

## Let us unify economics and morality in Russia, Ukraine

by Prof. Taras V. Muranivsky

*Professor Muranivsky is the rector of the Ukrainian University in Moscow, and is the scientific editor of the Russian edition of Lyndon LaRouche's textbook So You Wish to Learn All About Economics? He delivered this presentation, entitled "Some Ideas and Concepts of Physical Economy in the Works of 19th- and 20th-Century Russian and Ukrainian Scientists," in February to a seminar of Russian and Ukrainian representatives in Kiedrich, Germany. It has been translated from the Russian by EIR, and subheads have been added.*

Lyndon H. LaRouche, in his book *The Science of Christian Economy* (1991), wrote that the essence of economic science is reflected in two conceptions: orientation toward scientific and technological progress, and the recognition that creativity is a sovereign process of an individual personality (p. 229).

In another book, *So, You Wish to Learn All About Economics?* (1984), which we were able to translate into Russian last year and issue in a large edition in Moscow, LaRouche poses the question even more categorically: "Is continued technological progress indispensable for continued human existence, as well as simply advantageous?" (p. 28). In answering this question, the author stresses that the entire economic policy of a state ought to be oriented toward continuous technological growth and efficient utilization and economy of energy, and not toward financial games.

The idea of continuous scientific and technological progress occupies a central place in the new concept in economic science, developed by LaRouche, which he calls physical economy. Its heart is the analysis of economic processes as inseparably connected with technological development. LaRouche weaves into the cloth of economic analysis such

categories as work, energy, and power (in the sense that they have in physics).

The basis of physical economy is not monetarism (the principle that money governs the economy), but cameralism (the principle, according to which economic science analyzes real economic processes and their optimal organization).

LaRouche considers Gottfried Leibniz the founder of this new tendency in economic science. Based on the methods of investigation employed by Leibniz for heat-powered machines, he formulated the principles and methods of physical economy, whose subject matter is the functional dependency between the perfection of productive processes (improvement of equipment and production technology) and the growth of the productive power of operatives in production.

The concept of energy flux density is an important indicator used by LaRouche. Of greatest interest is his conclusion, based on calculations, concerning the interrelationships among energy flux density, expenditure of energy, and work performed. It turns out that, using an energy flow of higher density, but comprising only a portion of the total power supplied to the mechanism, a greater volume of work can be performed, than by using the entire energy flow at a relatively lower energy flux density.

LaRouche generalizes this conclusion to the economy as a whole, and considers it to be one of the characteristics of economic science. He shows that the idea of flux density has been used for a long time in agriculture, where crop productivity is measured by the yield per hectare or per worker employed. It is not difficult to see, that such indicators are comparable with the technological characteristic of the flux density of energy and its power.

LaRouche develops the principles of physical economy in the broad context of the development of scientific thought,

grounding his arguments not only in philosophy and economic science, but also in mathematics, physics, astronomy, chemistry, philology, and art. The source lines lead to Plato, Nicolaus of Cusa, Leonardo da Vinci, Leibniz, Alexander Hamilton, Riemann, Gauss, Cantor, and others.

### **A parallel tradition: Podolinsky**

The ideas of physical economy are also to be found in the works of Russian and Ukrainian scientists. Studying and making use of them will make it possible to find new directions for the development and practical application of the principles of physical economy.

One genuine scientific innovator in the investigation of economic and social problems, and their harmonious unity with energy and technological processes, was the Ukrainian economist, sociologist, and naturalist Sergei Andreyevich Podolinsky (1850-91). His most important work in this field was the monograph, "Human Labor and Its Relationship to the Distribution of Energy" (1880).

Like LaRouche, Podolinsky analyzes economic processes in their inseparable connection with the development of energy systems (both natural ones and those involving technology). In particular, he stresses: "The productivity of human labor is significantly increased by the use of that labor for transforming lower kinds of energy into higher; for example, by the raising of working cattle, the construction of machines, and so forth" (p. 81).

When Marxist ideology reigned in the former U.S.S.R., the work of Podolinsky was consciously blacked out for a long time, despite the fact that Engels called the author's ideas "a real discovery of his." But this evaluation applied only to agriculture. Podolinsky showed that the farmer's expenditures of energy on plowing, planting, and gathering the harvest were lower than the reserve of energy which (under influence of sunlight) was accumulated in the harvest itself.

If Engels or some other Marxist had accepted the generalization of this rule to production as a whole, they would have had to accept the physical nature of "surplus product," discovered by Podolinsky. But that would have meant recognition that the Marxist treatment of "surplus value" was in error, whereas Lenin called it "the cornerstone" of Marx's teaching. (There is some evidence, that Marx recognized Podolinsky's views.)

### **The amplification of power**

The return of Podolinsky to science is connected with the name of our contemporary, Candidate of Chemical Sciences Pobisk Georgiyevich Kuznetsov. On his initiative in 1991, Podolinsky's monograph was published for the first time since 1880.

He considers the discovery of Podolinsky to be a positive answer to a question which until recently was answered only in the negative. In the opinion of Kuznetsov, Podolinsky proved that there exists a class of processes in nature, charac-

terized by an efficiency factor greater than 100%. He considers one such process, in particular, to be human labor, which can be viewed as a power amplifier. The question, however, is what to take as 100%.

In order for such amplification to be possible in nature, it must be possible to "catch" a flow of energy. One of the simplest examples of "catching" a flow of energy in nature is photosynthesis, which provides for plant growth.

All man-made machines and mechanisms work on the principle of storing and amplifying power. People would not waste energy making sails, if it did not economize on the physical source of power (the force of the rower), replacing it with the energy flow (power) from the wind. A water mill economizes labor by utilizing the energy flow (power) of falling water, etc.

We have grounds to think that human activity, directed at comprehending the natural forces and exploiting them with the aid of technical means and technological processes invented by man, is lawful and is governed by the law of organization of energy flows ("Podolinsky's law"). The utilization of natural energy flows leads to economy of the muscle force of human labor, at the same time as it raises its productivity. Control of energy flows is directed toward raising their density or amplifying their power.

The concept of "power amplification" of energy flows was not new for physics at the end of the 19th century: The law of conservation of energy flow or conservation of power (although it was still not included in physics textbooks) had been observed by scientists in the past.

The French mathematician and mechanical physicist Joseph LaGrange (1736-1813) formulated the law of conservation of power already in 1788. This law follows from the law of conservation of energy, which Podolinsky considers to have been established by the Dutch scientist Christiaan Huygens (1629-95). From the ideas of Huygens, the German philosopher and mathematician Gottfried Leibniz (1646-1716) developed the principle of conservation of vital force.

LaGrange observed the law of conservation of power in the product of force multiplied by velocity. This is easy to see in a mechanism like a pulley block, whose action is based on the equality of two products: the force of the worker's traction times the velocity of displacement of the rope, on the one hand, and on the other, the weight of the object being lifted (much bigger) times the velocity of its rise (which decreases by a factor equal to the factor by which the weight of the object exceeds the effort of the worker).

Theoretical generalizations connected with processes of the control of energy flows include the law of economy of labor (Lyndon H. LaRouche), the law of economy of time (P.G. Kuznetsov), the law of displacement of the boundaries of the division of labor (T.V. Muranivsky), and others. These and other questions deserve to be considered separately.

The search for ways to organize energy flows is connected with the solution of the problem of an organic comprehen-

sion of the essence of life as a form of motion. One important side of this process is the study of the lawfulness of heat radiation in nature, and of the energy, information, and economic processes related to this. In this connection, the attention of many specialists has focused on the second law of thermodynamics.

Podolinsky was very cautious in his attitude to the law of dissipation of energy (entropy). At the very beginning of his monograph, he admits the law, but only for “as long as no new objections arise” (p.15). But further on in his text, Podolinsky himself raises a very substantial objection. Having described the mechanism of the process by which plants increase the reserves of convertible energy on the Earth’s surface, he concludes: “On Earth, plants are the worst enemies of the worldwide dissipation of energy” (p.30). Then, while examining the process of labor, Podolinsky comes to yet another objection against the universal character of the second law of thermodynamics. He considers that labor has “as its invariable result, the increase of converted energy or the preservation from dissipation of energy, which upon being utilized will yield an increase in the reserve of energy” (p.37).

Podolinsky considers the malthusian theory of arbitrary limitation of the quantity of the population to be the equivalent of the dissipation of energy. He subjected this theory to very convincing criticism. Basing his argument on concrete factual material about the economic development of England, France, and other countries, Podolinsky shows that “given a rational application of labor, productivity increases more rapidly than the population” (p. 77). This idea has acquired a constructive form in LaRouche’s concept of relative population density. It is noteworthy, that this concept was developed independently from the views of Podolinsky, about which LaRouche likely did not know.

### **Twentieth-century advocates**

The ideas and views of Podolinsky were advocated and continued by such scientists as N.A. Umov, K.A. Timiryazev, and V.I. Vernadsky. At the beginning of the 20th century, they were all professors at Moscow University, and they all resigned together in 1911, as a protest against oppression of the students. Each of them made a contribution to the development of Podolinsky’s ideas.

Nikolai Alekseyevich Umov (1846-1915) was the first Russian theoretical physicist. In 1901, he proposed to introduce into physics a law contrary to the second law of thermodynamics, which would encompass the specific peculiarities of all forms of life. Umov was the first to introduce the notion of energy flux density, which LaRouche so effectively applies and develops in physical economy. He also formulated the equation of motion of energy.

Klimenti Arkadyevich Timiryazev (1843-1920) was a Russian natural scientist, and one of the founders of a school of plant physiologists. He discovered the energy laws of photosynthesis as a process of utilizing light for the creation

of organic matter in plants. At a lecture in London in 1903, Timiryazev presented a concept, contrary to the second law of thermodynamics.

Vladimir Ivanovich Vernadsky (1863-1945) was a Ukrainian and Russian scientist, who founded geochemistry, biogeochemistry, radiogeology, and the theory of the noosphere. He was the founder and first president of the Ukrainian Academy of Sciences (1919).

Vernadsky’s teaching on the biosphere views all forms of life in their organic unity and interconnection. For him, “living matter” is not a body, but a process. Vernadsky studied the natural mechanism of accumulation of free energy in the biosphere, while his teaching on the noosphere discovered the active functioning of energy concentrated under the influence of human labor activity.

It is important to note, that the notion of the noosphere, which, according to Vernadsky, “flows from biogeochemical ideas,” is completely coherent with the notion of “natural law” in the economic theory and economic policy of LaRouche. According to Leibniz’s interpretation, which was subsequently adopted and further developed by LaRouche, natural law defines the basic principles of the continuous development of mankind. These principles address the moral and intellectual qualities of people—both of the individual, and of society—that are necessary for human development. They also address the physical-economic conditions for sustained reproduction on the basis of scientific and technological progress.

### **Entropy not a governing principle**

In summarizing this survey of Podolinsky’s views, their development in the 20th century, and their connection with LaRouche’s concept of physical economy, it must be noted that criticism of the second law of thermodynamics does not at all mean a denial of the process of dissipation of energy (entropy).

In his “On the Subject of Metaphor,” LaRouche asks: “Does entropy exist?” And he answers: “Yes, but not as a governing principle of the physical universe” (*Fidelio*, Fall 1992, p. 31).

From the standpoint of world view, the problem of the dissipation and concentration of energy in nature and society is complex and contradictory. On the one hand, entropic processes do take place, while on the other, a pre-established well-orderedness is observed. On the whole, there is a combination of organization and disorganization. One does not exist without the other.

### **Florensky and living processes**

In examining the scientific basis and the methods of physical economy, it is appropriate to turn our attention to the views of the leading Russian scholar (philosopher, mathematician, and theologian) Pavel Aleksandrovich Florensky (1882-1937). At the height of his creative powers, Florensky



Prof. Taras Muranivsky (second from right) in Moscow, with (left to right) Rachel Douglas of EIR, president of the Schiller Institute in Germany Helga Zepp-LaRouche, and Karl-Michael Vitt of the Schiller Institute.

was arrested, and then repressed in 1933. First he was exiled to the Far East, where he worked at the Skovoroda Permafrost Scientific Research Station. Here he made several valuable discoveries, while he was studying permafrost. In 1934, he was transferred to the Solovetsk camp, where he worked on questions of extracting iodine and agar from seaweed. He was so successful at this, that he won several prizes.

But the *gulag* could not suffer talent. P.A. Florensky perished in 1937. Before his arrest (between 1921 and 1933), he wrote 225 scientific works and made many discoveries, especially in electric technology.

His views of science as a whole, and economics in particular, laid out in his correspondence with V.I. Vernadsky, are of great interest. Some of them are presented in what follows.

In a Sept. 9, 1929 letter to Academician V.I. Vernadsky, Florensky wrote: "You notice, that there does not exist a single complete chemical analysis of a living organism. Here it should be added, that whatever field you run into, it turns out from the very first steps, that the simplest and most essential necessary phenomena have not been systematically studied at all, but there are just disparate scraps, mixed up any which way in arbitrary schemata. As a result, everything that really exists, that is the most important for us, is only half recognized or is not recognized at all." (Correspondence of V.I. Vernadsky and P.A. Florensky. *Novy Mir*, 1989, No. 2, p. 197.)

We will not go into the question of what degree of completeness of chemical analysis science has achieved today. LaRouche draws attention to this in *So, You Wish to Learn All About Economics?*

Concerning the question of studying life phenomena,

P.A. Florensky in the same letter insistently recommends "somehow to penetrate more deeply into the structure of matter. The naive schematism of contemporary models of the atom stems from mechanistic metaphysics, which from the outset denies the phenomenon of life." These evaluations largely coincide with LaRouche's views.

Florensky condemns the practice of expelling the notion of life from "naive models of mechanics." He generalizes this approach to economics, as well, stressing that "mechanistic models are nothing but a superstructure on top of an obsolete form of the economy, long since surpassed by industry, and therefore, consequently, these models do not correspond to the economy of the present. I would say more, that they are socially and economically harmful, since they lead to reactionary economic thought and, consequently, they restrain and distort the development of industry. If, at the present time, industry means an electric-powered economy, and partly a heat-powered economy, but not a mechanically powered economy, and physics is electrophysics, then it must be obvious to anybody observing the course of industrial development, that the industry of the future, and perhaps the very near future, will be bio-industry, and that on the heels of electric technology, which has practically eclipsed steam technology, comes biotechnology, and that, accordingly, chemistry and physics will be restructured as biochemistry and biophysics."

Here we see not only the organic connection of economics with the natural and technical sciences, but also a forecast of some prospects for the development of this interconnection, which is so graphically manifested in LaRouche's physical economy.

## The economics of Tugan-Baranovsky

Just how difficult it is to realize the ideas and principles of physical economy, is apparent from the attitude of scientists and specialists to other ideas and views of western economists. The influential scientist from the Schiller Institute, Prof. Jonathan Tennenbaum, in his article "Keynes's Fascism with a British Face" (*EIR*, Jan. 8, 1992, p. 14), writes: "It happens that some well-intentioned, but poorly informed individuals in the Third World and eastern Europe sometimes associate the name of British economist John M. Keynes with

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alternatives to 'shock therapy' and other IMF [International Monetary Fund] policies. Not only is such reference false and misleading—Keynes was himself a chief architect of the Bretton Woods system, including the IMF, World Bank, and the General Agreement on Tariffs and Trade (GATT)—but it opens a window of vulnerability to dangerous sorts of mischief. We have reason to think that scoundrels, of the British species to which Sir John belonged, might undertake to circulate various illusory 'liberal alternatives' to IMF policies, as a deliberate counter to LaRouche."

In connection with Tennenbaum's critique of Keynes, it is worth turning our attention to an unusual personality in Russian economics, Mikhail Ivanovich Tugan-Baranovsky (1865-1919). In our country, it is customary to call him a Russian bourgeois economist and an enemy of Marxism. Being Ukrainian, Tugan-Baranovsky became minister of finance in the government of the Ukrainian Central Rada, during the Ukrainian People's Republic (1919).

Tugan-Baranovsky's books, *Industrial Crises in Modern England* (1894) and *The Russian Factory in the Past and at Present* (1898), were a visible event in economic science.

In former Soviet political economy, Tugan-Baranovsky was criticized for his opposition to Marx's theory of reproduction, and for denying the impoverishment of the proletariat and the contradictions between production and consumption, as well as the dependence of production on consumption.

Tugan-Baranovsky asserted that the increase of surplus

value depends on the growth of constant capital, not variable capital, which is of immediate significance for physical economy. Tugan-Baranovsky especially annoyed the orthodox Marxists. He provoked them against himself by exposing Marx's theory of surplus value as purely a methodological gimmick, a fiction. This was reflected in his book *Foundations of Political Economy*.

Characteristic for Tugan-Baranovsky is the humanism of his methodology, which in the past brought down on him accusations of "idealism" and "anarchism." In reality, Tugan-Baranovsky considered "the multiplication of wealth to be an indubitable evil, if it is purchased at the price of degrading the individual working person." Thus, while criticism of Keynes is completely justified, Soviet political economy's evaluations of Tugan-Baranovsky do not stand up to critique.

## Kondratyev and 'long waves'

In connection with a review of the principles of physical economy, there is another repressed Soviet economist, who considered himself a disciple of Tugan-Baranovsky. That is N.D. Kondratyev. In his 1923 book about Tugan-Baranovsky, he called Mikhail Ivanovich "an outstanding personality."

Kondratyev himself is the author of the theory of so-called "long waves." According to this theory, the economies of the developed capitalist countries experience extremely deep collapses approximately every 50 years. And in the fifth decade of a big cycle there is a kind of general psychological discombobulation, which is expressed particularly in an extremely aggressive reaction to state intervention in the social and economic sphere. Society plunges into a nostalgic dream about the "good old days." And nobody thinks about how the "good" of those old days ended in a great depression or a world war.

LaRouche assesses the situation existing in the United States and other countries as a crisis. The profound works of the Schiller Institute on this account are well known. It would seem that it was no accident, that one of LaRouche's recent books was called *In Defense of Common Sense*.

In this connection, the question arises: Are not the theories of the Russian scientist N.D. Kondratyev confirmed by the facts and the evaluations of the Schiller Institute, according to which the West in the mid-1980s entered its latest phase of collapse (a new "long wave")? Doesn't this explain the recent hysterical preoccupation in the United States and other western countries with the ideas of neo-conservatism and its economic instrument, monetarism? It is precisely monetarism that revives the ban on state interference in the social and economic sphere, and defends the principle of early capitalism, "each against all."

Here I cannot fail to mention the substantial chapter in LaRouche's above-mentioned 1984 book, dedicated to monetarism.

## Incompetent social movements

The dream “about the good old days” is taking on a special coloration. First of all, it is a question of some kind of image of “the future behind us,” in the historical past. For example, for Margaret Thatcher that “future” was Victorian England, while for Ronald Reagan and George Bush it was the epoch of President Herbert Hoover. Schiller Institute works provide an exhaustive assessment of these periods and statesmen. Secondly, at the present phase of economic development, “the dream about the good old days” is interwoven with the problem of the environment and ecology. We have all witnessed, how not only incompetent social movements (like the “greens”), but also associations of scientists (like the Club of Rome with its *Limits to Growth*) are calling to stop scientific and technological progress.

Unfortunately, these phenomena and processes are occurring also in Russia, Ukraine, and other newly independent states. What rational justification, for example, can there be for the Russian government’s adoption of a monetarist reform, in 1992? As for the acceleration of scientific and technological progress, the measures adopted by the government are more ritual than real. (Following the rules worked out in the Gosplan era, abstract programs for the acceleration of scientific and technological progress are elaborated, but nobody is seriously engaged in the introduction of new technologies into practice.)

It should be noted, that there are quite a few people among the scientists of Russia and other newly independent states who do understand that it requires more sensitive economic regulation to manage reforms, than simply manipulation of the monetary mass. G. Avrekh of the Russian Academy of Sciences Institute for Problems of the Market is evidently right, when he writes that the type of economic reforms selected in 1992, providing for the action of an “invisible hand,” turned into painful and disorderly kicks by an “invisible foot,” from which both production and consumption suffered plenty (*Poisk*, 1993, No. 6).

As a result, none of the expected “natural” flows of capital occurred. Wholesale and retail prices increased tens of times over. Industrial output shrank by 20-25%. Russian industry began to resemble the china shop that the elephant barged into. The country ended up in a deep “investment hole.” By comparison with 1991, capital investments in construction for production shrank twice as much in 1992. Capital investments in the agro-industrial complex shrank in 1992 by two-thirds.

In this connection, it is appropriate to recall the assessment given by LaRouche in his book *The Science of Christian Economy* (1991). In particular, he writes: “When cartels are permitted to loot agriculture, by the dropping of government parity-price protection for farmers, free agriculture vanishes, and, sooner or later, hunger enters” (p. 290). This assessment, unfortunately, fully applies to Russia today.

## The higher hypothesis

As his scientific research method, Lyndon LaRouche chose the principle called by Plato the Hypothesis of the Higher Hypothesis. According to this principle, any investigation begins when some existing conception is subjected to doubt, and subsequently may be refuted. The scientist experiences such doubts, when he “is annoyed by a noticeable smell of falsehood or superficiality” in some scientific axiom or doctrine.

The Schiller Institute discerned and exposed such a “smell of falsehood and superficiality” in the statistical methods, employed in modern economic science. This is demonstrated in the writings of Jnathan Tennenbaum, Dennis Small, Richard Freeman, and others.

LaRouche analyzes “twin economic pestilences” in 19th-century economic science: “British liberalism’s ruinous cult-dogma of ‘free trade,’ and also Adam Smith’s terrible grandchild, the economic doctrine of Karl Marx” (*The Science of Christian Economy*, p. 273).

The well-known Russian scholar and revolutionary P.A. Kropotkin (1842-1921) once observed that contemporary political economy in reality was metaphysics, as, for example, geology had been at the end of the 18th century.

LaRouche considers that all political economy is metaphysical in nature. The ideal form of economic behavior in that situation is usury, which is so closely connected with the organizer of today’s world economic system, the International Monetary Fund, whose main activity is purchasing money more cheaply and selling it dear.

Among contemporary Russians who have cast doubt on the statistical methods being applied in our economy, the works of V. Selyunin and G. Khanin deserve attention. In their methodology, which is essentially close to the methods of physical economy, the record increases in volumes of production and national income, declared by statistics, are totally refuted. They showed that the successes boil down to “price glazes,” which merely depicted the increment of the final product.

LaRouche attributes great importance to questions of the unity of morality and economics, which he links with the activity of the Roman Catholic Church. In particular, he wrote: “The Church does not propose economic and political systems or programs, nor does she show preference for one or the other. . . . But for a century it has been the largest institution in the world to stand up for the identity of morality and economics” (*EIR*, Jan. 29, 1993, pp. 18-19).

The unification of morality with economics in Russia, Ukraine, and other newly independent states will occur, when they are cured, after Marxism, of that new pestilence of “the free market,” and begin to employ the methods of physical economy. The soil has been prepared for this by LaRouche and the Schiller Institute and, besides them, by many of our own scientists and specialists, on whose views the present lecture has made some partial comment.