# The Vernadsky Strategy

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As I have stressed repeatedly, there are only three present cases of national cultures which are capable of conceptualizing the initiation of global solutions for such current global problems as the presently accelerating collapse of the world's present financial system. Once again, these are the U.S.A., Russia, and the British monarchy. Given that Olympian tragedy popularly known as the U.S. Bush administration, only some combination of cooperating states of Eurasia which includes Russia and western continental Europe, is presently capable of cultivating the kind of initiative urgently needed today.

*V.I. Vernadsky*

For reasons I shall emphasize here, the figure of biogeochemist V.I. Vernadsky, should serve as a key unifying figure, for the contribution of the science of Russia and Ukraine to the unified development of Eurasia as a whole. This program of Eurasian development, is to be regarded as the central feature of a global economic developmental perspective for both the Americas and Africa. Indeed, under present global conditions, such Eurasian development is indispensable for the survival of not only Africa, but also the nations of the Americas as viable nation-states.

Look at this first from the standpoint of the continuing issue of so-called "geopolitics," and then locate the marvelous implications of the Vernadsky legacy for both science and economy, not only for Eurasia, but for mankind as a whole.

## Geopolitics, Still Today!

The strategic issue within which I situate this discussion, is not, by itself, a new issue. Since approximately 1877, the British monarchy had always centered its geopolitical doctrine on ensuring the fostering of mutually devastating conflicts between Germany and Russia, as the central feature of its grand strategy. All important initiatives for the betterment of humanity, since the U.S. Civil War, have centered upon implicit cooperation of the U.S.A. with key nations of continental Eurasia for the kinds of economic development associated with the policies of Benjamin Franklin, Alexander Hamilton, Friedrich List, and Henry C. Carey.

One should recall, that U.S. President Abraham Lincoln's defeat of the British monarchy's asset, the Confederate conspiracy, and the adoption of the U.S. economic model, by Russia, Bismarck's Germany, Japan, and others, in the aftermath the 1876 Philadelphia Centennial Exhibition, had created the conditions for building transcontinental railway systems, modelled on the U.S. precedent, within the Eurasian continent. This, for reasons I have detailed in earlier locations, was the prompting of the combined geopolitical and naval-development programs of the British monarchy over the period leading into Britain's orchestration of France and Russia for launching World War I against Germany, with support of such London assets as those faithful sons of the treasonous Confederacy, U.S. Presidents Theodore Roosevelt and Woodrow Wilson.

Similarly, at the close of World War II, when Britain had been reduced to the relative status of a second-rate power in the world, Britain, using both traditional Venetian methods, and British agents and agents of influence inside the U.S.A., orchestrated the creation of the nuclear conflict between the U.S. and the Soviet Union. Thus London was enabled to exploit the effects of the missiles-crisis, to bring about the post-missiles-crisis self-destruction of both of London's leading strategic rivals, leading to both the present Anglo-American form of world domination, and the present push of the world at large not only into the greatest financial collapse in history, but also the economic brink of a threatened, planetary new dark age.

Throughout 1861-2001, the central issue-in-fact of world policy, takes the present form of the choice: between an efficient commitment to the cooperative economic development among at least most of the peoples of continental Eurasia; or, world domination by a new form of the old imperial maritime power of Venice's financier oligarchy, an Anglo-American "new Roman Empire," ruled by the fist of a U.S. "dumb giant" deployed, like the former and present U.S. Presidents Bush, as a restive, brutish lackey to the British Empire.

The most comparable period in history, was a period closely studied by the great dramatist William Shakespeare. The menacing situation facing the world today, is most nearly comparable to the history of Europe through the long and ruinous royal reign of the Plantagenets, 1154-1485, from Henry II through Richard III.

This House of Anjou, as confederate of the imperial maritime power of Venice, played a leading part in the repeated ruin of Europe during that entire span. This role of the House of Anjou, and its role in "ultramontane" moves to crush out of existence the efforts, as under the Hohenstaufen, especially Frederick II, and Alfonso Sabio of Spain, to establish sover-

eign nation-states, led inevitably into not only the New Dark Age of Fourteenth-Century Europe, but also such continuing horrors as the "Hundred Years War" and the "Wars of the Roses" within England itself.

This alliance of Venice with the House of Anjou, is to be compared with a similar affliction which struck Europe, in the form of the Habsburg-centered religious wars during the interval 1511-1648, a period sometimes fairly described by modern historians as "a little new dark age" in European history.

The key strategic fact to be recognized by all persons who do not wish to be rightly considered as either mentally ill, ignorant, or stupid, is that the world as whole, including the internal situation of the U.S.A., itself, is faced immediately with an historical crisis, comparable in its threatened implications, to the legacy of the long, imperial reign of the Plantagenets in sundry parts of Europe, at sundry times, and in England throughout that time. With the help of such creatures as Ariel Sharon and the "Clash of Civilizations" and related "Project Democracy" lunacies of Zbigniew Brzezinski's Samuel P. Huntington, the world teeters precariously at the brink of a general outbreak of religious warfare like that experienced by Europe during the 1511-1648 interval.

It is not possible that the United States could survive a continuation of the present policies of the incumbent Bush administration. Either those policies, and any like them, are soon scrapped, for a return to something akin to the Franklin Roosevelt economic-recovery policies, or the economic self-destruction of the U.S.A. is soon inevitable. However, under that condition, a continued Anglo-American world domination of the type set into motion by the Thatcher-Bush policies of 1989-1991, would mean the virtually inevitable collapse of the planet as a whole into a new dark age as serious, or worse than that of Europe's mid-Fourteenth Century.

## The Available Option

For as long as the U.S. Bush Administration continues its present, lunatic policy-trends, only in some circles in the United Kingdom, and in cooperation between President Vladimir Putin's Russia and other states of continental Eurasia, is there any presently active potential for actually initiating the adoption of an effective alternative to the horrible consequences of what a continued Bush drift would mean for the world at large.

In the United Kingdom itself, even among many whose policies are not, shall we say, the best, there is a sense of dread of the implications of the sheer lunacy of the current U.S. administration, and of a U.S. Congress which continues to lie down, like craven opportunists, or even worse, before the Bush Administration's and related demands.

More important is the keystone role of Russia in linking the vital interests of nations of western and central continental Europe to the matching interests of Central, South, Southeast, and East Asia.

To put the point as simply and also as accurately as brevity might desire, the real economy of western and central continental Europe, could not continue to survive without a relatively healthy German economy. Germany's economy, in turn, could not avoid collapse, without substantial renewal of the relative weight of its former role as a technology exporter. None of these and related problems of continental Europe or Eurasia as a whole, could be brought under control, without a new system of credit, based upon the sovereign powers of states, to advance long-term credit for large-scale infrastructure-building and relevant other technological increase of the physical productive powers of labor throughout Eurasia in the large.

The methods for such a revival of the economy of Germany, and of continental Europe at large, are those which Dr. Lautenbach presented for adoption by a 1931 meeting of Germany's Friedrich List Society, a proposal which, had it been implemented, could have prevent Hitler's coming to power, and, thus, World War II as well. These are, essentially, the same principles expressed successfully by U.S. President Franklin Roosevelt. Those same approaches would work today, even under present European and U.S.A. economic and financial conditions, which, combined, are far worse than those underlying the crash of 1929-1931. It would merely require dumping every policy which either the Bush Administration or former Vice-President Al Gore would tolerate, at least, until now.

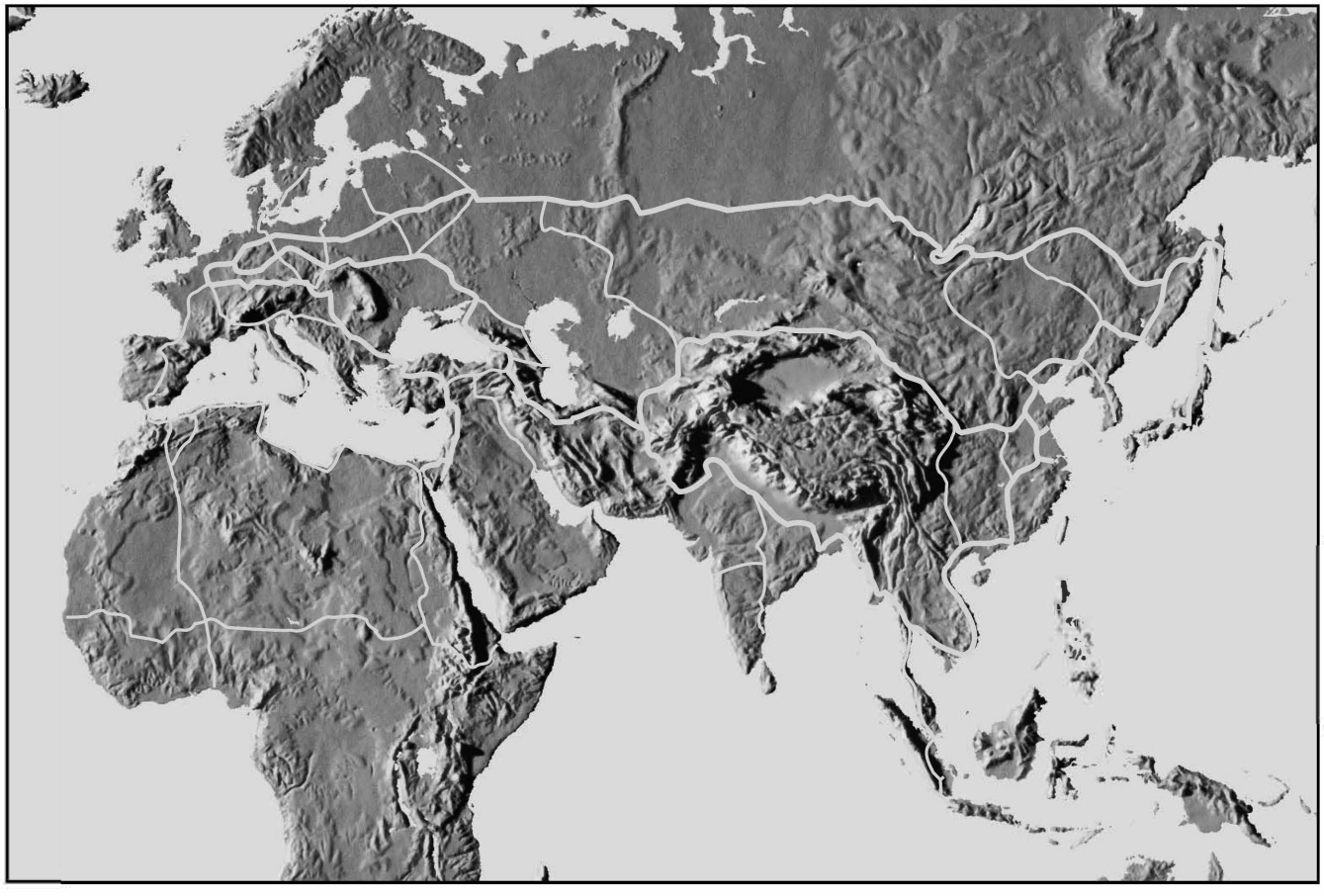
The general framework required to rescue nations such as those of continental Europe, from the otherwise inevitable, presently careening disaster, must be defined in terms of a system of fixed exchange-rates, capital controls, exchange controls, currency controls, and protectionist methods of price and trade agreements among the partner-nations. This means, of course, the abandonment of the recent and ruinous fads of "free trade," "deregulation," and "globalization," for a return to the protectionist, or so-called "Hamiltonian" model of the sovereign nation-state. It means the large-scale reorganization of the aggregately never-payable present mass of world-wide financial obligations, a reorganization conducted under rules corresponding to the Franklin Roosevelt Administration's notion of "Chapter 11" bankruptcy reorganization.

As if by gut-instinct, there is in Germany and other parts of continental Europe, a tendency in that direction, if not yet a willingness to go to the "extremes" which actually introducing a successful such economic-recovery for Europe would require. If Europe wishes to survive, it must go all the way, according to the conclusions which the situation demands of it.

However, as much as France pretends to exert true sovereignty on some selected occasions, the combined result of two world wars, the 1962 missiles crisis, and so on, is that no nation of western or central continental Europe has a present instinct for truly sovereign national-policy initiatives which might be contrary to the English-speaking powers. They think

FIGURE 1

**Topographical Map of Eurasia, with Some Main Development Corridors of the Future**



*The future cooperation of Eurasian nations in building "land-bridges" of modern transport and infrastructure, including across Africa, is the marker of what is called, in Vernadsky's work, the action of the noösphere.*

within the self-imposed bounds of what they suspect they are permitted to think by their Anglo-American overlords. Their hearts may be in the right place, but they keep their fists in their pockets.

Enter Russia. The fact that western Europe can not survive the present trends, except through relevant long-term cooperation pivotted upon a willing role by President Putin's Russia, and the fact that Russia, by its deeply embedded national-cultural instinct, is capable of thinking in terms of global solutions, gives to western continental Europe much, if not all of that degree of encouragement it otherwise lacks to proceed in service of its vital sovereign interests in these matters.

Similarly, as for western and central Europe, Russia is also crucial for cooperation among the states of East, Central, and South Asia, most emphatically. A group of nations, brought together through aid of triangular cooperation among Russia, China, and India, and thus bringing in most of the states of Asia, presents us with a reasonable prospect of well-grounded, long-term cooperation, where such cooperation were otherwise virtually impossible to achieve. Under the presently onrushing economic-strategic conditions, in which the Anglo-American financier power largely evaporates, new options are likely to be put on the table, even successfully.

The possibilities of long-term Eurasian continental cooperation (including Japan, of course),[1] thus provide the keystone on which the possibility of a global economic recovery depends. Without that keystone, the situation of already ruined Africa is hopeless beyond description, and the situation of the nations recently assembled at Quebec City, hopeless as well.

I have emphasized, on this subject, in locations published earlier, that the development of the basic economic infrastructure of the territories of central and north Asia, including the tundra regions, is indispensable for the success of the kind of long-term global economic development I have proposed.

1. One, or two railway lines, from Siberia, Korea, or both, linking mainland Eurasia to the islands of Japan, would clarify that point.

As I have also stressed in such locations, to grasp what that development implies for practice, we must look at the required development of basic economic infrastructure through the eyes of the great biogeochemist V.I. Vernadsky.

As I have emphasized in such locations, we must recognize that what we call basic economic infrastructure, is an improvement in the biosphere beyond the capacity of the biosphere to develop and defend itself without human cognitive intervention. We must see the biosphere so improved by man, as representing what Vernadsky termed the "natural products" of human cognition produced as the qualitative improvements of the biosphere needed to develop the biosphere into the still qualitatively higher form, of a noösphere.

We must never think of development of basic economic infrastructure as a destructive intrusion upon the biosphere, but rather as a necessary improvement of the quality of the biosphere as a biosphere, and also a form of improvement which raises the biosphere to the higher level of being an integral part of the noösphere. Indeed, that rule, is not merely a defense of the urgency of developing and maintaining the biosphere through basic economic infrastructure, but, also, represents the rule by which we must govern ourselves in changing the biosphere through infrastructural development.

Although there is a tendency to limit the current proposals for infrastructural development to "A New Silk Road," such a transportation link, by itself, will not meet the requirements for a general and sustainable upsurge in the economic development of Eurasia. What is required, rather than merely a "New Silk Road," is a network of corridors of combined transportation, power generation and distribution, large-scale water management, and related changes, all along pathways of development of up to 100 kilometers width.

In that case, not only does economic growth along the transport route reduce the effective net cost of trans-Eurasian goods transport, to levels far below that of sea-borne transport. By such methods, what are presently thinly populated regions of central and north Asia are made more fruitful, and populous, but even what are presently, functionally desert areas, emerge as zones of economic development. Under those conditions, these regions of Asia become, because of their relationship to other, densely inhabited parts of Asia, the world's greatest, richest frontiers for the immediate future's economic growth of the planet as a whole.

When those opportunities are taken together with the natural resources of the area in which this development of infrastructure is to occur, Eurasian cooperation, pivotted on this perspective, becomes the great opportunity for Eurasia as a whole, and the economic driver needed for the development of Africa and the revitalization of the states of the Americas participating as partners of this venture.

The peculiar nature of the challenges this presents for broadly based development of basic economic infrastructure, brings the figure of Vernadsky to the fore, as a central scientific figure of reference for this Eurasia-centered cooperation as a whole.

## Where There Is Life, There Is Hope

At this point, focus attention upon two of the leading points which biogeochemist Vernadsky made on the way in which the Earth as a whole is organized naturally.

He emphasized the anomalous, but unavoidable evidence, that living processes produce measurable physical changes in non-living processes, changes which non-living processes themselves do not produce. He defined this as the biosphere.

He also emphasized, similarly, that the intervention of the human creative-scientific powers into the biosphere, produces measurable forms of physical improvements in the biosphere, which are not generated without such human intervention. He defined our planet, in which living processes transform non-living ones, and cognitive processes transform living processes, as a *noösphere*.

He emphasized the fact, that those experimentally distinguishable effects of living processes, which are not otherwise produced by comparable non-living ones, are *natural products* of living processes' action upon the non-living. Similarly, the effects which only human cognitive action produces as improvements of the biosphere, are experimentally definable as *natural products* of human cognition.

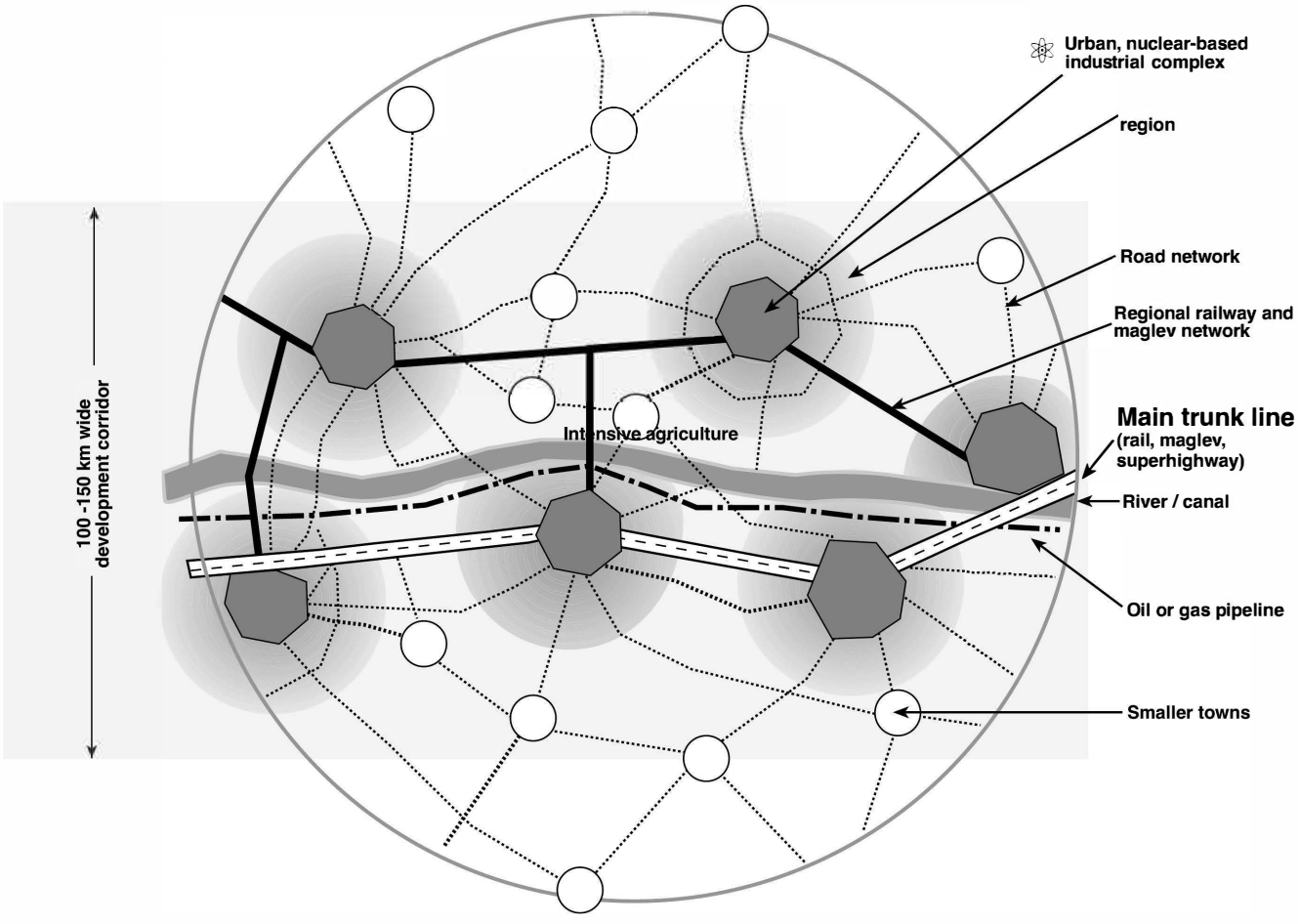
With but one most notable, twofold omission, Vernadsky's organization of his own and others' experimental discoveries of anomalies and principles, into the form of a concept of the noösphere, represented a necessary revolution in the world's way of thinking about scientific knowledge in general. Despite the referenced omission, to which I shall turn in due course here, the relevance of Vernadsky's work to Eurasian development as a whole, has the following, relatively obvious, expressions.

First, for reasons toward which I have pointed already, the depth and scope of the development of basic economic infrastructure and its included development corridors, is a challenge to scientific and well as ordinary economic notions of mastery of the biosphere, as itself part of a noösphere, beyond anything taken previously. Vernadsky's revolutionary conception of the biosphere represents an important change, in depth, in the way policy-makers should think about both the biosphere and basic economic infrastructure as such.

Second, in developing the basic economic infrastructure of central and north Asia on the scale indicated, we are staking much, for the coming quarter-century and longer, on the wisdom of the choices before us. We must place a corresponding emphasis on accelerating fundamental and related scientific development along relevant new lines of investigation, already implicit in Vernadsky's work.

Third, among the most important implications of Vernadsky's work in this realm, is the way in which it forces us to pay attention to known, and previously unknown features of the physical principles which distinguish living processes from non-living ones. It is but one of the subsumed implications of this, that the world is confronted with the explosion of an emerging crisis in the control of infectious and

FIGURE 2
**Graphic Representation of a 'Development Corridor'**

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related diseases of human, animal, and plant life, a challenge which impels us to seek deeper approaches to such matters, in addition to existing methods now threatening to be overwhelmed by the problem.

Those three reasons would be sufficient motive for placing the work of Vernadsky in a place of high honor in the work of Eurasian development. Two considerations must be added to those just identified.

First, perhaps more than any other figure of the past century, Vernadsky confronted the scientific world with the deeper implication of the work of predecessors such as France's Louis Pasteur. Second, this had the included result of fostering related scientific developments within Russia and Ukraine, which have remained, during recent decades, better pursued by specialists there, in some respects, than in the world outside. It is one of the areas in which leading specialists from there still have, despite the ruinous effects of the recent decades' economic problems there, a relatively unique and notable contribution to the scientific practice and progress of the world at large.

For these five and related reasons, the image of the continuing challenge to science and technology represented, most emphatically, and more comprehensively, by the work of Vernadsky, serves us now as perhaps the most appropriate, personalized image of the benefits, for all mankind, of pursuing the core development of the new Eurasia cooperation,

the development of its basic economic infrastructure, as the enduring gift of this cooperation to all future mankind.

Call it, therefore, "The Vernadsky Syndrome."

## The Matter of Riemann

The nature of the argument on the noösphere, and referenced evidence, by Vernadsky, is so profound, in its implications for scientific thinking as a whole, that, as in any great scientific breakthrough in past history, a great discoverer, like Johannes Kepler, for example, bequeaths more questions to his successor, than completed answers. Thus, Vernadsky's work requires us today to take into account the relevance of those discoveries by Bernhard Riemann, without which much of the discovery which Vernadsky presented as the fruit of his own and others' work, could not be presented in an adequately integrated form. Similarly, without situating the notion of a noösphere within the context of my field, the science of physical economy, the practical application of the notion of a noösphere to national economy is not feasible.

This, because my own original discoveries in physical economy, led me to discover the importance of Riemann's work as a way of integrating those discoveries, my own reliance upon the work of Vernadsky grew by more or less discrete increments over the course of the recent four decades.

The relevant conceptual problem to be considered, has the following principal features.

Crucial is the notion, that there exists a universal physical principle of life as such, a principle distinct from anything found in non-living processes except through the intervention of living processes. This conception has a long history within the bounds of experimental mathematical physics itself.

The first crucial example is that summarized by Plato in his ***Timaeus*** dialogue, the notion, premised upon the anomalous implications of the discovery of the principle of the five Platonic solids, that there exists a universal, measurable principle of life, not found in non-living processes.

Notably, Luca Pacioli and Leonardo da Vinci, two followers of the Cardinal Nicholas of Cusa, who, among other missions, founded modern experimental physical science, emphasized Plato's evidence; so did avowed follower of Cusa, Pacioli, and Leonardo, Johannes Kepler. Kepler based all his principled discoveries in physical science, including his original discovery of universal gravitation, upon those principles.

However, with the intervention of Paolo Sarpi's launching of empiricism, official modern science has been divided between the Classical science of Plato, Cusa, Pacioli, Leonardo, Gilbert, Kepler, Huyghens, Leibniz, Gauss, Monge, Gauss, Alexander von Humboldt, Riemann, et al., on the one side, and the empiricists and Cartesians on the other. Notably, all of the empiricists, especially those radical empiricists known as the logical positivists, insist that life is, in principle, a product of mechanical principles. The latter, extremist view, is typified by the reductionist ivory-tower doctrines of those who insist that life is merely a product of molecular biology.

Thus, the influence of the empiricist school and its progeny, has held back greatly what would have been accomplished had the radical reductionist method not enjoyed relative hegemony among relatively well-funded branches of scientific practice. Largely on this account, the kind of evidence referenced by Vernadsky, respecting a principle of life as such, lies in scattered heaps on the horizon. We possess a sizeable collection of experimentally validated anomalies, reflecting the fact that life is a distinct universal physical principle separate from non-living processes; but, we lack the sort of well-organized team-work needed, to bring a large assortment of proven, relevant anomalies, into the form needed to approach the condition in which we are, at a later point, able to define a corresponding universal principle of life as such.

Vernadsky was correct, in mentioning the proposal he had received, that the matter of the connections among various types of anomalies should be approached, conceptually, from the standpoint of Riemann's work on the subject of multiply-connected, hypergeometric manifolds. This is precisely the situation which confronts us in my specialty, the science of physical economy, in which a principle of cognition must be adduced from its effective expression in different media, in which the fact that the connection is multiply-connected in the Riemannian sense, is crucial.

The work of specialists in relevant types of anomalous biogeochemical effects, must be fostered, and teams of gifted young students and professionals employed and equipped, so that we might fill up the numerous experimental gaps in our studies of relevant anomalies. Those with backgrounds in this work from Russia and Ukraine, are of notable importance. Properly resituated within the domain of the application of the science of physical economy to the Eurasia infrastructure mission, the rebuilding of scientific capabilities in these implications of biogeochemistry can serve also as an aid in rebuilding the lately depleted general scientific capabilities of both Russia and Ukraine in particular.

Finally, effective forms of fundamental scientific work are highly personalized endeavors. The mental imprint of the leading scientific worker, is an integral part of the competence that leading figure fosters in the development of his students and associates. Science is as cooperative as Archimedes shrieking "Eureka!" to all hearers; but it is, at the same time, highly personal and individual. It is as a student seeks to relive the validated act, made by a predecessor, of an original discovery of universal physical principle, that the student relives in his or her own mind, that moment of discovery in the mind of the predecessor. Thus, the greatest discoverers in history, even when they are presently long deceased, continue to have an indispensable kind of personal impact on the most intimate thinking processes of a student, or leading working scientist of today.

Therefore, let the actual thinking process of the great Vernadsky be replicated in the minds of the professionals and gifted students of today. To bring that desired effect about, one should begin, by remembering his name.