

the foremost branches of science, and of methodology for the compilation of scientific knowledge.

Jason Ross presented by [video](#) his ongoing research, titled, “Vernadskian Time: Time for Humanity,” and Black presented a paper titled, “V.I. Vernadsky

and L.H. LaRouche: The Distinct Power of Noesis and Its Metric.” Ross has published his research [here](#); in the magazine, *Leonore*, Vol. 2, No. 1, 2022, pp. 28–44; and [here](#) in *Executive Intelligence Review*, Vol. 49, No. 27, July 15, 2022, pp. 30–32.

Immediately following is Richard Black’s live presentation.

Vladimir Vernadsky and Lyndon LaRouche: The Distinct Power of Noesis and Its Metric

by Richard A. Black

This is the edited address of Richard A. Black, delivered online, at Lomonosov Moscow State University, April 18, 2023, to the conference titled, “Globalistics—2023: Sustainable Development in the Context of Global Processes.” His address was delivered to the panel on “The Foundations of the Philosophy of V.I. Vernadsky and the Realities of the 21st Century.” Black is the Schiller Institute Representative at the UN in New York City.

Video of the presentation is available [here](#).

Abstract

V.I. Vernadsky elucidates the discontinuous separation between the abiotic domain and the living substance, and between the living substance and the noetic domain. His investigation of the Noösphere, itself, includes analysis of both creative science and of artistic creation: Vernadsky states, “The mastery of this cognitive apparatus, little reflected by logic, is a task for the future.” L.H. LaRouche, later, proposes a metric for evaluating Man’s new fundamental creative discoveries within the Noösphere, when they occur.

Introduction

It is auspicious that moves have recently been taken by both China and Russia toward an increasing emphasis on fundamental science research into the principles governing both the physical, as well as the noetic, universe. Provocatively, the recent years’ close policy integration “at the top” between China and Russia has increased the durable sovereignty of each. China’s President Xi Jinping has recently emphasized that “innovation and creativity must be encouraged to accel-

erate self-reliance in science and technology,” while President [Vladimir] Putin very recently proposed: “Innovative technology invariably relies on existing fundamental research. Here, just like in culture ... we must give researchers greater freedom for creativity.... Fundamental science makes its own rules....”

Thus, both leaders have called for new policies which foster “creativity.” So, what is uniquely human creativity, and what are “its own rules”?

Each of these national leaders, speaking in layman’s terms, is focusing on the challenge to accelerate the development of the Noösphere. In my brief remarks today, I will focus on V.I. Vernadsky’s distinction between the phase space of “living matter” and that of the Noösphere, and discuss American scientist L.H. LaRouche’s contributions to (1) defining the uniquely human power of scientific discovery as the standard for noesis, and (2) defining a true metric in the domain of physical economy—which LaRouche named “Potential Relative Population Density”—as the measurement of the validity, or not, of those new scientific discoveries.

Vernadsky defines three distinct phase spaces: the abiotic, living substance, and the Noösphere—each defined by its own distinct principles. As Vernadsky writes, there is “an impassable, sharp, materially energetical boundary between the living and inert substance.” Abiogenesis is not known to exist: “all the living is derived from the living.”

Thus, the principles of all three phase spaces have existed in the universe “from the beginning.” With the appearance of living matter, with its characteristic “biogenic migration of atoms,” living matter becomes

geologically more powerful than the abiotic domain. With the appearance of noesis in human civilization, the self-development of the Biosphere transforms into the Noösphere, with Man exerting the greatest geological force. But, what are the distinct characteristics of noesis? How do we know its existence?

Noesis: Transcending the Bounds of Logic

In his 1938 book, *Scientific Thought as a Planetary Phenomenon*, Vernadsky begins to describe the nature of human thought as expressed in mathematics, in the physical sciences, and in the fine arts. He writes:

Logic occupies a special position, in the most intimate manner connected to human thought, embracing equally all of the sciences: both the humanities, on the one hand, and the mathematical sciences, on the other....

But the mechanism of the understanding, tightly linked to speech and concepts—the logical structure of which is complex, as we shall see ... does not encompass the totality of Man’s knowledge of reality.

We see and we know, but we know in an everyday, not in a scientific way, that creative scientific thought transcends the bounds of logic.... The individual, in his scientific accomplishments, bases himself on phenomena, which are not encompassed by logic.... Intuition, inspiration, the basis of the greatest scientific discoveries, proceeding and operating further in a strictly logical manner—is not brought forth by either scientific or logical thought, nor is it con-



Einstein’s friend, Max Planck: “Science cannot solve the ultimate mystery of nature.... Music and art are, to an extent, also attempts to solve, or at least express that mystery.”

nected to words or concepts in its genesis....

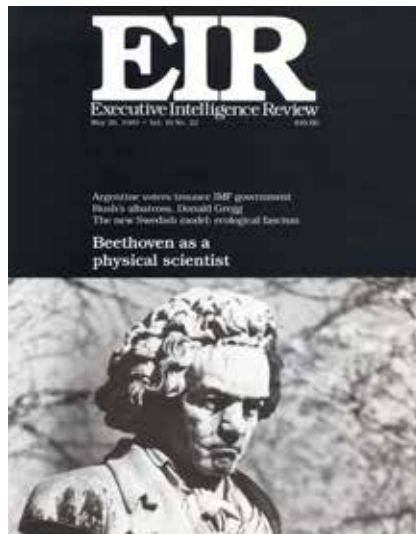
Thus, noesis transcends logic and deduction; the greatest scientific discoveries have their genesis in intuition, in inspiration. As if “from above and outside” the problem being confronted.

Vernadsky’s contemporary Albert Einstein, reflecting on the scientific method of his friend, Max Planck, the physicist and accomplished pianist, once wrote:

The state of mind which furnished the driving power here resembles that of the devotee or the lover. The long-sustained effort is not inspired by any set plan or purpose. Its inspiration arises from a hunger of the soul.

Vernadsky points to an identity of the nature of discovery in the realm of the physical sciences and that of fine arts. Far from the reductionists’ view that the process of discovery is derived from deduction, induction, or any form of logic lattice, rather, discovery represents “a leap,” which overthrows those axioms now exposed as false, which had underlain previous “authoritative” knowledge. He writes:

We only see that a large realm of phenomena, which possesses a rigorously lawful, most intrinsic, relationship to the social order, and ultimately, to the biosphere—even more to the Noösphere—namely, *the world of artistic creation, is not reducible in any meaningful way in any of its parts*; for example, in music or architecture, to verbal representation; and yet [artistic creation] exerts a great influence on the scientific analysis of reality. *The mastery of this cognitive apparatus, little re-*



Ludwig van Beethoven on the cover of EIR, May 26, 1989.

flected by logic, is a task for the future. [Emphasis added.]

Among the examples of such true noetic action: Max Planck's discovery of the quantum; Albert Einstein's replacing the distinct conceptions of energy and matter, space and time, with the principle of *physical space-time*; and the 1782 Mozart and Haydn discovery in musical compositional method—later, further developed by Beethoven—known to musicians as the principle of *Motivführung*, or, *motivic thorough-composition*. A bust of the great Ludwig van Beethoven graces the title page of a paper by LaRouche, “Beethoven as a Physical Scientist.”

The Cognitive Processes of a Discovery of Principle

It is fashionable these days, in the West, to “soften” the rigor of classical education, and to blur Vernadsky's absolute distinction between Man and animal life; in fact, Vernadsky was no zero-growth environmentalist, as some have claimed! Citing the 1918–1919 work of Nicolai [German physiologist Georg Friedrich Nicolai—ed.], and considering the revolutionary new potential of what Vernadsky called “the energy connected to the atomic nucleus,” Vernadsky projected the potential human population of the planet to be over 3 trillion individuals! One need only look at the vast empty expanses today, for example, of Russia, of Canada and of Africa to project what universally available, abundant, dense energy could create!

But, such transformation requires abundant scientific discoveries. In a bold innovation, it is these discoveries of principle which LaRouche specifies as the sole defining characteristic of noesis. In a 2007 paper, “SDI Revisited: In Defense of Strategy,” LaRouche outlines the character of noesis:

The cognitive power of the human mind, is the only means by which man is enabled to cause the universe to submit increasingly to the human will. Thus, there, in cognition, lies the highest known expression of lawfulness. For reasons ably identified by Vernadsky, the universe of living creatures is, as some notable ancient Greeks insisted, *hylozoic*. It is a universe in which the principle of life reigns over non-living processes, rather than being an epiphenom-

enon of non-living processes. The evidence on these accounts, is elementary; only self-blinding hysteria, such as empiricism, denies such evidence.

In this configuration, what we are accustomed to regard as physical science, corresponds to those forms of universal action corresponding to validatable universal physical principles: man's mastery over nature, as implicitly measurable in demographic characteristics of populations, *per capita* and per square kilometer of the Earth's surface. However, in order to share and apply this knowledge, we must bring the individual cognitive processes of the members of society to that degree of development of socialized cognitive relations, that the cognitive processes of discovery of principle are themselves efficiently engaged as the primary form of social relations. This condition can be realized only through those modes of cognitive relations associated with Classical forms of artistic composition, and with those studies of the principles of history and statecraft which are, in fact, the natural extensions of valid forms of Classical artistic composition and performance.

Here, LaRouche is taking up what Vernadsky had posed as “the task of the future”: achieving a greater insight into the nature of artistic creation as a distinct form of noesis.

Figure 1 shows LaRouche's flow chart of the noetic process of moving from the discovery of valid principles to their realization in the technology of new machine tools, which, in turn, transform the process of production, resulting in both increased living standards and in the cognitive level of a society.

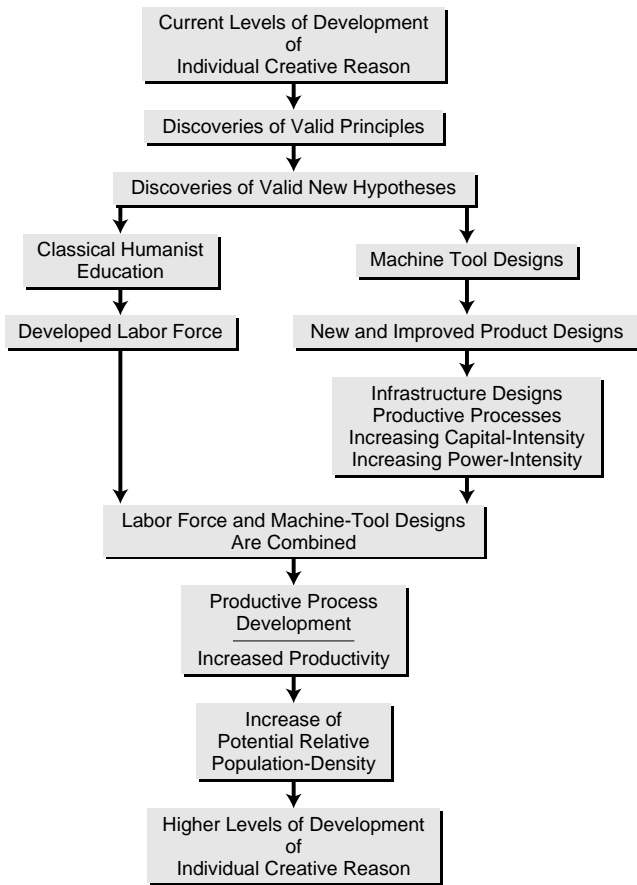
Thus, in defining the activity of the Noösphere, LaRouche makes three connected points:

1. Only scientific discoveries of principle represent the standard of noesis,
2. Education in society is best organized as pedagogy in the nature of discovery itself, and
3. Classical modes of artistic composition and their assimilation by the population are an essential element for human progress.

This approach dissolves today's prevalent, crippling dichotomy in much of academia in the West, between *Naturwissenschaft* and *Geisteswissenschaft*—

FIGURE 1

How the Machine-Tool Principle Is Situated



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between the physical sciences and the humanities.

A Metric of Noetic Activity

The merit, or lack of merit, of a posited new discovery of principle, as well as of the new technologies derived from it, can be measured in the domain of physical economy: Do these new principles and technologies augment or depress the rate of increase of the population density which can be maintained on a given square kilometer of land? How do they affect the potential rate of future discovery? LaRouche’s metric of potential relative population density—the capacity for rising rates of increase of population per square kilometer, in

tandem with rising energy use *per capita*—indicates either the happy progress, or the riotous collapse of a national economy.

In 1994, the renowned scientist Dr. Pobisk Kuznetsov—among whose many accomplishments was the development of life-support systems for the Soviet manned space program—published his proposal in the Moscow journal, *Rossiya 2010*, for the introduction of a new unit of account in physical economy, “the larouche.” Dr. Kuznetsov and LaRouche maintained an intense scientific dialogue throughout the 1990s. Dr. Kuznetsov wrote, “Let us introduce the physical magnitude of a ‘larouche,’ designated ‘La,’ which gives the number of persons who can be fed from 1 square kilometer, or 100 hectares, during one year.” Among the many areas of Dr. Kuznetsov’s work was the study of the emergence of living matter, and the necessity of the production of “creative new ideas” as driving “both ... the increase in material well-being, and an increase in the intellectual power of the human species.”

Vernadsky Forecasts the Future

V.I. Vernadsky elaborated the immense geological force of truthful ideas—ideas of no weight, no physical form, no smell, unseen. His fearless and creative mind and goodness is the gold standard for young scientists today. I close with a short excerpt from his 1938 “Problems of Biogeochemistry II: On



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Lyndon LaRouche (right) in dialogue with Dr. Pobisk Georgievich Kuznetsov (center) and Dr. Revoli Mikhailovich Suslov on his principles of physical economy at the Russian Academy of Sciences in Moscow, 1994.

the Fundamental Material-Energetic Distinction Between Living and Nonliving Natural Bodies of the Biosphere”:

We are living in a brand new, bright geological epoch. Man, through his labor—and his conscious relationship to life—is transforming the envelope of the Earth—the geological region of life, the Biosphere. Man is shifting it into a new geological state: Through his labor and his consciousness, the biosphere is in a process of transition to the Noösphere. Man is creating new biogeochemical processes, which never existed before.... The face of the Earth is changing profoundly. The stage of the Noösphere is being created. Within the Earth’s Biosphere, an intense blossoming is in process, the further history of which will be grandiose, it seems to us.

In this geological process—which is fundamentally biogeochemical—a single individual unit, out of the totality of humanity—a great personality, whether a scientist, an inventor, or a statesman—can be of fundamen-

tal, decisive, directing importance, and can manifest himself as a geological force.

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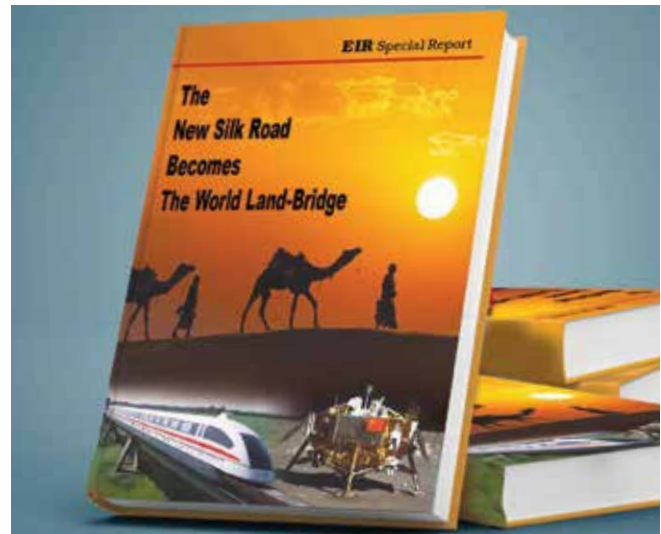
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