Part I. PHILOSOPHY OF GLOBALIZATION AND METHODOLOGY OF GLOBAL STUDIES

Global Knowledge Revolution

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Today all spheres of human activity undergo global revolutionary transformations. We can speak not only about the era of globalization but also about something like a global intellectual revolution. Two interconnected processes take place, one of which is globalization of knowledge, while the other represents global knowledge establishment. The authors want to determine the place of the exploration of global processes in modern science, to build a common vision and to estimate the prospects for Global Studies. One can speak about possible formation of global knowledge that may become a basis for the whole globalized science and education of the twenty-first century and may be used in global practical activities aimed at survival of civilization and preservation of biosphere and geosphere.

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There is a growing understanding in academic literature nowadays that we live in the era of globalization and global intellectual revolution. The term 'global' even appears in everyday life, expressing a new view on the surrounding world which is already perceived as global. So it is important to study the way science reflects the global situation that has emerged and become the focus of our life. What are the typical processes of scientific cognition that should be involved in the current and upcoming global changes? In fact, since the last century, science has got interested in global phenomena of various kinds, but new academic disciplines and research areas focused on global matters emerged mainly in the second half of the twentieth century.

Emergence and development of Globalistics and other fields of Global Studies turned out to be a natural academic response to global challenges of the twentieth and the early twenty-first century. Realizing the important role of globalization and other universal, planetary phenomena and understanding prospects for further progress of global activities became an important sphere of academic inquiry and a new stage of modern science development. The Global Studies discipline already becomes the leading academic and educational process and serves as one of the bases for modern scientific worldview. A clearly marked and intensive process of globalization of science is taking place; all spheres of human activities undergo a certain global revolutionary transformation.

Therefore, a very important objective of Global Studies is to define its own position and role not only within modern but, most important, within future science. For this purpose it is necessary to reveal the evolutionary megatrends gaining global dimension and

prospects. Another goal, at least of the same importance (if not more), consists in defining the role of global processes in society and nature, and in the processes of their evolution and co-evolution. A number of publications make an impression that, for example, globalization suddenly emerged and came to existence as if it had not been just a part, though an important one, of social and socionatural interactions and development processes. This brings about the ideas of one global process generating another global phenomenon, while their social and natural environment appears to be passive as regards this global genesis that seems 'autonomous'.

The perception and research of global phenomena is also important for further creation of high humanitarian and social technologies for education, international activities, global politics and global economy to form a global technological pattern of information society striving for sustainable growth. Since at present, no forms and models of global education are elaborated and effective enough to be taken as an example to follow it is particularly important to use the results of Global Studies in education. Therefore, the necessity arises to identify more clearly the place of global processes in science, to form a common view on the world educational process, to estimate Global Studies prospects and work out a common conception of global education.

So the further development of increasing global focus of science has not only scientific and research aspects, but educational and methodological ones as well. The scientific and research aspects consist in a more profound perception, elaboration and prospective forecast of the most effective ways of development of Global Studies, and, in particular, of Globalistics as a new fundamental area of interdisciplinary studies that influences the process of globalization of science in general. Educational aspects are related to scientific and research ones and are focused on the implementation in teaching process of new knowledge obtained through the scientific research. This is expressed both in the creation of special training courses and in the formation of global capacity in traditional courses connecting subject matters and methods of their research with the emergent global knowledge.

1. Genesis of Global Worldview

It is often suggested that global vision of the world and idea of humankind (Granin 2008: 7) emerged in their early and primitive forms in the Axial Age. One can hardly agree with this statement, since the concept of the global as covering the whole world was practically proved in our life and universe almost two thousand years later. Still one should take into consideration that 'the scientific truth of the idea on the spherical form of the Earth' was a well established fact 'in the early sixteenth century and almost 400 years later it finally captured and entered the humankind's conscience' (Vernadsky 1981: 107).

At the same time both the recognition and the achievement of this truth needed centuries-long work. Many centuries before CE, the idea of spherical form of the Earth emerged for the first time among the Pythagoreans. In those first concepts the idea was not connected with any geographic or astronomic data. It emerged and was proved by pure geometrical reasoning, by the ideas of harmony and mathematic aesthetics that were so typical of all doctrines of the Pythagoreans who foreran all major fundamentals of our scientific worldview: a sphere is the most perfect geometric figure and the Earth that holds such an important place in human worldview should have such form.

By the time of Plato, that is by the early fourth century BCE, the idea of the Earth's spherical form had finally eliminated the previous Greek concepts of a disk-like, flat, cyl-

inder, and endless conic form of the globe; it was underpinned by the data provided by the travelers and was the result of the cultural development. In the late fourth century BC, after a thorough examination of all contradicting statements this idea was supported by Aristotle and together with his ideas, spreading in the ancient world in the first century BCE, his doctrine about the spherical form of the Earth became an ordinary and common knowledge among educated people and penetrated classical literature. Many of the reasons that were expressed and emphasized at that time later were repeated in scientific debates in the Early Modern Period. These views became an impetus for the geographical discoveries and underpinned the ideas of searching for new unknown countries in the following centuries (Vernadsky 1981: 107–108). By the way, as Vladimir Vernadsky also noted, Magellan 'undertook his round-the-world voyage relying on the idea of spherical form of the Earth, of which the Catholic Church was aware and yet blessed this voyage' (*Ibid*.: 106).

In Russia the global thinking and worldview date back to Mikhail V. Lomonosov (see Abylgaziev *et al*. 2011). One should emphasize that Lomonosov's scientific efforts were also the focus of Vernadsky's research after 1900 (his several works were devoted to Lomonosov) and as a professor of Moscow University, Vernadsky published 'On Significance of Lomonosov's Work in Mineralogy and Geology' (Vernadsky 1900). Vernadsky noted that Lomonosov was ahead of his time with his correct estimation of the whole range of phenomena incomprehensible by his generation; he was in advance of his century and seems to be our contemporary in terms of objectives and goals of his scientific research. Vernadsky highly estimated Lomonosov's work 'On Terrestrial Strata' (Lomonosov 1949) and considered it a brilliant essay in geological science which provided the earliest foundations of geology that did not exist as a science at that time. Lomonosov also was the first scholar to view the Earth as an integral whole formed under the impact of interconnected internal and external factors.

Vernadsky positively estimated Lomonosov's suppositions on the mechanisms of earthquakes, on the ore lodes formation, their shift towards the Earth's crust breaks, on the origins of soils and fossil fuels, formation of amber and a number of other minerals and ores (Yanshina 1998) and even planned to write a work on Lomonosov's physical and chemical research; unfortunately, we can find only two pages with introduction under the title 'On M. V. Lomonosov's Biography' (Vernadsky 1988: 332–333). In 1927, Vernadsky established a special Lomonosov Commission affiliated with the Presidium of the Academy of Sciences. Later, in 1950–1967, thanks to the activities of the Commission, the Academy of Sciences published Lomonosov's complete works in ten volumes that included also all materials collected by Vernadsky's commission (Yanshina 1998: 444–451).

Undoubtedly, some Lomonosov's ideas about the interconnection of processes and phenomena taking place on the Earth influenced Vernadsky's works, in particular, the formation of his concepts on biosphere as a global system where the living matter plays the major role. One should also point that soon after his first works on Lomonosov, Vernadsky delivered a course of lectures in Moscow University in which he particularly addressed the matters of geographical discoveries and evidence of the spherical form of the Earth and a number of other matters that many scholars consider to relate to the origin of globalization process. Later these lectures were published in a book on the history of science mentioned above (Vernadsky 1981).

Vernadsky considered Lomonosov to be a great scientist, which were a few in the thousand years of human history. In the article 'In Memory of M. V. Lomonosov', Ver-

nadsky wrote: ‘A number of Lomonosov's ideas are clearer, more relevant and comprehensible in the beginning of the twentieth century than they used to be in the middle of the last century’ (Vernadsky 1911: 262; 1989: 52). The same can be said about the significance of Vernadsky's academic heritage: his ideas are clearer, more relevant and comprehensible in the beginning of the twenty-first century than in the last century. The scholar's ideas about global phenomena that were almost unnoticed earlier, are only starting to open out and will be realized to a full in the course of further globalization of science and expansion of global processes. It is no coincidence that Vernadsky is referred to as ‘a Lomonosov of the twentieth century’, but it becomes obvious that his creative contributions are even more relevant for the present century. Today Vernadsky is considered a great thinker of the global era that also can probably turn into the noosphere era.

Many thinkers were at the origins of global worldview and created its fundamentals (some of them are mentioned in Alexander Chumakov's monograph [Chumakov 2013]). However, it was only Vernadsky who initiated the formation of a global consciousness and thinking as a new way and direction of environmental exploration with its own peculiarities. The scholar himself in the fragment ‘On the Scientific Worldview’ stressed that ‘the discovery of America, the circumnavigation of Africa and discovery of Australia were of great significance for the scientific worldview’ (Vernadsky 1991: 195) and like other round-the-world voyages of the great navigators of the eighteenth century strongly influenced our scientific worldview (*Ibid.*: 196). However, the scholar's global (planetary) perception of the world was formed not only due to the globalization processes he explored, but also in the course of his other researches.

In his works Vernadsky paid great attention to the formation of scientific worldview that, according to Mikulinsky, the editor of the book *Selected Works on the History of Science*, he understood as ‘an aggregate of fundamental laws and facts discovered by science’ (in Vernadsky 1981: 304); like, for example, in his ‘Essays on the History of Modern Scientific Knowledge’ (*Ibid.*: 32–185). His essays and notes on the issues of formation of scientific worldview give the impression that he considered it not only from the evolutionary perspective, but also showed that most important scientific discoveries significantly transformed the worldview, as it was with geographic discoveries. At the same time such worldview transformations concern the global trend of scientific understanding of the world as well.

The question is: when did the global trend in science emerge? The formation of one of the main areas of Global Studies, Globalistics in Russia, is usually dated back to the late 1960s – early 1970s (see Ilyin and Ursul 2013 for more details).

However, it might be reasonable to shift the origin of Globalistics to the first half of the last century. In our opinion, it is reasonable to shift the emergence of the global trend in science, notwithstanding its specific name, to several decades earlier and set it at the first half of the last century. In that very time, in particular in the 1930s, Vernadsky, at that time the Head of Mineralogy Department and professor of Moscow University, started to study a number of global processes (*e.g.*, the one we now consider globalization, though at that time this process was not yet denoted by the term ‘globalization’). We argue that it was Vernadsky who pioneered the global worldview and thinking and also founded Global Studies and that many of his ideas focused on the planetary area.

The scholar started studying many processes of global character as early as in 1902–1903, which one can deduce, in particular, from his ‘Essays on the history of the modern scientific world view’ (1903; see in Vernadsky 1981) and a course of lectures delivered on

the topic in Moscow University. However, the scholar had no time to publish these lectures as a separate book, but later he included the first three of twelve lectures in the mentioned book (and he planned to write in total over 20 lectures) (Vernadsky 1981: 301–303). Thus, we can suppose that the scholar started working on the global issues in the early twentieth century, although, his research in this area at that time was little known.

Vernadsky believed that 'In the twentieth century for the first time in the history of the Earth, the human being learned and covered the whole biosphere, completed the geographic map of the Earth and colonized its whole surface. The mankind became a single totality in the life of the Earth' (Vernadsky 1991: 240). In his book *Academic Thought as a Planetary Phenomenon* (written in 1938) the scholar provides numerous facts and arguments similar to the ones of the contemporary scholars, indicating the humankind's endeavor to unity and integrity. In fact, in the book Vernadsky studied the globalization process and to some extent foresaw its outcomes.

Vernadsky introduced his 'global' ideas, in particularly, in his *Selected Works on the History of Science* (a number of its articles and fragments were written in the beginning of the last century) as well as in *Academic Thought as Planetary Phenomenon*. According to A. L. Yanshin and F. T. Yanshina, the authors of the preface to the later edition of the book, *Academic Thought* is the culmination of Vernadsky's creative work 'on the destiny of scientific cognition, on relations between science and philosophy and on the future of the humankind' (in Vernadsky 1991: 9).

A decade later, after World War II, the German philosopher Karl Jaspers (Jaspers 1991: 141, 158, 205) independently from Vernadsky came to almost the same conclusions on the global unity of the humankind.

We believe that it was Vernadsky who laid the ground for Global Studies both in Russia and in the world science in general and, thus, he can be rightfully considered the founder of the global trend in science, notwithstanding the point that he did not use the terms that were introduced later (Globalistics, Global Studies, *etc.*). We should emphasize that we speak about the global trend in science that includes the whole range of already existing disciplinary, interdisciplinary and transdisciplinary studies of global processes and systems. But it would be precipitate to argue that the scholar laid the foundation only for Globalistics or another area of global science. It is rather reasonable to speak about the priority of his academic interests in a broader 'global format'.

And still in the world academic literature there is a strong adherence to terms, particularly, to the term 'globalization'. From this 'terminological position' the authorship of the term is attributed to Roland Robertson who coined it in 1983.[1] In the title of one of his articles he uses the term 'globality'. Later he also elaborated and explained the notion of 'globalization' which he formulated as an integral conception and developed in a special research in 1992 (Robertson 1983, 1992).

In this sense we can hardly believe that the global trend in science is connected mainly with the Club of Rome activity (Chumakov 2012: 55). Meanwhile, many Russian scholars suppose that terms 'Globalistics' and 'Global Studies' came into common use due to the global dangers, especially after the first reports of the Club of Rome. The latter undoubtedly played an important role in the formation of Global Studies, they turned the consciousness of a significant number of scholars and society to the global issues, but even in Europe this was not the first 'global' research. In the 1950s, this role of a certain 'transna-

[1] Here one should point that one of the authors of this work used the term 'globalization' in a different context earlier than Robertson (see, *e.g.*, Ursul 1981: 204).

tional actor' after Vernadsky and Jaspers was played by already mentioned globalists whose activity, including the academic one, is still little known (Ursul 1998).

Globalism is an ideology and movement which aims at a shift from the present variety of peoples' activity to the unified, globally governed, integral world. Globalism as an ideology (unlike its Euro-Atlantic version) represents a sum of ideas meant for peaceful settlement of global issues, for establishment of institutions and adoption of norms common for all people on the planet. .

At present Global Studies are turning into a high-priority trend in Social Studies that seeks broader interdisciplinary and transdisciplinary connections and extensions. The global trend in science facilitates the creation of new general scientific and universal planetary principals and forms of academic and global activity and makes a great contribution to formation of the modern scientific picture of the world and thus promoting the global governance formation.

2. The Subject Field of Globalistics: Expansion or Contraction?

In the Russian academic literature Globalistics has been most often interpreted (and this notion was included in the first international encyclopedia on Globalistics) as an interdisciplinary integrative area of academic inquiry aimed at identifying the essence of globalization and global issues, reasons for their emergence, laws and tendencies of their development and reinforcement of positive and elimination of negative consequences with the purpose to ensure human survival and biosphere preservation (Mazour and Chumakov 2003: 199; Chumakov 2008; see Ilyin and Ursul 2013 for more details).

Below we will suggest an alternative and, to our mind, a more substantiate and broad point of view which involves the interaction between society and nature.

One should point that process of spontaneous globalization did not start several centuries ago from the geographical discoveries as is considered within Eurocentric approach. As Vernadsky shows, even the geographical discoveries started not with Columbus' and Magellan's voyages but with the Norsemen's voyages (Vernadsky 1981: 121–129). However, 'the spherical form of the Earth could be proved only when a man got the opportunity to travel around the Earth and put the whole picture of the globe on a map. This was done slowly and gradually through centuries-long work… The solution of the issue of the form of the Earth was connected with the first circumnavigation' (*Ibid.*: 115).

If we look deeper in the ancient history of the humankind, the processes similar to the global issues may be discovered back in the Paleolithic Age and early Neolithic Age. We can argue that global issues in a somewhat different form also emerged earlier, when there was no globalization in the contemporary sense (see Ilyin and Ursul 2013 for more details).

For example, Neolithic Revolution that started in various separated regions of the planet about twelve thousand years ago constituted a global evolutionary and historical process that facilitated survival of the mankind in that period (see Ilyin and Ursul 2013 for more details).

Such examples of social and socionatural processes prove that processes of this kind became global from the perspective of quality and content criterion but not in terms of territory and geography. However, it is reasonable to define the stages of globalization and other global processes formation by criteria of globality: the geographical factor within this approach does not initiate a global process (*e.g.*, globalization), but completes it.

Therefore, from the perspective of the content criterion of globality, one should shift the origin of globalization back to the ancient times.

Globalistics and Global Studies may be viewed not only as academic research sphere, but also as global practical activity rapidly developing at present (in particular, following Vernadsky's ideas as a geological activity) and aimed at the above-mentioned reinforcement of positive and mitigation of negative consequences of these processes for the humans and biosphere (see Ilyin and Ursul 2013 for more details).

In general, under the influence of Globalistics many scientific areas have already gained their global perspective entering the academic field of Global Studies and broadening it. The typical example is Geopolitics that is not included in Globalistics (though is tightly connected to it), but still has already become global (Abylgaziev, Ilyin, and Kefely 2010) (and there even may be its space continuation). Many branches of scientific knowledge will follow this route getting under the influence of the 'global attractor' of knowledge accumulation. Very soon we will face traditional branches of science getting the 'global' adjective added to their names.

The question arises: why does some academic disciplines entering interdisciplinary interaction with global factors and challenges to science start to 'merge' with Globalistics, while the others just put the global prefix before already existing disciplines? We do not see any serious reason under this nomination phenomenon and believe that it primarily depends on a researcher to give this or that name. Besides, this process most often goes by inertia increasing the number of supporters who agree with the initial name. In any case, the authors of the present paper have already given such names to new branches of Globalistics as Evolutionary Globalistics, Paleoglobalistics, Futuroglobalistics, Nooglobalistics, Space Globalistics and others; thus, other scholars have not argued against this. Still other names may be given as well, if academic community for some strong reason will not like the already given names. Together with further development of Globalistics the process of globalization of scientific knowledge has started which becomes open to an increasing number of branches of knowledge (this process will be dwelled upon in the end of this article). It seems that a number of such branches will not give its fields of Global Studies to the subject area of Globalistics like it has already happened to Global Economy (the name of 'Economic Globalistics' is not used for this very reason). It is rather probable that even 'Legal Globalistics' that has already received its name will still change it into 'Global Legal Studies' or will carry on Global Studies in this direction (Ursul 2012: 8). Together with Political Globalistics the term 'global policy' is also used, especially in foreign literature (Anheier and Juergensmeyr 2012).

Thus, two tightly connected but still different processes proceed: globalization of knowledge (within the framework of broadly understood Global Studies) and the establishment of global knowledge basically due to development of Globalistics proper (Ursul 2011). During the last two decades, Globalistics has switched to the research of globalization process giving significantly less attention to the study of global issues. If earlier the subject area of Globalistics included study of global issues (Dunnov 1991–1992), now the majority of scholars focus their efforts on study of globalization. As for other global phenomena within Globalistics subject area, they remain without due attention; anyway, it seems that global issues and globalization constitute the main subject of research in the sphere of Globalistics.

At the same time when Globalistics was associated with global issues study, globalization also existed and developed although in a different form, 'unnoticed' by many people. To some extent the global process that we perceive as globalization today, was reflected in academic literature as well (including Vernadsky's works), although this process was not denoted as 'globalization'. This refers not only to Vernadsky: other scholars, for example, Fernand Braudel and Immanuel Wallerstein, have studied the same process from 'their own perspective'.

If Globalistics is reduced to the study of globalization alone, there will probably emerge some more global processes that will attract attention of the majority of scholars and then we will have to define the notion of Globalistics again. Or, as mentioned above, we will have to include all other processes of global character in the subject area of Global Studies.

Now, in course of a discussion on globalization, a significant part of scholars concentrate on the social aspect, believing that globalization constitutes a megatrend to the unification of the mankind and to the global integrity of civilization (Granin 2008: 7). However, the upcoming threat of anthropo-ecogical catastrophe reveals a necessity to solve a whole range of social and socionatural issues and form co-evolutionary relations between society and nature. So the future integrity of the mankind by all means should be combined with environmental security on the planetary scale. Globalization, from this point of view, is considered as a global process of forming the humankind integrity and simultaneous establishment of co-evolutionary relations with nature, which may be fulfilled via global shift to sustainable development of the noosphereic trend.

3. On the Place and Status of Global Studies in Science

It seems we can define global processes as the processes taking place on our planet and showing a certain 'global integrity' or tending to it. In this sense, global processes are not just processes taking place on the Earth, but universal planetary-scale ones, which cover the whole planet. However, it is important to pay attention to the existing etymological 'dichotomy' and linguistic ambiguity of the term 'global'. The term 'global' etymologically derives from two languages but not one: Latin (*globus* – sphere) and French (*global* – universal, taken in general). And in modern science the term 'global' is used in these two 'extensional' senses: 1) global as planetary, related to the globe; and 2) global as comprehensive, universal, general, and in this sense it outstretches to the sum of things or to the whole Universe. The global processes may be interpreted within these two, approached respectively: 1) global processes as those taking place on the globe in general; 2) global processes as those embracing the whole sum of things, at least the part of it, that is included in the observable universe.

It is also worth noting that one of the early 'model concept' of the Universe as a certain 'celestial globe' in the form of celestial spheres depiction with stars and other cosmic objects mapped on them derives from the same Latin meaning. By the way, the already discovered three main forms of matter existence (dark energy, dark matter and baryonic matter) may also be represented in the form of interpenetrating and interconnected fields (spheres).

The discovery of the spherical form of Earth was essential for the expansion of anthropogenic activity and for Global Studies. As Vernadsky noted: 'The first large main basis for the modern scientific worldview is the discovery of the Earth's form and size' (Vernadsky 1981: 104). Thus, '[d]ecision on the form of the Earth was connected with the first round-

the-world journey. Incidentally, America was discovered and in addition, this extraordinarily expanded the horizons available to an educated person' (Vernadsky 1981: 115).

However, let us move from etymology to the meaning of the terms that have already become conventional in modern science. In the contemporary global knowledge the term 'global' is used in the sense of 'embracing' a certain space and having a systemic integrity 'determined' by this or that space (the globe, the Universe). This meaning, which we denote as 'spatial globality', is often implied when we analyze globalization processes and a number of other global processes.

However, there is another meaning of the term 'global' which states that a given process (object) has some universal content-related characteristic, property or parameter that defines absolutely all existing processes and objects. For example, all objects of baryonic matter have gravity or a three-dimensional space. Or all people inhabiting the planet, even if they are not united in a certain global and integral system, in their development have some general social regularities. One can say that regularities typical of all people without exception and their communities (societies) are also global characteristics in the sense that they are inherent in the whole social movement and development.

Comparing these two meanings of the term 'global' (spatial and universal content-related) we can suppose that the latter meaning of the term turns out to be more profound and all-embracing. If any social processes have not gained their global integrity yet, they by their nature still possess certain universal integral content-related properties, which in this case turn out to be attributive universal human characteristics. It is clear that the attributive content-related qualitative criterion of globality proves to be 'stronger' and more significant than the 'spatial and quantitative' geographical one. Ontologically, 'qualitative attributive globality' is related to the nature and essential features of an object or process, to its inherent nature and qualitative content. In this sense globality, as an attribute of a certain tangible process or item, is its internal existential globality, while a 'quantitative' criterion appears as spatial extension of this content-related qualitative criterion. Globality of a certain process in the spatial sense is not persistent and this is well proved by the research of globalization phenomenon.

Thus, the important role of the term 'global' ('globality') also adds certain peculiar features to the global trend in science and groups almost all its cognitive means and forms. This specific notion influences the perception of the place and status of global processes research.

Globalistics and, moreover, Global Studies turn out to be interdisciplinary fields, embracing a significant number of academic disciplines and scientific research areas. And at the same time, there is an obvious tendency for the establishment of many notions of Globalistics and Global Studies as not simply interdisciplinary and transdisciplinary notions, but as general scientific categories. It is also important to find out (and this is widely discussed) what 'knowledge about the global' constitutes within the modern science: a science (in the meaning of a discipline) or something different, for example, a scientific trend, a scientific issue or a field of academic inquiry.

It is worth emphasizing that Vernadsky encountered the same issues when analyzing the synthesis of academic disciplines exemplified by Physical Chemistry (and Chemical Physics) and especially Biogeochemistry (which he actually founded) (Vernadsky 1981: 118–124).

On the one hand, following the 'logic of specialization' and differentiation in science, we can suppose that new disciplines (a science, a branch of science) emerged in the form of Globalistics and Global Studies. Scientists are already used to the fact that when new fields of knowledge emerge, it is reasonable to speak about a new science as a branch (component, unit) of science regarding the latter as an integral formation. In this case science is understood as a separate discipline or a branch of scientific cognition. This tradition complies with the already established disciplinary organization of science, where a discipline acts as the most significant structural unit of science forming an invariant, relatively sustainable structure of knowledge and a reference system, that allows putting in order the whole variety of science analysis units (Mirsky 1980; Ogurtsov 1988). Any academic discipline has its own subject areas, principals and methods of research, common organization institutions, educational forms and structures and also unified ways of formal and informal communication among scientists and between them and society. Within a broader and more integral system of 'science' a discipline usually acts as an established and necessary form of existence and systematization of knowledge, its development, distribution and application.

Meanwhile, discipline and science, as Kasavin notes, are not identical notions; though in modern Science Studies they are rarely distinguished (Kasavin 2010). This very paradigm of scientific thinking mostly deals with emerging fields of scientific knowledge. With this style of reasoning the new global trend of science in our country was named Globalistics while in foreign literature it is Global Studies (though in the USSR they used to speak about 'Western Globalistics').

The question whether to call this field of study Globalistics, Global Studies or some other way also depends on how it is positioned in the system of scientific knowledge. It is possible that it is a science meaning a discipline but only in a certain general part that really integrates and generalizes most fundamental knowledge about global phenomena and is not clearly defined yet. For example, Globalistics also includes such sub-disciplines as Political Globalistics, Information Globalistics, Space Globalistics, *etc*., that go beyond the limits of a purely disciplinary vision of Globalistics, constituting a result of integrative interactions in scientific knowledge. Thus, Globalistics turns out to be a certain 'centaur-like' disciplinary and interdisciplinary cognitive phenomenon.

In this sense Global Studies are very much like Complexity Studies (usually denoted in Russia with the term 'Synergetics' proposed by Hermann Haken) that originated in Physics and at first developed within that disciplinary perspective. At the same time, according to Elena Knyazeva, Complexity Studies achieve certain limits of their disciplinary expansion (Knyazeva 2011: 256). Hermann Haken insist that Synergetics [Complexity Studies] is a discipline and, according to him, this name is given not only because it studies joint action of many elements of systems, but also because to find general principals governing self-organizing cooperation of many disciplines is necessary (Klimontovich n.d.). And these numerous disciplines add peculiar integrity to the synergetic approach exactly due to the effect of synergy and consistency.

Meanwhile, according to Stepin [n.d.], 'interdisciplinarity and transdisciplinarity do not contradict the status of Synergetics [Complexity Studies] as a special discipline'. Stepin stresses that '[synergetics] should outline its subject area, identify a system of methodological principles of research and include them in the established system of scientific knowledge' (Stepin n.d.).

Similar questions or issues on the place and status of newly emerging academic phenomena in science were already discussed when some other new fields of knowledge appeared and their rather marked integrative potential was manifested. For example, in the debates on the scientific status of Cybernetics: can it be considered as a separate science (discipline) or a scientific trend? (Ursul 1981: 204–216) There was a view that a scientific trend constitutes a system of academic disciplines and issues having a rather general research program that in case of Cybernetics consisted in cognition of general regularities of informational connection and management in biological and social spheres (*Ibid*.: 207). And most frequently one could hardly deny that Cybernetics is at the same time both a separate science (discipline) and interdisciplinary scientific trend.

Globalistics and Global Studies pass through the same stages of defining their position in science. Globalistics, if it is considered a newly emerging academic discipline, also goes beyond the established disciplinary boundaries. This is usually emphasized, but many scholars, in accordance with disciplinary thinking, continue considering it a branch of knowledge – a discipline (science), which looks logically contradictory. Thus, it would be strange to call this academic research phenomenon an 'interdisciplinary discipline'. But, probably, it should be called (taking into account that science and discipline are still not identical notions) an 'interdisciplinary science'? This term is often used in Wikipedia, where Biochemistry and Biophysics, for example, are described as such sciences.

The question whether the phrase 'interdisciplinary science' is adequate still remains disputable, and at the 'competitive selection' of the most suitable name for disciplines both for Globalistics and Global Studies some time should pass till this name becomes conventional. But for this purpose it is necessary to prove or at least suggest as an epistemological hypothesis that such a centaur-like 'disciplinary and interdisciplinary' academic phenomena may conceptually exist.

It is worth noting that Vernadsky expressed exactly the same idea when pointing to Biogeochemistry as 'most tightly connected with a certain Earth shell, *biosphere* and its biological processes in their chemical atomic manifestation' (Vernadsky 1991: 119). He observed synthesis of various academic disciplines in Biogeochemistry (and mostly those integrated in its name that does not accurately identifies its position in the system of knowledge), notwithstanding that 'as it is clearly stated in its name, chemical representations and chemical phenomena play the leading role in comparison to geological and biological matter and phenomena' (*Ibid*.). However, the scholar believes that Biogeochemistry is a separate (complex and young) academic discipline and he repeats this many times in his ingenious speculations on Biogeochemistry (*Ibid.*: 119–122).

While the term 'interdisciplinary discipline' looks logically and stylistically controversial and, thus, unsuccessful and hardly applicable, the term 'interdisciplinary science' may, to some extent, get 'a right to citizenship'. But for this end we should introduce a new conceptual niche for the term 'science' itself that is mainly used in two meanings. The first meaning is science as a holistic systemic formation (regardless its gnoseological, activity-related or other interpretation), for example, as a component of culture and different from other constituents. Another meaning is a separate branch or academic knowledge about the above mentioned holistic phenomenon (or, as Vernadsky wrote, 'a separate science'; *Ibid*.: 118). These two meanings were formed already within the framework of a disciplinary view on science, when integrative interdisciplinary processes did not yet have strong influences on the understanding of the term 'science'. Within the context of the present arti-

cle, the third interpretation may also emerge: the 'centaur-like' meaning of the term 'science' used in the sense of 'interdisciplinary science'. Although, in our opinion the term 'interdisciplinary studies' (rather than 'interdisciplinary sciences') appears more appropriate and common.

Chumakov has expressed another point of view on the academic status of Globalistics. He believes that 'to avoid wrong analogies and methodological confusion, it is important to emphasize that Globalistics should not be interpreted as a separate or special academic discipline as many other that emerge resulting, as a rule, from scientific knowledge differentiation or at the interface of related disciplines. It results from the opposite integration processes typical of modern science and constitutes a area of research and cognition where various academic disciplines and philosophy (in close interaction and from the positions of each science subject and method) analyze all possible aspects of globalization and suggest certain solutions of global issues, viewing them as an integral system' Chumakov 2012: 4). This point of view (*i.e.*, the interdisciplinary approach) differs from Cheshkov's opinion of that Globalistics is an aggregate of different disciplines that just have a common 'label', or in other words, as a multitude of different sciences (multidisciplinary approach) (Cheshkov 2008). By the way, something similar is observed in the development of global education as well, where the debates take place on the status of Global Studies and the set of related educational disciplines.

When we speak about Globalistics and Global Studies, the multidisciplinarity and polydisciplinarity of these fields of scientific cognition are rather obvious, for they include knowledge from various disciplines (and here the analogy is obvious with Biogeochemistry considered by Vernadsky). Polydisciplinarity implies the participation of a number of sciences in work on a certain issue, in this case global issues and processes, but at the same time sciences (disciplines) included in its subject area may only adjoin each other without serious interaction or synthesis. However, in fact many researchers of global phenomena argue not only about polydisciplinarity, but also about multidisciplinarity of this research area, because they include intersection and interaction of a number of sciences (disciplines or branches of scientific knowledge). The interdisciplinary studies are usually understood as a way to arrange academic activity that suggests cooperation between representatives of different disciplines in the study of the same objects, and even a certain form of their integration. Globalistics and Global Studies undoubtedly constitute such a form or way of scientific research.

In our opinion, a typical peculiarity of such new researches is that in a certain sense, mainly in theoretical and methodological one, such researches have a certain disciplinary status, as they emerged not only within science integration, but differentiation as well. Even having emerged as a result of synthesis, such an academic form of knowledge still turns out to be in a certain sense separated from everything else, including the knowledge it derived from. Vernadsky noted this, arguing that 'the matter that outstretched beyond the boundaries of one science inevitably creates new areas of knowledge, new sciences growing in number and speed of their emergence typical of the academic thought of the twentieth century' (Vernadsky 1991: 118).

The differentiation of Globalistics and Global Studies is, from a certain perspective, a process of science specialization and differentiation; the distinct field of academic research differentiated from already existing knowledge, from academic disciplines that existed before its emergence. But the emerging special global knowledge also possesses

a certain interdisciplinary and integrative potential. Interdisciplinarity and transdisciplinarity of Globalistics does not contradict its disciplinary status, but, in order that it could have the status of a discipline, some necessary conditions should exist (and they do exist).

Before interdisciplinary and transdisciplinary potential and status appear in any newly emerged science (discipline) it is important that all basic notions and conceptual ideas of a new distinct academic discipline should turn broad enough and, due to this, start their expansion within academic knowledge. Meanwhile, the broader ideas and notions of a new area of academic inquiry are, the higher probability it has to gain interdisciplinary and transdisciplinary status. And if a new separated research area in its conceptual field remains within the framework of the original discipline, it will continue developing along the path of specialization within already existing sphere of researches. Therefore, only those new special studies are destined to have an interdisciplinary status that contain in their theoretical stock broader and more fundamental ideas and notions than the ones used before.

However, in this case the interdisciplinarity often transforms into transdisciplinarity (the term was introduced by Piaget in 1970), which is a very important form (way) for science to get its integrity that Karl Marx dreamed of. The transdisciplinarity suggests that a certain area of science goes beyond disciplinary boundaries. It proposes to use universal forms and methods of academic research beyond the framework of a particular discipline in the course of interdisciplinary interactions. At first the transdicsiplinary notions, methods and theories emerged as a summary of certain disciplinary concepts and cognitive schemes, mainly in Physics, Chemistry, Biology and Mathematics. By the way, Mathematics represents a classical example of a discipline manifesting its transdisciplinary opportunities when entering the system of academic disciplines. Another example of transdisciplinarity is philosophy of science that penetrated many disciplines due to its methodological tools. The cognitive transdisciplinary forms and research tools at first develop within a discipline, then separate from its source and develop their own theoretical basis tested in other fields of knowledge.

There is a 'historical difference' of Globalistics from Global Studies and many other academic disciplines that has been mentioned above and in Chumakov's work: it 'consists in the fact that understanding of the global tendencies and principal solution of the issues generated by them requires not only theoretical research, but also corresponding effective practical activity. Thus, Globalistics objectively plays a worldview-related and integrative role in the sphere of science and practice, making many scholars, politicians and community leaders develop a new perception of the modern world and realize their involvement in the common destiny of the humankind. Globalization and issues it generates leave the humankind no other choice but to unity in order to overcome separation and controversies, possibly preserving uniqueness of cultures, centuries-old traditions and fundamental values of separate nations and peoples. But such a unity and coherence may be provided only by adequate understanding of processes and events taking place in the modern world, whose knowledge is worked out and articulated in Globalistics, where closest aims and long-term prospects are viewed in tight interaction' (Chumakov 2012: 8). However, this peculiarity of Globalistics (unlike Global Studies), as it has been mentioned, is also typical of a number of other interdisciplinary integrative trends, for example, space exploration, information science, *etc.* which also constitute a combination of academic research and certain practical experience.

4. Globalization of Science

Speaking about globalization of science (this term has been recently used rather often), there are abundant publications on academic mobility, brain drain from some countries to other, distribution of scientific knowledge around the world, publications and citation, use of new information technologies, international academic cooperation and formation of international academic organizations (often for solution of global issues) that facilitate globalization of science (Allakhverdyan, Semenov, and Yurkevich 2009). Vernadsky considered these issues when he dreamed of a powerful global academic organization (and even an 'academic think-tank' of the whole mankind) and grounded the necessity of various forms of international cooperation and scholars' organization as an important element of the noosphere establishment process (Vernadsky 1995: 124; 1977: 68). Further we are going to reveal the major trends of globalization of science due to Global Studies development.

Globalization of science manifests itself in various fields and areas. Particularly, it is expressed in the study of global characteristics and properties of research objects that were absent in 'pre-globalization period' or have not been realized yet. The process of filling science with global content, which we denote as a globalization of scientific knowledge, is mainly reflected in the emergence and development of Globalistics and Global Studies in the broadest sense creating the global world of knowledge. The further establishment of these studies was accompanied with the process of globalization of scientific knowledge, that covers a widening range of areas and branches of scientific knowledge adding the 'global' adjective to the names of certain academic disciplines and matters.

Development of Globalistics and Global Studies constitutes a significant part of the general process of globalization of science. The latter is to some extent similar to the influence of Mathematics, but it is not that significant yet. 'Global seedling' in this or that branch of science or problem may appear spontaneously, often even regardless of the results of global researches, and sometimes they may fail to trigger global trends and areas of research. Thus, science may gradually get 'saturated' with some, probably yet insignificant, scientific knowledge resulting in significant global transformations like establishment of a new global discipline or area of academic inquiry.

One can speak about the global world of knowledge in connection with pervasive processes of globalization and establishment of information society as well as of 'knowledge society' as an extension of the mentioned globalization process. It is quite clear that under globalization distribution of knowledge (including academic one) around the planet takes place as well as the formation of a peculiar type of knowledge that is defined as global knowledge. Rather often these processes are not distinguished (this also applies to processes of globalization of education and establishment of global education). However, it is reasonable to distinguish them, because, though they are interconnected, they are still differently focused processes of social activity and mainly academic activity.

In the course of establishment of information society and knowledge society there occur globalization of cognitive activity and this gives rise to different forms of transforming and integrating knowledge; thus, a certain global system of knowledge is formed that may be called the global world of knowledge. Naturally, this means that a general access to knowledge should form the basis of the shift to knowledge society (Towards Knowledge… 2005). As the German scholars Stehr and Ufer demonstrate, this process under market economy is very complicated; therefore, the establishment of the global knowledge

society turns out to be rather difficult (Conception… 2010: 178–185). In this process only a small part of knowledge has chances to obtain the global status, but a very large part of knowledge still faces difficulties that impede the movement to the global level. These forms (kinds) of knowledge never lose their local character, though there are situations when this character starts changing, while gaining universal global features (*Ibid*.: 191).

Further evolution of Global Studies will proceed both through 'globalization' of currently existing academic disciplines, trends and issues and through the development of Globalistics together with other areas of academic inquiry globalizing to some extent. Due to development of Global Studies and other global phenomena, science will gain its systemic and planetary integrity, and scientific knowledge will become available to scientists all around the planet.

It can also be stated that such rather obvious and important process of globalization of scientific knowledge is in progress. The prefix 'global' is somehow added to already existing sciences (disciplines): either to a form of a trend in Globalistics or before the name of a branch of science. A typical and already mentioned example is Economics that more often turns (and named) not just world but Global Economics (it is sometimes called Geoeconomics; see Kochetov 1999), and this notion summarizes new phenomena that have taken place in the world economy for the last decades and yet will take place under dominating influence of globalization and other global processes.

Another and even earlier example is Global Ecology as an independent complex scientific discipline studying biosphere in general, as it is important to forecast possible biospheric changes in future under the influence of human activity (Budyko 1977).

Global History (Karpov 2009; Shestova 2011a, 2011b; O'Brien 2008) and even Historical Globalistics (Ionov 2001) are still in embryonic state. Historical approach in Globalistics and global approach in History is the description of facts and events as consecutively changing in time, that is social dynamics in temporal dimension. Global History represents a trend of historical research of the global human development. The subject of Global History is the establishment of the social integrity of the world viewed in the context of global socionatural processes.[2]

The same refers to Global Geography (Lavrov and Gladkikh 1998), Global Cultural Studies, Global Sociology and a number of other academic disciplines with the prefix 'global' (Anheier and Juergensmeyr 2012). The thing is that 'Legal Globalistics' may still change its name into 'Global Legal Studies' or will continue global researches in this area (Ursul 2012a, 2012c, 2013). However, it is reasonable to suppose that the vast number of branches of science will not yield their areas of global researches to the subject area of Globalistics, as we see in the case of Global Economics (the name 'Economic Globalistics' is not used for this very reason).

They already speak about 'Global Political Science' and not only Political Globalistics that is included in the subject of Globalistics. Here everything depends on the dominating impact of either Globalistics or Political Science. Another example is Geopolitics, which has not been included in Globalistics (though tightly connected with it), but has already become global (Abylgaziev, Ilyin, and Kefely 2010). Many branches of scientific knowledge will follow this route falling under the influence of the 'global attractor' of increasing knowledge.

[2] URL: http://www.almavest.ru/ru/favorite/2012/02/08/282/.

Thanks to Globalistics, more and more academic trends gain global focus getting involved in the course of global researches, enriching and expanding them. Some of them may still enter Globalistics and promote its further expanding, others will remain beyond its subject area, although expanded, joining other global investigations. They are not positioned as parts of Globalistics, but as related sciences (disciplines) though already with a global dimension. The boundaries between these globalizing sciences and Globalistics remain vague, but all of them stay in the research area of Global Studies in the broad understanding. Further evolution of Global Studies will take place both due to currently existing academic disciplines and trends and development of Globalistics together with other areas of academic inquiry globalizing to some extent.

In the global dimension of science, as we have already mentioned, two interconnected but conceptually different processes take place, one of which is globalization of knowledge, while the other represents global knowledge establishment. Quite possibly, under globalization conditions distribution of knowledge (including scientific knowledge) around the planet goes on as well as formation of a specific type of knowledge, global knowledge. By this type of knowledge we understand knowledge received as a result of global processes and global evolution research that in prospect may become a basis for the whole globalized science and education of the twenty-first century and may be used in global practical activity aimed at survival of civilization and preservation of biosphere and geosphere (Ursul 2012b).

These globalization and global processes are hardly distinguished (the same is with the processes of globalization of education and global education establishment [Ursul 2011]). However, it is reasonable to differentiate them, because they are, though interconnected, still differently oriented processes of social activity and mainly academic activity. Global knowledge is generated in global trend of science (mainly in Globalistics and Global Studies), while globalization of science is accompanied with the current integrative globalization processes.

To some extent this process is manifested in digital networks and libraries (*Ibid.*). Naturally, it is meant mainly that general access to knowledge should present the basis for the shift to a knowledge society (*Ibid.*) that obviously will have global scale.

At present, Globalistics and Global Studies are still little involved in the broader systems of scientific knowledge. An attempt to change this situation is made in our monographs (Ilyin and Ursul 2009; Ilyin, Ursul, and Ursul 2012) where Globalistics is considered as the most important element of integrative general scientific knowledge forming the modern picture of the world based on the principles of universal or global evolutionism. This system of knowledge is formed in the course of interdisciplinary synthesis and integration processes in science representing forms and methods with the broadest subject area of academic research and use. The very use of global evolutionism as a methodology of academic inquiry (more frequently the analogy of bioevolution is used) led to differentiation of evolutionary approach within Global Studies.

References

Abylgaziev, I. I., Ilyin, I. V., and Kefely, I. F. 2010. (Eds.). *Global Geopolitics*. Moscow: Moscow State University. *In Russian.*

Abylgaziev, I. I., Gabdullin, R. R., Ilyin, I. V., Ivanov, A. V., and Yashkov, I. A. 2011. *Global Socionatural Processes and Systems*. Moscow. *In Russian.*

Allakhverdyan, A. G., Semyonova, N. N., and Yurkevich, A. V. 2009. (Eds.). *Science under Conditions of Globalization*. Moscow: Logos. *In Russian.*

Anheier, H. K., and Juergensmeyer, M. 2012. (Eds.). *Encyclopedia of Global Studies*. Thousand Oaks, CA: SAGE.

Budyko, M. I. 1977. *Global Ecology.* Moscow: Mysl. *In Russian.*

Cheshkov, M. A. 1998. Globalistics: The Subject, Problems and Perspectives. *Obschestvennye Nauki i Sovremennost* 2: 129–139. *In Russian.*

Cheshkov, A. M. 2005. *Globalistics as a Science. Essays on Theory and Categories.* Moscow. *In Russian.*

Cheshkov, M. A. 2008. Globality as a Basic Notion of Globalistics. *Vek Globalizatsii* 2: 3–11. *In Russian.*

Chumakov, A. N. 2008. On Subjects and Boundaries of Globalistics. *Vek Globalizatsii* 1: 7–16. *In Russian.*

Chumakov, A. N. 2012. Global Studies in the System of Modern Scientific Knowledge. *Voprosy Filosofii* 7: 3–17. *In Russian.*

Chumakov, A. N. 2013. *Globalization. The Outlines of the Integral World*. 2nd revised ed. Moscow: Prospekt. *In Russian.*

Conception of 'Knowledge Society' in Modern Social Theory, 2010. Moscow: INION (Institute of Scientific Information on Social Sciences) RAN. *In Russian*.

Dubnov, A. V. 1991–1992. *Globalistics*. Novosibirsk. *In Russian.*

Faddeev, E. T. 1964. Some Philosophical Problems of Space Exploration. *Dialectic Materialism and Issues of Natural Sciences.* Moscow: Moscow State University. *In Russian.*

Fedotov, A. P. 1999. *Introduction to Globalistics: Science Outlines about Modern World*. Moscow. *In Russian.*

Granin, Y. D. 2008. 'Globalization' or 'Westernization'? *Voprosy Filosofii* 2: 3–15. *In Russian.*

Ilyin, I. V., and Ursul, A. D. 2009. *Evolutionary Globalistics (Concept of Evolution of Global Processes).* Moscow: Moscow State University. *In Russian.*

Ilyin, I. V., and Ursul, A. D. 2013. Global Studies in Modern Science. In Grinin, L. E., Ilyin, I. V., and Korotayev, A. V. (eds.), *Globalistics and Globalization Studies: Theories, Research, and Teaching* (pp. 146–155). Volgograd: Uchitel.

Ilyin, I. V., Ursul, A. D., and Ursul, T. A. 2012. *Global Evolutionism: Ideas, Problems, Hypotheses*. Moscow: Moscow State University. *In Russian.*

Ionov, I. N. 2001. Historical Globalistics: Subject and Method. *Obschestvennye Nauki i Sovremennost* 4: 123–137. *In Russian.*

Jaspers, K. 1991. *The Origin and Goal of History*. Moscow: Politizdat. *In Russian.*

Karpov, S. P. 2009. Historical Science at the Modern Stage: The State and Prospects of Development. *Novaya i Noveishaya Istoriya* 5: 17–26. *In Russian.*

Kasavin, I. T. 2010. Interdisciplinary Research: Towards the Concept and Typology. *Voprosy Filosofii* 4: 61–73. *In Russian.*

Klimontovich, N. n.d. Complexity Studies: Slogan or Science. [e-book]. URL: http://spkurdyumov.narod.ru/VvedenievSyner.htm. *In Russian.*

Knyazeva, E. N. 2011. The Present and Future of Transdisciplinary Researches. In Krushanov, A. A., and Mamchur, E. A. (eds.), *The Future of Fundamental Science: Conceptual, Philosophical and Social Aspect of the Problem* (pp. 248–258). Moscow: URSS. *In Russian.*

Kochetov, E. G. 1999. *Geoeconomics (Exploration of the World Economic Space).* Moscow: VEK. *In Russian.*

Kostin, A. I. 2003. Global Studies Formation. In Mazour, I. I., Chumakov, A. N. (Eds.), *Globalistics. Encyclopaedia*. Moscow: Raduga. *In Russian.*

Kostin, A. I. 2005. *Ecopolitics and Global Studies*. Moscow: Aspekt Press. *In Russian*.

Lavrov, S. V., and Gladkikh, Y. N. 1998. *Global Geography*. Moscow: Drofa. *In Russian.*

Lomonosov, M. V. 1949. *On Terrestrial Strata and Other Works on Geology*. Moscow – Leningrad: Gosgeolizdat. *In Russian.*

Mazour, I. I., and Chumakov, A. N. 2003. (Eds.). *Globalistics: Encyclopaedia.* Moscow: Raduga. *In Russian.*

Mirsky, E. M. 1980. *Interdisciplinary Researches and Disciplinary Arrangement of Science.* Moscow. *In Russian.*

Nelson, R., and Winter, S. 2002. An *Evolutionary Theory of Economic Change.* Cambridge, MA: Harvard University Press.

O'Brien, P. 2008. *Global History. Making History. The Changing Face of the Profession in Britain*. [e-book] URL: www.history.ac.uk/makinghistory/resources/articles/global_history. html.

Ogurtsov, A. P. 1988. *Disciplinary Structure of Science*. Moscow: Nauka. *In Russian.*

Robertson, R. 1983. (Ed.). Interpreting Globality. *World Realities and International Studies*. Glenside, PN: Pennsylvania University Press.

Robertson, R. 1992. *Globalization: Social Theory and Global Culture.* London: Sage.

Shestova, T. L. 2011a. Global History as a Trend of Academic Researches. *Sotsialno-gumanitarnye znaniya* 6.

Shestova, T. L. 2011b. *Global Historism and Its Role in Development of Society Knowledge.* Moscow: MAKS Press. *In Russian*.

Stepin, V. S. n.d. On Philosophical Grounds of Synergetics. [e-book]. URL: http://spkur dyumov.narod.ru/Philos.htm#Ph408. *In Russian.*

UNESCO World Report. 2005. *Towards Knowledge Societies.* Paris: UNESCO. *In Russian.*

Ursul, A. D. 1964. Some Philosophical Issues of Space Exploration. Moscow: Znaniye. *In Russian.*

Ursul, A. D. 1981. *Philosophy and Integrative-General Scientific Processes*. Moscow: Znaniye. *In Russian*.

Ursul, A. D. 1998. *Russia's Shift to Sustainable Development. Noosphere Strategy*. Moscow: Noosfera. *In Russian.*

Ursul, A. D. 2008. Globalization, Safety and Sustainable Development. *Vek Globalizatsii* 1: 17–22. *In Russian.*

Ursul, A. D. 2011. *Global Knowledge and Global Education*. Lecture. Krasnoyarsk: SFU. *In Russian.*

Ursul, A. D. 2012a. Global Dimension of Law. *NB: Voprosy prava i politiki* 5: 90–146. *In Russian.*

Ursul, A. D. 2012b. *Evolutionary Globalistics: Study Guide*. 2nd revised edition. Moscow: MAKS Press. *In Russian.*

Ursul, A. D. 2012c. Globalization of Law and Global Law: Conceptual and Methodological Problems. *Pravo i politika* 8: 1284–1297. *In Russian.*

Ursul, A. D. 2013. The Law of Sustainable Development: Conceptual and Methodological Problems of Establishment. *NB: Voprosy prava i politiki* 6. *In Russian.*

Vasilieva, V. M. 2012. *Step by Step into the World of Global Science*. Moscow: MSU. *In Russian.*

Vernadsky, V. I. 1900. *On Significance of Lomonosov's Work in Mineralogy and Geology*. Moscow: Society of Amateurs of Natural Science, Anthropology and Ethnography Society. *In Russian.*

Vernadsky, V. I. 1911. In Memory of M. V. Lomonosov. *Zaprosy Zhizni* 5: 257–262.

Vernadsky, V. I. 1977. *Speculations of a Natural Scientist: in 2 vols*. Moscow. *In Russian.*

Vernadsky, V. I. 1981. *Selected Works on the History of Science*. Moscow: Nauka. *In Russian.*

Vernadsky, V. I. 1988. *Works on the History of Science in Russia*. Moscow: Nauka. *In Russian*.

Vernadsky, V. I. 1989. *Beginning and Eternity of Life*. Moscow: Nauka. *In Russian.*

Vernadsky, V. I. 1991. *Scientific Thought as a Planetary Phenomenon*. Moscow: Nongovernmental Ecological V. I. Vernadsky Foundation. *In Russian.*

Vernadsky, V. I. 1995. *Social Articles*. Moscow. *In Russian.*

Yanshina, F. T. 1998. Vernadsky on Lomonosov. *Vestnik RAN (Russian Academy of Sciences)* 68(5): 444–451. *In Russian.*