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Civilizational Science: The Evolution of a New Field

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> "The painfully perturbing dissolution of familiar forms which suggests to weaker spirits that the ultimate reality is nothing but a chaos, may reveal to a steadier and more spiritual vision the truth that the flickering film of phenomenal world is an illusion which cannot obscure the eternal unity that lies behind it."
>
> Arnold Toynbee (Toynbee 1947: 495)

ABSTRACT

This publication addresses a paradigm shift in civilizational studies by describing an emerging interdisciplinary field – Civilizational Science. A Model of Civilizational Science and a number of macrosciences and macrostudies are introduced, as well as their Matrix. Macrosociology and Macroculturology are discussed as examples of macrosciences. A number of macrosociological theories are visualized with the help of an Integrated Model of Societies and Civilizations-Societies Evolution. Conclusions highlight theoretical and practical applications for Civilizational Science.

INTRODUCTION

Through the centuries a certain familiar structure of the scientific and academic disciplines has emerged.[1] : This includes

1. Humanities (History, Philosophy, Literature, etc.)
2. Social Sciences (Sociology, Economics, Psychology, etc.)
3. Natural Sciences (Geology, Biology, Botany, etc.)
4. Formal Sciences (Mathematics, Physics, Chemistry, etc.) and
5. Applied Sciences (Education, Architecture, Medicine, etc.).

However, the more humanity advances into the 21st century and the more it experiences the exponentially multiplying impacts and influences of globalization, the more attention it has to pay to global sociocultural as well as natural and abstract phenomena.

Accordingly, the classification system of academic disciplines is presently undergoing a restructuring. A whole new category of global sciences is emerging, for example Space Science, Planetary Science, Computer Science, Environmental Science, Climate Science, Life Science, Earth Science, Systems Science, Military

[1] The author would like to express his sincere gratitude to Miroslava Vomela for skillful and timely help with computer graphics and to David Vogan for sound advice.

Science, Police Science, Food Science, Library Science, Fire Science, and so forth. Earlier, during the 19th century, Political Science and other academic disciplines appeared and grew vigorously in size and influence. All of them are, in fact, extensive interdisciplinary fields, which may include many earlier studies and sciences as well as the brand new ones.

Also for centuries, the phenomenon of civilization has remained one of the most enigmatic and perplexing global sociocultural phenomena. Paraphrasing Karl Kautsky's maxim, it "is like the ancient Proteus who slips from our fingers every time we try to get hold of him." (Sorokin: 252). Because it is so varied and elusive, there appears to be no consensus among academics even on what exactly constitutes a civilization. Historically, the concept of civilization seemed to belong firmly to the field of humanities, initially to the realm of moral philosophy; then, to the field of philosophy of history (or metahistory); and lately to world history.

In the last decade of the 20th century we proposed that the multifaceted and complex phenomenon of civilization has to be studied as an interdisciplinary field which we named Civilizational Science. Building upon the work of Pitirim Sorokin, Arnold Toynbee, Fernand Braudel, Carroll Quigley, Samuel Huntington and other eminent civilizational scholars, we are continuing to develop this emerging field of expertise with the goal of addressing some of the most important problems of globalizing society in the 21 century and beyond.

MODEL OF CIVILIZATIONAL SCIENCE

The model of Civilizational Science is featured in Figure 1. As we see, it consists of a circle divided into two fields similar to the famous symbol of Yin and Yang. The lighter left part of the circle represents macrosciences, and the darker right part of the circle symbolizes macrostudies. The circle is surrounded by smaller figures representing "traditional" sciences and studies. As these disciplines become engaged with the macrosubject of civilization, they expand into macrosciences and macrostudies.

As is obvious from the model, macrosciences and macrostudies merge within the field of civilizational science, creating a sophisticated web of interconnections, and therefore, macrotheories and macroprinciples which belong to one macroscience or macrostudy inevitably influence other macrosciences and macrostudies. The closer their application to the "native turf," the stronger their influence, and vice versa, the further their application, the weaker it becomes.

The circle also contains two contraposed centers depicted as small darker and lighter circles. They represent "the opposite" which is always present where any duality exists. The sciences which are closer to the circle symbolizing macrostudies (depicted

as a dark circle) are less precise in nature, for example macrophilosophy or macrogeopolitics. Following the same logic, macrostudies which are closer to the light circle are more scientific, for example macroarcheology or macrolinguistics. Thus, the model has a systemic nature.

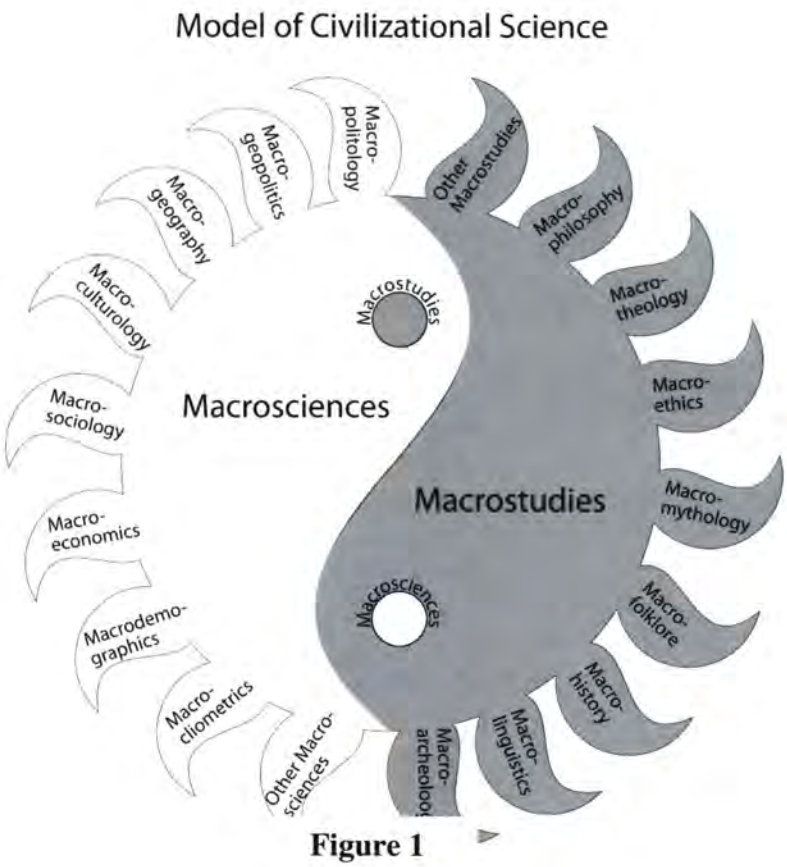


Figure 1

MATRIX OF MACROSCIENCES AND MACROSTUDIES

The prototypes for the macrosciences and macrostudies are derived from traditional scholarly fields of humanities, and social, natural, formal and applied sciences. To create a name for a macroscience or a macrostudy, we usually add a qualifier, such as macro-, world, global, comparative, or meta- to the name of a traditional science or a study. Since a need for such macro-approaches has existed for some time, a few of them, for example, world history and macroeconomics, are already established areas of expertise.

Given the scientific and scholarly arsenal available to study civilizations in all their various, sometimes quite unexpected representations and manifestations, the

questions may arise as to what role each macroscience or macrostudy could play, as well as to what interaction or interplay could possibly emerge between them. A macroscience and macrostudy matrix could be developed to visualize those processes. In it we would see the definition of a civilization, for example, "a global culture or a cultural supersystem." In the relevant columns the corresponding macrosciences and macrostudies would be listed, for example macrophilosophy (world philosophy), macrohistory (world history), macroculturology, macrosociology, as well as macrosystems science.

Therefore, the main characteristics, patterns of development and evolution, uniformities, principles, laws and other features of civilizations as global cultures would be expected to emerge from interaction and cooperation between those macrodisciplines.

Using this approach, a civilization may be studied, for example, as a major stage in a society's intellectual, cultural and moral refinement or development; major moral codex; global "wave of progress"; global culture or cultural supersystem; global religion; major artistic trend or way of expression; extensive time period; influential way of thought; major linguistic group; global network; ecumene; macrosystem; "organism"; global or complex society; empire, global power or superpower; global or major ethnic group; global or major economy; archetype; global or influential ideology; extensive geographical area; world-system; ethical code or standard of behavior; universal interface with Creator, Nature and Society; utilitarian facilities / urban comforts / various lifestyles, or all of the above.

Let's now consider several other Matrix-based scenarios:

- A researcher defines civilization as a complex society which is a carrier of an advanced culture. A glance at the Matrix would show that this type of civilization is to be studied by the comparative study of civilizations, macroculturology, and macrosociology.
- Another scholar proposes that civilization is a network between various major trade centers. A look at the Matrix would show that this manifestation of civilization is to be inquired into by the comparative study of civilizations, macrosociology, macroeconomics, as well as by the macrosystems science.
- Yet another academic suggests that civilization is an archetype. A look at the Matrix would suggest that this variety of civilization is to be researched by macromythology (world mythology), comparative study of civilizations and macropsychology.

Let us now consider two of the proposed above macrosciences, macrosociology and macroculturology, in more detail.

MACROSOCIOLOGY

One example of a macroscience can be macrosociology, which we define as a science of global and/or complex societies and civilizations (also labeled civilizations-societies). Within the bounds of this new scientific discipline, a number of macrotheories may be proposed, for example:

- Integrated Macrotheory of Societies and Civilizations-Societies Evolution. This macrosociological theory proposes that societies and civilizations-societies share the same nature and differ in scale only.
- Rise and Fall Macrotheory of Societies and Civilizations-Societies. This macrosociological theory states that unlike cultures and civilizations-cultures which compound, societies and civilizations-societies rise and fall.
- Switch Back, Forth and Sideways Macrotheory. This macrosociological theory proposes that societies and civilizations-societies have unique dynamics of their evolution which depend on many factors, including their structure, the culture or civilization-culture they maintain, and others.
- Repeated Stages Macrotheory. This macrosociological theory states, that societies and civilizations-societies may repeat certain stages of their evolution.
- Invincibility Macrotheory. This macrosociological theory maintains that at certain stages of the societies and civilizations-societies evolution they are extremely durable in relation to the internal as well as external destructive forces.
- Titanic Macrotheory. This macrosociological theory states that at certain stages of their evolution, societies and civilizations-societies are extremely vulnerable in relation to the internal as well as external destructive forces.

INTEGRATED MODEL OF SOCIETIES AND CIVILIZATIONS-SOCIETIES EVOLUTION

As we know, Toynbee had proposed five main stages of the civilizations-societies evolution: Genesis, Growth, Time of Troubles, Universal State, and Disintegration (Toynbee 1947: passim). Quigley has expanded their number to seven: Mixture, Gestation, Expansion, Age of Conflict, Universal Empire, Decay, and Invasion (Quigley: 146).

Following the Integrated Macrotheory of Societies and Civilizations-Societies Evolution, we increased their number to nine. Therefore, our Integrated Model of Societies and Civilizations-Societies Evolution is depicted in Figure 2 as a circle divided similar to a clock into: Emergence of Groups, Formation of Societies, Mixture, Gestation, Expansion, Conflict/Time of Troubles, Universal State/Empire, Decay, and Invasion /Implosion /Force Majeure stages.

According to the Rise and Fall Macrotheory, a society or a civilization-society proceeds either through all or through a certain unique combination of those nine main stages. As we can see, the arrows, which connect them, indicate quite an extensive number of possible scenarios.

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Integrated Model of Societies and Civilizations-Societies Evolution

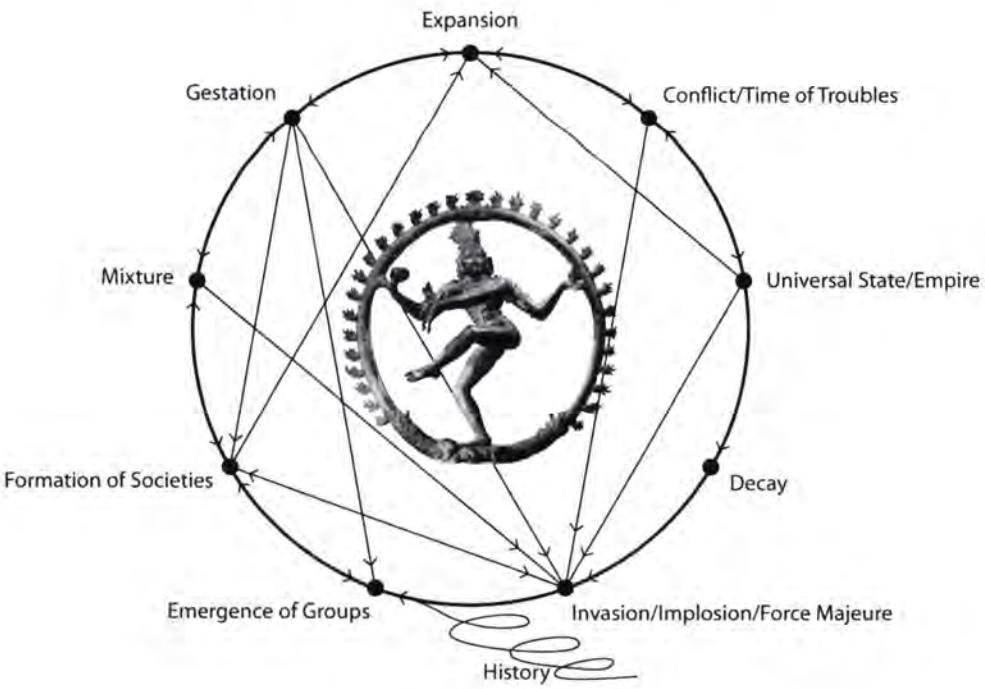


Figure 2

In the center of this model is an image of Shiva Nataraja, Lord of the Dance, South India, 11th Century.

Since our Integrated Model has not a rigid, but instead a multivariate nature, it incorporates all the above models. It also includes Toynbee's Hellenic, Chinese, and Jewish models (Toynbee 1972: 52-69), Toynbee's later stage "arrest" and "petrifaction" stages (Toynbee 1947: 360) as well as various patterns of a civilization-society's disintegration (for example, two-and-a-half beat, three-and-a-half-beat, four-and-a-half beat, five-and-a-half beat, etc. (Toynbee 1947: 548-554).

In the center of the Model we see an image of Shiva Nataraja, Lord of the Dance, which Joseph Campbell describes as follows: "In Shiva's hair are a skull and a new moon, death and rebirth at the same moment of becoming. In one hand he has a little drum that goes tick, tick, tick. That is the drum of time which shuts out the knowledge of eternity. But in the opposite hand is a flame which burns away the veil of time and opens our mind to eternity" (Campbell: 226).

Let us now follow the evolution of Societies and Civilizations-Societies, as presented in the Integrated Model, while attempting to reveal and explain with the help of our macrosociological theories its eternal inner workings.

Emergence of Groups Stage

The first one is the Stage of the Emergence of Groups. These groups either appear from the depths of prehistoric time and space or are already in place as the ethnographic material from the previous civilization-society. Quigley defines a social group as "an aggregate of persons who have had relationships with one another long enough for these to have become customary, and for them to come to regard themselves as a unit with well defined limits" (Quigley: 71).
Social groups may range from the primeval family or cult groups to the religious, political, educational, family, or interest groups of the modern times. The groups, according to Quigley, do not have cultures (Quigley: 74). We propose that they may have sub-cultures, the evolution of which we follow elsewhere (Alalykin-Izvekov 2009: 173-183). From the Emergence of Groups Stage we then advance to the Formation of Societies Stage.

Formation of Societies Stage

At the Formation of Societies Stage social groups merge into societies. Quigley defines society as "a group whose members have more relationships with one another than they do with outsiders. As a result, a society forms an integrative unity and is comprehensible. It is the vehicle of the culture ... A society has a culture because its members have more relationships with one another than with outsiders" (Quigley: 74).

According to the Switch Back, Forth and Sideways Macrotheory, societies and civilizations-societies may have unique dynamics and, therefore, unique "scenarios" of their evolution. Their particular paths depend, for example, on their constantly changing through the processes of association and dissociation.

Sorokin explains: "In the early Vedic period India did not have castes. Eventually the religious, occupational, racial, territorial, and family, kinship and language ties coalesced to form the multibonded caste. Later several of the multibonded castes tended to dissociate into groups of less complexity. Many a population in the past has lacked a territorial + state + language group called a nation. In the course of time, through the association of the corresponding ties within vast groups, nations have arisen. Some of them, such as ancient Egypt, ancient Greece, and ancient Rome, eventually dissociated into several unibonded groups which, in their turn, became extinct through the loss of members, vehicles, or relationships."(Sorokin: 464-465).

The unique paths of a society or a civilization-society may also depend on the evolutionary stage of a culture or civilization-culture (Alalykin-Izvekov 2009: 173-183). Therefore, from the Formation of Societies Stage a society can move now to the Stage of Mixture, speed up to the Stage of Expansion, or split up again into the social groups.

Mixture Stage

The third stage is the Stage of Mixture. According to Quigley, "every civilization, indeed every society, begins with a mixture of two or more cultures ... The process is a little like the way in which a mixture of chemicals sometimes produces a new compound different from the mixing chemicals" (Quigley: 146).
From this stage a civilization-society in formation may move to the Stage of Gestation, split into separate societies or, due to workings of some hostile internal or external forces, reverse to the Stage of Invasion/Implosion/Force Majeure.

Gestation Stage

We are now at the fourth stage of the civilization-society development.

Quigley elucidates: "If the new society born from such mixture is a civilization, it has an instrument of expansion. This means that inventions begin to be made, surplus begins to be accumulated, and this surplus begins to be used to utilize new inventions. Eventually, as a result of these actions, expansion will begin. The interval before such expansion becomes evident, but after the most obvious mixture has ceased, may cover generations of time. This period will be called the Stage of Gestation ... In general, it is a period in which the society seems to be changing very little, and most people seem to have fairly stable status situations in the social structure. But, under the surface, much of importance is taking place and, above all, the process of investment

and invention that will make possible the following period of expansion is taking place." (Quigley: 148).

The all-important condition for a society to become a civilization-society is to acquire an instrument of expansion (Quigley: 132-145). Examples of instruments of expansion range from slavery, chivalry, and mercantilism to commercial, industrial or monopolistic capitalism (Quigley: 154).

Following the Switch Back, Forth and Sideways Macrotheory, from the Stage of Gestation a civilization-society may move to the Stage of Expansion or reverse to some of the previous stages of its evolution. Toynbee calls civilizations-societies, which experience the various versions of those reversals, Abortive (Toynbee: 153-160) as well as Arrested (Toynbee: 164-186).

Expansion Stage

The main features of the Stage of Expansion are:

- Increased production of goods and rising standards of living.
- Increase in population.
- Increase in geographic extent via exploration and colonization
- Increase in knowledge and science. (Quigley: 149, 231).

As a result of the society's geographic expansion at this stage of their evolution, societies and civilizations-societies usually become divided into two areas, the core area, which they occupied at the end of Stage of Gestation, and the peripheral area into which they expanded during the Stage of Expansion (Quigley: 150).

The Stage of Expansion is frequently a period of democracy, scientific advance as well as revolutionary political change (Quigley: 149). According to the Invincibility Macrotheory, a civilization-society is usually very durable in relation to the various external hostile forces between the Stages of Gestation and Decay and especially so during its Stage of Expansion. (Quigley: 163).
From the Stage of Expansion a society or a civilization-society either moves to the Stage of Conflict/Time of Troubles, or, according to the Switch Back, Forth and Sideways Macrotheory, may reverse back to some of the previous stages of its evolution.

Conflict/Time of Troubles Stage

As soon as the rate of expansion in a civilization-society begins to decline noticeably, it enters the Age of Conflict/Time of Troubles, the reason being that a progressive social instrument of expansion converts into an outdated social institution (Quigley: 101-102). The main characteristics of this stage are:

- Declining rate of expansion.
- Growing tension of evolution and increasing class conflicts, especially in the core area.
- Increased frequency and violence of imperialist wars, and
- Growing irrationality, pessimism, superstitions, and otherworldliness (Quigley: 150).

As no surprise, during this period also occurs the creation of instruments of class oppression which control much of the political power. Instruments of imperialist wars control much of the military power, and instruments of irrationality control much of the intellectual life. (Quigley: 152-153).

If a civilization-society acquires a new instrument of expansion, it happily reverts from the Stage of Conflict/Time of Troubles to the Stage of Expansion. Otherwise, it moves either to the Stage of Universal State/Empire, or, if overcome by the various internal or external influences, speeds up to the Stage of Invasion/Implosion/Force Majeure.

Universal State/Empire Stage

The seventh stage is the Stage of Universal State/Empire. Quigley explains:

> As a result of the imperialist wars of the Age of Conflict, the number of political units in the civilization is reduced. Eventually one unit emerges triumphant. When this occurs we are in … the Stage of Universal Empire." (Quigley: 153).

He continues:

> When a universal empire is established in a civilization, the society enters upon a "golden age." At least this is what it seems to the periods that follow it. Such a golden age is a period of peace and relative prosperity. Peace arises from the absence of any competing political units within the area of civilization itself, and from the remoteness or even absence of struggles with other societies outside. Prosperity arises from the ending of internal belligerent destruction, the reduction of internal trade barriers, the establishment of a common system of weights, measures, and coinage, and from the extensive government spending associated with the establishment of a universal empire. But this appearance of prosperity is deceptive. Little real economic expansion is possible because no real instrument of expansion exists. New inventions are rare, and real economic investment is lacking. The vested interests have triumphed and are living off their capital, building unproductive and blatant monuments like the Pyramids, the "Hanging Gardens of Babylon," the Coliseum, or, (as premature examples) Hitler's

> Chancellery and the Victor Emmanuel Memorial. The masses of the people in such an empire live from the waste of these non-productive expenditures. The golden age is really the glow of over-ripeness, and soon decline begins." (Quigley: 158-159).

Some of these symptoms indicate that a civilization-society may be already on its way from the Stage of Universal State/Empire to the Stage of Decay. As an alternative, it can yet move "back" to the Expansion Stage. However, since at this stage of its evolution it does not possess a real instrument of expansion, it can be only be done by political or military means. As a gloomier option, a civilization-society may also "speed up" to more troublesome stages.

Decay Stage

The eighth stage is the Stage of Decay. According to the Titanic Macrotheory, at this point a civilization-society is becoming more and more vulnerable to the internal and external destructive forces and, as time passes, its choices are becoming more and more limited.

Quigley remarks:

> The Stage of Decay is a period of acute economic depression, declining standards of living, civil wars between the various vested interests, and growing illiteracy. The society grows weaker and weaker. Vain efforts are made to stop the wastage by legislation. But the decline continues. The religious, intellectual, social, and political levels of the society begin to lose the allegiance of the masses of the people on a large scale. New religious movements begin to sweep over the society. There is a growing reluctance to fight for the society or even to support it by paying taxes. The period of decay may last for a long time, but eventually the civilization can no longer defend itself." (Quigley: 159-160).

Like the doomed Titanic, a civilization-society inexorably continues to sink, despite all the last-ditch efforts to avert the disaster.

Invasion/Implosion/Force Majeure Stage

The ninth stage is the Stage of Invasion/Implosion/Force Majeure, at which time, according to the Titanic Macrotheory, a civilization–society warily waits for the final *coup de grace*. This is a period "when the civilization no longer able to defend itself because it is no longer willing to defend itself, lies wide open to "barbarian invaders." These invaders are "barbarians" only in a sense that they are "outsiders." Frequently these outsiders are another, younger, and more powerful civilization." (Quigley: 160).

A *coup de grace* or another major calamity then inevitably occurs.

As a vivid example of this turbulent period's aftermath, Quigley presents us with this horrifying, yet majestic panorama:

> The death of Classical civilization and the barbarian migrations that accompanied it left the shores of the Mediterranean Sea and an extensive hinterland behind them in cultural chaos. The area was filled with shattered social groups and cultural wreckage bobbing about on swirls and eddies as if a great ship had sunk in a quiet sea. In the next three hundred years (500-800) these peoples and cultural debris began to integrate to form core areas of three new civilizations." (Quigley: 333).

As a result of influences from internal and external forces (for example, invasion by another society, a revolution, or a natural disaster), a civilization-society ceases to exist and splits into multiple social groups which, according to the Integrated Macrotheory of Societies and Civilizations-Societies Evolution, may then proceed to evolve into new societies and civilizations-societies.

As we had proposed, our macrosociological theories and the based-on-their-premises Integral Model have proved their multivariate and, therefore, universal value as efficient instruments for analyzing and predicting various scenarios of the societies and the civilizations-societies evolution.

MACROCULTUROLOGY

Another example of a macroscience may be macroculturology, which we define as a science of global and/or complex cultures. A number of macrotheories may be also proposed within its realm, for example:

- Integrated Macrotheory of Evolution of Cultures and Civilizations-Cultures. According to this macroculturological theory, cultures and civilizations-cultures share the same nature and differ in scale only. Using this macrotheory, we have described structure and dynamics of a Primitive Culture, Subculture, Culture, Civilization-Culture and a Supercivilization-Culture, as well as visualized the evolution of cultures and civilizations-cultures in a number of models (Alalykin-Izvekov 2009: 173-183).
- Compound Macrotheory of Cultures and Civilizations-Cultures. This macroculturological theory maintains that unlike societies, which rise and fall, cultures compound, absorbing and incorporating the valuable cultural systems from their predecessors and contemporaries.

- Umbrella Macrotheory of Cultures and Civilizations-Cultures. This macroculturological theory states that one culture or civilization-culture may be created and maintained by several societies or civilizations-societies.
- Cultural Selection Macrotheory. This macroculturological theory maintains that the more universal, the more essential to the survival and creativeness of humanity, the meanings, values and norms of a cultural system are, the longer its span of life is likely to be (Sorokin 1947: 709). Therefore, regardless of their civilizations-societies evolution dynamics, more advanced cultures tend to prevail over the less advanced ones (Toynbee 1947: 128).
- Supercivilization Macrotheory. This macroculturological theory states that several local civilizations-cultures may merge into one supercivilization-culture, which, after reconciling differences between its components, may turn again into a local civilization-culture.

CONCLUSIONS

1. There is an emergence of new multidisciplinary scientific fields reflecting the globalizing society's need for a comprehensive, in-depth study of global sociocultural as well as natural and abstract phenomena, and represents a paradigm shift in science. The emergence of Civilizational Science (Цивилизациоиика) represents such a paradigm shift in civilization-related studies and research. Civilizational Science constitutes an emerging global scientific field which potentially includes within its boundaries macrosociological, macroculturological, macrohistorical, metahistorical, macroamitological, macrofuturological, macroeconomical, world-systemic, and other related approaches.
2. Civilizational Science (Цивилизациоиика) may offer reliable, comprehensive, consistent, and scientifically sound ways to study any type, manifestation or aspect of a global multifaceted phenomenon of civilization. Within the bounds of this emerging multidisciplinary field we have proposed a Model of Civilizational Science, a Matrix of macrosciences and macrostudies, and, as examples of macrosciences, introduced the fields of Macrosociology and Macroculturology.
3. Within the framework of Macrosociology we have proposed a number of macrotheories, including the Integrated Macrotheory of Societies and Civilizations-Societies Evolution; Rise and Fall Macrotheory of Societies and Civilizations –Societies; Switch Back, Forth and Sideways Macrotheory; Repeated Stages Macrotheory; Invincibility Macrotheory; and Titanic Macrotheory. We further visualized those macrotheories with the help of the Integrated Model of Societies and Civilizations-Societies Evolution.
4. Within the field of Macroculturology we have also proposed a number of macrotheories, including the Integrated Macrotheory of Cultures and

Civilizations-Cultures Evolution; Compound Macrotheory of Cultures and Civilizations-Cultures; Umbrella Macrotheory of Cultures and Civilizations-Cultures; Cultural Selection Macrotheory; and Supercivilization Macrotheory. The Integrated Macrotheory of Cultures and Civilizations-Cultures Evolution was elucidated and visualized with the help of five computer models (Alalykin-Izvekov 2009: 173-183).

5. The macrosciences, macrostudies, and macrotheories mentioned are intended to provide explanations of a number of perennial dilemmas of humanity, including the urgent global problems of today, as well as to find multiple practical applications in futures analysis; modeling; forecasting; role-, simulation-, and business-games; scenario creation; trend analysis; extrapolation; forecasting by analogy; and testing of various sociocultural designs of the future.
6. The proposed macrosciences, macrostudies, and macrotheories may also be applicable on the advanced levels of higher education, for example in such courses as Macrosociology, Macroculturology, Macrohistory, Macrophilosophy, Macrofuturology, Macropolitology, Macroamitology, Macromythology and others.

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