia back away and led to the defeat in the Crimean war.

In fact, the industrial cycle in Russian Empire evolved no sooner than in the last third of the 19th Century, and went on in an exceptionally headlong manner. But it was too late to make up for lost time, to which the shameful defeat suffered in the war against Japan serves the bright illustration. The

partition of Russian Empire and several years of the Civil war brought Russia to the third national disaster. Torn by the Civil war, Russia lost unity and leadership. A substantial bulk of its territory fell away (Finland, Baltic provinces, Poland, Caucasus, and Central Asia). By taking great pains and falling back upon use of violence Bolsheviks managed to gather up again pieces of the former Empire, and even to exercise their political and economic influence on a broader part of the globe under the World War II. The local civilization was restored to life again, for this time under the flag of socialism, and not the Orthodoxy. Owing to innumerable sacrifices and efforts, it established itself as the world power claiming leadership from dominant Western civilization. Thus the second wave of the industrial cycle, though militaristic and one-sided, may also be noted.

In the 90-es, this cycle culminated into the fourth national disaster, with the Soviet Union and the Council for Mutual Economic Aid coming apart, and the geopolitical influence substantially weakened. The share of Russia and CIS in the global GDP and export dropped double. Not merely the local civilizations led by Russia found itself within the phase of crisis, but entered upon the phase of decay. More than that: it passed two stages of this phase.

The turns of global history are effected by will of countries situated in the epicenter of crisis rather than by the most wealthy and powerful states of preceeding phase. That Russia is standing at the epicenter of global crisis of industrial society, coming up against its antagonisms, is difficult to deny. It is almost impossible to name other country that managed to bring so much woe to its people and to suffer so profound losts in global civilizational continuity during peace-time and for less than decade. This enables us to suggest that Russia is the very country in which the formation of the spiritual resultant force of the post-industrial society will originate. And it is possible that it is Russia that is due to form connection between the West currently leading in the industrial society and the raising East.

Working out humanitarian alternative for technocratic version of post-industrial society is undisputable necessity, and Russia owns much to contribute significantly to doing so. But how much is Russia prepared to assume responsibility for taking up leadership in pursuing this target,

considering those extremely unfriendly economic and social-political conditions into which it has brought itself after the profound and long crisis?

Scenarios for the future of the Orthodox civilization. While doing justice to the spiritual factor in the formation of post-industrial society, and allowing for any alternative whatever, we are to be sensible of the aggregate of developments to determine a place for Russia and the local civilization it heads in the future society, and scenarios for its destiny in the future. Three scenarios can be identified here as most likely ones; these are scenarios for decay, dereliction and rebirth.

1. *The scenario of decay* is quite realistic. More than that, it is already being carried on very persistently, in incredible broad paces. So far two stages of its realization have been accomplished. The first stage was the partition of the Council for Mutual Economic Aid and Warsawian Treaty, the instruments that served the USSR for exercising influence upon a group of countries tied in heavy knot that formed the world system of socialism. Now the West (NATO) and East are both trying to pick up the fragments of this quarter of influence. The second stage was the USSR's breaking up into a group of independent states. Many of their number are inclined to accuse 'the Elder Brother' of all their troubles, and lay their claims on Russia. They look to other civilizations for guidance, especially due to the fact that the CIS proved to be exceptionally poor-organized and impotent. In fact, the quarter of real influence of this local civilization takes in only Russia and, to some extent, Byelorussia. Russia has once again found itself proudly standing alone in the global community, though knocking at both Western and Eastern gates.

The third stage was also been started. Some of peripheral regions representing different civilizations go to break away from Russia. Chechnya set off this process. The attempt to maintain unity by means of military force was a failure, due to, together with many other factors, the unspoken support Chechnya accepted from a number of Moslem countries. On certain conditions this process may unfold as a chain reaction.

For the scenario of decay to be put into effect, both objective and subjective premises exist.

First, Russia played a chief role in the socialist experiment, carrying along with itself a number of nations and an overwhelming majority of

intellectual elite. This experiment ending in failure discouraged globally the belief in this country's ability to indicate path to the future. Compared to few of its really beneficial achievements, the price for the experiment looks incongruously high.

Secondly, the U.S.S.R. and its Eastern allies gained halos of winners in the war against Nazis, but suffered a defeat in 'the cold war'. In spite the fact that Russia still possesses a vast arsenal of the weapons of mass annihilation, it no longer retains the military power of the former years. Military industrial complex is ruined, and arms are obsolete. Fighting efficiency of the military and the generals has degraded, together with respect it recently enjoyed with the masses.

Third, economic and scientific-technical might remains in the past, with no mutually beneficial bonds to which to resort, or a side to gain support from in case of emergency left in the present. The country is facing with a complete economic deadlock. The GDP is now half the former rate, investments have fallen fourfold, and official living standard has declined twice. It is living beyond its means, its external and domestic debts growing. Russia still possesses resources of natural gas and oil which earn currency incomings and make many of the CIS countries keep ties with Russia, but developing and transportation of natural wealth is constantly rising in price, the most profitable resources being exhausted. Hopes for onset of economic growth and flow of foreign and domestic investments remain delusive, and anyway it will take a certain time to heal the wounds left by the crisis and decay, and to reach the pre-crisis level. Time is no good to come up with the question of leadership, when coping one's own problems is a more vital necessity.

Fourth, the country is overtaken by the extremely acute social-political crisis. The decades of monopolistic domination of one political party gave way to multi-party system, and no party is in a position to claim for all-national leadership. Social and inter-regional differentiation grew significantly in personal income and living standards. The society split up into the minority of the wealthiest ones and the vast majority of poor people, as the middle class representatives are still few and weakly organized. The shadow (black market) economy spread immensely, not to the minor extent due to the fact that mafia

aligned itself with corrupt part of officials to make use of inflation and privatization and to appropriate a bigger part of the state property. Growing separatism of regional leaders enfeebled federal government which lack now economic power to provide support for depressive regions and to cease 'centrifugal' tendencies.

Fifthly, the spiritual life has degraded enormously. Morals and ideas are deeply corrupted. It resulted not merely from many-times cutting of allocations for fundamental researches, culture, and education, but from the substantial alteration in their content. The muddy tide of corrupt mass culture flooded screens of television and movie-houses, computer monitors, stalls of bookshops, seducing souls of coming generation. Science has lost perspective and prognostical outlook. Bright young scholars choose to be employed in other spheres, or go abroad, while scientific achievements being obtained for a song by slick operators. Education is being westernized rapidly, and students are forced to accept Western models failing to reflect the Russian reality. Many foreign religions and sects rushed headlong to Russia, the formerly unavailable spiritual area. They are recruiting new adherents with no expenses spared. Moral principles previously handed down to next generations are left to hang in the balance, and are gradually replaced by egoistic morals, lifting all sexual bans, and even racism and fascism.

Finally, there is a factor outside aiding the decay of this local civilization. The overwhelming defeat of the former mighty foe came as a complete surprise to the leader of the Western world. Now advantage is taken of strategic short-sightedness of Russian political elite. While trying to maintain a due politeness in their contacts with Russia, Americans aim at attaching Russia to the second-rate position it is bound to hold today. Of course, it is necessary to keep eyes open for preventing Russians from a civil war in the country stuffed with nuclear war-heads, germ weapons, gas-shells, and nuclear power stations. The bitter experience of Chernobyl taught the West to know better when dealing with Russia. The Moslem world make every effort to expand their influence upon former republics of the USSR and present regions of Russia where Moslems prevail. Heavily over-populated China casts looks full of deep longing at the Russian Far East with its scarce population and poorly developed areas in the grip of the economic crisis.

China carries on the politics of gradual penetration of people and goods into these vast spaces. Neighbors will strengthen their pressure upon weakened Russia, which will further provoke the decay of civilization.

To sum up, the current decay of civilization headed by Russia is the real tendency that have already developed through a number of stages. There is a big chance that it will culminate at the first decades of the following century. This, however, does not mean that Russia will evaporate from the political map of the world, or that it will be taken up by some more powerful civilization, or will be divided between them like Poland in the 19th Century. Russia will remain as a relict of the former might, but reduced to a position of second-rate power, with no means to comfort itself left except the reminiscences of bygone greatness.

2. *The scenario for dereliction* implies that diminished foundation of this local civilization will remain, allowing of few amendments to be effected. However, Russian civilization will align Hinduist civilization, falling behind to the second-rate position. Russia will come through the phase of crisis and take to the path of economic revival. This will strengthen ties gathering Russia and the ones with CIS countries, which also will survive revival. A new generation of politics will change one-sided dressing to the West to better-balanced relationships with Western and Eastern civilizations, as the use will be made of Russia's geopolitical situation. The income levels of different social groups and regions will going to regain the tendency for being equalized, calming social tension and separatism and preventing a social explosion. The standard of life will enhance slowly but yet irreversibly. The tendency for intergration will gain support within the CIS framework due to the understanding of the community of national interests, paralleled with long-lasting competition of these countries at the world markets. The considerable though limited influence of the present in the global civilizational field will also remain. All this will be attended with laying down the foundation of the post-industrial society.

For such scenario to be effected, some real premises exist. Crisis of system is never infinitely long. Whether it ends in decay (then representing the first scenario), and or transforms into a transition towards next phases of a cycle, to a new stage. As Russia's political and intellectual elite is gradually

getting sober these days, terrified themselves by the look of what they have done, it seeks ways out, becoming more sensitive to and championing the best interests of the country and the civilization it heads. The top of society is ripe for changes. That the accumulation of speculative, compradorian-type capital, is a hopeless affair is realized also by the economic elite. Wanting to preserve and reproduce accumulated wealth, it turns to reproduction and innovations. Due to this Russia will see a flow of investments, and in the first place national capital that emigrated earlier.

Economic recovery will lead to a more beneficial social-political climate and will turn public attention to the spiritual sphere and enlarge allocation of resources for its reproduction. A new generation of people satiated beyond measure with the low-standard mass culture will come into being, encompassing the national heritage with a bigger respect and care.

The world outside will become auspicious, too, for Russia to be preserved as one of the important leaders at the geopolitical scene, even in the state of dereliction, as a second-rate power. To avoid being buried under fragments left by an exposition of formerly powerful civilization, West seeks to use Russia as a counterweight to the growing ambitions of Moslem and Chinese civilizations. In its own turn, East is prepared to support Russia in order to resist the danger of own-polar geopolitics.

The scenario for dereliction does not imply a halt, a letargy. Russia and remains of the civilization it leads will develop and move on towards post-industrial society, though relegated to second echelon from leaders. Claims for working out a specific alternative to the Western model of the post-industrial society will be ruined.

3. The scenario for *revival of Russia* and the civilization it heads, and joining leadership in the formation of post-industrial society, also relies on the real premises which are as solid as those for the two previous scenarios. What are these premises?

First, this is historical experience. Three times in the millennial history Russia found internal resources for revival and surrounding itself by group of related nations. Why won't it happen for the fourth time? Some of local civilizations have experienced such revival. However, historical parallels are nothing but a way to comfort oneself, they fail to be arguments. If so, the

arguments are to be found elsewhere.

Secondly, Russia is less technicalized than the Western civilization, and surpasses them in preserving resources of spirituality and cultural values, something that will matter in first place in the humanized post-industrial society. At the same time, it is more basically taken up with the crisis. There is little left that it may still lose. This is going to cause an intense involvement of intellectuals into the quest of ways of Russia's revival. For this reason, Russia have better premises for the formation of new scientific and ethical paradigms of post-industrial society which will meet new demands of mankind.

Thirdly, Russia still has sufficient resources for revival in its disposal. It still enjoys a fundamental scientific reserves, population educated on high standards, abundant natural resources, and weakly employed manufacturing capacities (though mainly unprepared for producing competitive goods). The word 'still' must be emphasized, for the crisis developing for another score or two of years will devalue these resources, if not exhaust them.

Fourthly, both West and East taking interest in preserving and revival of local civilization with Russia in the head is objectively motivated in view of a long-term strategy. The capsized ship will carry along to the deep surrounding vessels, those standing by its side and far away. Russia is able to play a crucial role in maintaining and keeping geopolitical equilibrium at a new coil of historical spiral.

Thus the scenario for revival of Russia as a center of local civilization still remains the opportunity to be realized. The decay has not yet become irreversible. What is to be done for this opportunity to come real?

First, there must be *a great national idea* able to lead major part of Russians and partner nations by a thorny path of revival. This idea is to be scientifically validated, reflecting real regularities, tendencies and perspectives of the global civilizational development. It should rest upon the historical heritage of our ancestors and be focused upon enriching this heritage and its genetical core concerning a new stage in mankind's moving towards post-industrial society. Finally, this idea should be put in clear terms given to understanding by a wide range of social groups and generations. The idea of overall revival of Russia on its way towards the post-industrial society seems to suit these criteria.

Secondly, the country will need *charismatic leaders* able to adopt this national idea, to run it up as their banner, to assemble most of people beneath this banner and to show them the way to overcome and to recover from the crisis, to restore leadership among adjacent nations. Of course, one person is unable to accomplish a heroic deed like this. Nation's first intellectuals, political movements should be involved to attend the matter and to implement strategic highlights.

Thirdly, only *a new generation of Russians* will stand to this task. There is still a little chance for this thing to be done by the generation of politicians, scientists, businessmen, engineers, workers and peasants whose activities came to culmination at the 90-s. This is a transitional, multi-layer generation, which witnessed a historical split, crash of former ideals, stereotypes and anxious quest of new ones. Some part of this generation learned many obscure ways to reach wealth and prosperity in total lack of control and formed the class of 'new Russians'. The others sank to social bottom and abject poverty. The third and bigger group continues to work and struggle for survival in worsened conditions looking forward to a happier life for themselves and their children. The fourth one, small minority, got down to studying earnestly and actively the inner causes of changes that have come over Russia and the world, and their perspectives, eager to clean the ground for next generation.

The culmination of this generation's activity will fall on the 10s and 20s of the 21st century. They will work out the destiny of Russia, choice of scenario of the local civilization for the century. The fourth part of present generation have to propose itself to the task of aiding the formation of the generation to come next, the deliberate choice of great national idea and its realization. Only then the third scenario may come into reality.

EPILOGUE. THE LESSONS AND ENIGMAS OF HISTORY.

Our arduous journey over millenniums of global and national histories comes to an end. We have reached the point where we must draw the line, sum up the lessons of the past and sketch new horizons.

The short historical study has left aside many occurrences of the past and great continents with their own peculiar destiny. That was a look from a height of bird's flight, or rather from that of a spaceship: while so many details are left in haze, the beds of historical streams, bents, curves, and major turns which are not always introduced to our awareness at close distance. As the way made by mankind from the past to the present revealed its sense and meaning, the future took on new outlines. At the same time, new enigmas have arisen.

The spirals of history. In the historical process, which had come into view for the first time as a chaotical conglomeration of incongruous, unevenly shaped occurrences, an unmanageable flow of streams, rivers, and ocean currents, look from the space above can however make out undulating, wavy, spiral-like movement, recurrent rhythms of historical cycles, and flickering flashes of civilizations coming into existence, now in that, and then in another region. Quickly rising, they cast the light wider, change a figure of mankind, and carry it along to a next step of historical progress. With that a cast of leaders change, too, but a general trajectory of historical progress remains quite intelligible.

This approach permitted to distinguish a few types of historical cycles: middle-term and long-term civilizational cycles, and supercycles, which

encompass millennial course of several adjacent civilizations. In such a way, a new articulation of history has been substantiated, that one built up not of the five 'socioeconomic' formations, but of the seven world civilizations within a comprehensible time prospect, beginning with the neolithic revolution and including the currently proceeding transition to post-industrial society, and with the ever increasing rhythm of succession of historical epochs as a marked feature of this row. Against this background, a more general articulation as to three supercycles has been offered: formation and flowering of ancient civilizations (the Neolithic, early class, antiquity); maturing of premises for, rise, domination, and sunset of industrial capitalist societies (Mediaeval, pre-industrial, and industrial civilizations); transition emerging on the eve of the 3rd millennium to a new historical triad, from which only a first stage more or less reveals its main contours.

Such is the logic of historical progress, as determined by substantial regularities of cyclical dynamics and genetics. But that is, of course, only a hypothesis of a new looking at historical progress. Now, there is the first enigma. Is there any way of predicting history? Will this hypothesis be of any help to fix new links in understanding of rhythms of the past, of substance of the present, and of possible alternatives of the future? Is this hypothesis destined to become a reliable instrument for reconstructing models of historical process in Russia and world at large and predicting possible alternatives of future development?

Vectors of historical progress. The second lesson is in the discovery of general tendencies as to human development — *vectors of progress*. The first vector is that by man's further projecting out of nature, in so far as his historical mission is revealed, his social self gains priority over his biological self. He becomes more a spiritual, an intellectual creature rather than a material one. That is not intended to mean that man can extricate himself from a tangle of biological and materials cords. But historical progress is, above all, an accumulation of spiritual values, of scientific, cultural, educational, and moral wealth to be embodied by man in means of production, organisational modes of production, economic and sociopolitical relations. With every step an ultimate merit and priority of the human person becomes more obvious, though awakening to this fact is due to follow through waves of violence and

ruthless oppression of human fates. It is not material being that shapes the destiny of a single man, nation, or mankind, but, conversely, man himself, whether deliberately or not, transfigures the world around him, acting purposefully with regard to his requirements. And that is the resultant force in general trajectory in moving from bio-sphere towards noo-sphere.

The second vector is the growing community of historical destinies of ethnoses, nations, peoples, of all mankind. Current of history emerges from dozens and scores of isolated local streams of progress, distinguished not only by distances, but by exterior conditions and practiced traditions. The point of progress is that these streams eventually merge in the flush and flooding rivers, and these flow into historical seas of local civilizations and the ocean of all-human progress. Progress is a link between a drop of the destiny of a single person and a boundless ocean of human history. This ocean is not deprived of a soul, an individuality. It is rather *Solaris* which restores the images of the past before every one.

This is a contradictional process. Dams and weirs appear now in one place, then in another, preventing the current of progress of penetrating in this or that country, region, or union. Removing barriers produces an effect of communicating vessels, a reciprocal equation of developmental degrees, and a confusion of cultures. Normally that is a natural process, resulting from extension of markets and human relations, but as often as not it is urged violently, coming out of conquests and assimilation of various nations. But sometimes we witness a reverse motion, that is, towards isolation, of parts formerly constituting unity. There were many evidences to such motion as referred to the past, eg. the collapse and partition of the Roman Empire, or Austro-Hungarian Empire. We see such motion today, exemplified by a sudden rise of state borders on the spaces of the former USSR. But these reverse motion, a tide's going out, does not negate the general trajectory in which the progress of mankind is shaped. Conversely, full equation of one-scale elements is a negation of motion, making it absolutely lacking the sense.

The third vector is that beat of history is increasing, historical time becoming more contracted. Mankind makes its progress to the future faster. Every following historical epoch, every next cycle is shorter than previous one. But this tendency is neither absolute, nor general. The swing of historical

pendulum now slows down, then quickens in the framework of each cycle. Under crises and revolutions, pace of time is vehemently gathering momentum, to be getting more moderate, and then calm up to stagnation during stages of maturity and beginning of sunset. The same unevenness is the trait of human existence and life cycle of every nation. Today, changes that occur within decade may match in the scale these that would take on centuries at the beginning of our era, and millenniums at initial stages of human progress.

From the above follows the second enigma: will the future validate the vectors of historical progress which were derived from the former experience? Does mankind await a prospect of further rise of spirituality, of cutting distance between nations and people, of acceleration of progress, or tendencies to the reverse will gain an upperhand?

At the beginnings of the post-industrial civilization. By the approaches shaped above it is possible to learn the contents and historical perspective of processes which are currently underway.

Between each pair of adjacent historical cycles, middle, long, and extra-long, lies a transitional period. This a time of crises and powerful unrest, a growing chaos and tumult of rapidly changing conditions. It is precisely on such transitional period, that one from industrial civilization towards post-industrial, from one millennial cycle to the other, that mankind entered in the last quarter of the 20th Century. This the time of great challenge and tough choice, sharp upsurge of contradictions and conflicts, crime and violence. From this perspective, various scenarios for the future development can be seen, ranging from a purely pessimistic one, implying death or extinction of mankind resultant from deliberate or casual activating resources of thermonuclear, chemical, and bacteriological weapon, or from a series of explosions at atomic power stations with a subsequent ecological disaster, to a happy prospect of transition to the humane, informationally oriented post-industrial civilization. Whatever scenario is destined to be, it is us that will pre-destinate either alternative in the long run. It is worth reminding that during such periods the importance of human choice, deliberate will and purposeful action of a single person immensely increases. Elemental

processes, given unlimited grounds to act, will lead to the pessimistic scenario rather than to the optimistic one. For bad or good, man himself must take on responsibility for creating his future.

Hence a third enigma comes up. What is awaiting mankind beyond the verges of third millennium? What will lengthy crises and chaoses of transitional period result into? Will we manage to avoid the catastrophe to which the world is currently slipping, and take advantage of potential of the next coil of the historical spiral, i.e., post-industrial civilization, whose springs, which are readily seen, have not really gained ample strength and space. Is it up to mankind to substantiate the conception of sustainable development, to make its way to the optimistic scenario for noo-sphere?

Historical destinies of Russia. Certainly, Russians cannot rest unalert or unalarmed to the past, present, and future destiny of their own country, in fact, the great Eurasian continent endowed with the specific destiny however following the universal patterns of the global spiral. To the past, we refer our questioning why our present is so full of anguish and what awaits us in the future.

Russia (or, more precisely, what has preceded Russia) set on its historical path by two millennium later than epicenters of progress did. The mere fact of such a lag pushed it to move faster so that as to catch up with those in far ahead. But the move was always a spasmodical one. By the expense of the immense strain at times Russia would make up lost ground, approaching the epicenter, but then, again, a period of stunt would come. The major landmarks on this way were the national catastrophes of transitional periods: these of the 13th — 14th Centuries (feudal division and Tatar invasion); at the late 16th — the early 17th Century ('Time of Troubles'); at the beginning of the 20th Century (partition of the Russian Empire). Now time seems to be reap for a following catastrophe. After the partition of the USSR, we sustain the likewise threat to Russia, the long and hitherto unseen decline in production, the galloping inflation, the severance of economic ties, the wild orgy of crime and absolute power of 'shade economy', the impotence and corruption of machinery of the state, the de-intellectualisation and political desintegration of society, the outflow of capital, brains, and talents, the threat of coersion of the formerly mighty super-power into a raw supplying

appendix to developed economies.

Each catastrophe is terminable, eventually changing for upswing and national rebirth. What and when is in store for Russia in the future? Two extreme scenarios stand out quite clearly from others. A pessimistic one, if crisis perseveres for two or three more decades, making many negative processes simply irreversible. In such case Russia, or rather what will survive in its core, for long decades, if not centuries, will remove to the remote periphery of global progress and enter upon a failing phase of life cycle of local civilization. This scenario is fatal for the global community, as well, for it has seeds of a national disaster in its store.

An optimistic scenario is also possible, if the awareness of catastrophe will restore in life, as happened many times before, vital strength of the nation. This implies concentration on a nation-wide strategy of rebirth, addressing human being as a central focus of economic policy, reducing the growing technological lag, formation of efficient multi-structured economy, awakening of business activity, oppression of the upsurge of crime, and mutually beneficial partnership with the world abroad. All these can put a barrier to slip to the gulf. After making a short moment of relaxation, Russia will proceed on its progress, gathering the speed and getting on with arduous steps to the next civilization, to catch up with countries far ahead and to obtain its own unique niche in the future. There are two beneficial premises for such a breakthrough: the great affluence of intellectual and cultural heritage and the mobilising realisation of fatality of current trajectories.

In the years to come we are to solve the fourth enigma: whether Russia has mainly depleted its historical potential, or new powers will awake to help it doing an immense breakthrough, to secure a place for Russia, if not in van, but at least in the first echelon of countries and nations which lay grounds for the post-industrial civilization. That is the greatest enigma at the verge of the new century. Solving it will perhaps determine historical destinies of not only Russia, but of whole mankind.

It goes without saying that lessons and enigmas brought out above are no more than just visible contours of the huge ridge separating us from the future. As we approach these heights, and even if we reach them, dozens and hundreds of enigmas will arise, by no means less actual or troubling. But we

are not in the position to fall behind. It is time to arrive at solving them. Destinies of our own country, destinies of mankind depend on each of us. And if we make a deliberate choice, employing our knowledge of regularities of cyclical dynamics and sociogenetics, domestic and international experience, we will be able to contribute to onward progress of Russia and the whole of mankind to the post-industrial civilization, avoiding gulfs of national and global disasters.

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