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Jonathan Tennenbaum

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## ‘Principles of Physical Economy’ Raised at Rhodes

*Jonathan Tennenbaum submitted an advance summary of his presentation to the 2006 annual World Public Forum Dialogue of Civilizations conference in Rhodes, under the title “Dynamics and the Dialogue of Civilizations—The Principles of Physical Economy.” His presentation opened the workshop on “Problems and Perspectives of the Global Economy.”*

1. The global economic and financial system in its present form, is fundamentally incapable of supporting civilized existence on this planet. It must therefore be reorganized according to different principles. The present system of radical-liberal “globalization” has led to unsustainable imbalances and intolerable injustices in the structure of the world economy, including exploitation of “cheap labor” without compensation for long-term social costs, deindustrialization and permanent mass unemployment, destruction of social systems, looting of raw materials and other national wealth, undermining of national sovereignty, hypercorruption, and concentration of dominant financial power in the hands of a tiny supranational oligarchy. Even more serious, however, is the danger, that an uncontrolled disintegration of the system, due to the collapse of the real estate bubble in the U.S. and elsewhere, a dollar crisis, or by other events, could plunge the world into a long period of chaos and asymmetric warfare. The world urgently needs a scientifically based alternative for how to organize economic relations between and within nations. The core of that alternative is provided by the science of Physical Economy, as the well-known American economist Lyndon LaRouche has defined and developed it.

2. Over the coming several decades, starting now, gigantic physical investments will have to be made into rebuilding, modernizing, and expanding the basic physical infrastructure

of the world economy—“the life support system of Mankind” (Pobisk Kuznetsov). This includes above all land, sea, and air transport; generation and distribution of energy in all forms—with emphasis on nuclear power; communications and water systems, as well as health and education. Fundamentally new technologies and approaches will be required, to insure the long-term supply and access of nations to raw materials (including fresh water supplies), in face of rapidly increasing requirements. For obvious reasons, Eurasia will be the “center of gravity” of this coming period of large-scale infrastructure development, involving many great projects. Of particular priority is to create a highly efficient network of transcontinental infrastructure corridors, connecting the main concentrations of population and production across the Euro-Asia supercontinent, and opening up large undeveloped areas for investment and the construction of new cities. The demand for high-quality capital goods, arising in connection with the modernization and expansion of basic infrastructure, will largely determine the main directions for industrial investment in the coming period.

3. At the same time, the demand for new technologies, and the need to rely increasingly on large-scale application of nuclear power in various forms, requires a much greater emphasis on scientific revolutions as the “driver” of economy. With transition toward a fission-fusion-based “isotope economy,” including the large-scale transmutation of matter, economic life takes on an increasingly “astrophysical” character. The need to maintain sufficient rates of scientific-technological progress will require the expansion of human activity beyond the Earth and near-Earth space into the entire inner region of the Solar System. At the same time, the original discoveries of Vladimir Vernadsky concerning the principles of the Biosphere must be taken into account, in working out long-term policies for managing and developing the Earth’s biosphere and its resources in a systematic fashion. (cf. LaRouche’s books: *The Physical Economy of the Noösphere* and *The Earth’s Next Fifty Years*).

4. Clearly, “market mechanisms” alone could never provide an adequate basis for long-term infrastructure and science investments on such a gigantic scale. Governments will have to assume the chief responsibility, in partnership with the private sector, and in the context of long-term cooperative agreements between nations. Purely financial and monetary considerations cannot be permitted to dictate policy for decisions that will affect the future of entire nations for 50 years or more to come. A well-organized and regulated monetary and credit system, is an indispensable instrument for modern economy, but money cannot define or measure real economic value.

5. The principal criteria, that must be considered in designing economic policy and judging the merits and performance of projects in this period, will necessarily be physical in character: they will involve ratios and rates of increase of energy, power, power density, ton-kilometers and passenger-



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*Tennenbaum stressed that without massive investment in what the late Pobisk Kuznetsov called “the life support system of mankind,” the human race cannot survive, much less grow. Central to this investment is the energy-intensity represented, initially, by nuclear power, and, soon, thermonuclear power. Shown here is an artist’s rendition of Ohi Kansai Electric Nuclear power generation station, Japan.*

kilometers of transport, cubic meters of water, supply of basic market-baskets of consumer and industrial goods, and so forth, measured per capita of the population and per square kilometer of inhabited area, as well as measurements of changes in the demographic characteristics of populations, in the structure and quality of the labor force, etc.

6. However, even these kinds of physical parameters, while much closer to reality than monetary prices and profit ratios, cannot by themselves measure true economic value! The problem of measurement of real economic value, which is the crucial problem in economics as well as practical policy-making, cannot be solved without taking into account the spiritual-creative nature of human beings, recognized by all great religions. Here physical economy touches directly upon the heart of the Dialogue of Civilizations.

7. Lyndon LaRouche’s most essential contribution, is that his discoveries provide the means for understanding and measuring the relationship between human creative mental activity, on the one side, and the physical effects of that activity, as they are expressed in the growth of the productive powers of labor, with respect to the ability of society to sustain an increasing potential population-density of human individuals per square kilometer of inhabited area, on the other. The crucial points are, first, that growth of physical productivity of society depends upon the discovery and transmission of ideas among human beings—ideas in the form of newly discovered

physical principles of the Universe, as well as new principles bearing on the organization of social activity, and the elaboration of those discoveries into new families of technologies and other improved forms of human practice. Secondly, that new scientific discoveries of principles take the form of true Platonic ideas: By their very nature, they cannot be adequately represented or communicated by mathematical formulas or other formal modes of communication. Such ideas can only be discovered and grasped within the sovereign mental processes of individual human minds, and can only be communicated through the ironical and metaphoric uses of languages, typified by the greatest works of classical poetry and art. The reason is this: to discover and to communicate a fundamental new physical principle, requires conceptualizing a true “thought object”—something that is not a material object, but has real effects in the Universe; something that exists, but at the same time lies entirely outside the framework of existing conceptions and “axioms” of

thinking, and has no linear relationship to them.

8. This characteristic of true scientific ideas was clearly identified by Nicholas of Cusa and other Platonic thinkers, and was already expressed, in the early astronomical beginnings of science, in the Pythagorean conception of “*dynamis*.” But Lyndon LaRouche was the first to grasp its fundamental implications for the practical measurement of economic value, and to elaborate an entire science of Physical Economy on that basis. One of the most important results of his work, is a new understanding of the role of material production in the social communication of ideas, and of the interconnection between improvements in the material conditions of life, and development of the creative, cognitive powers of the human population.

9. These discoveries lie at the basis of LaRouche’s proposals for reorganization of the world monetary and financial system—the so-called “New Bretton Woods”—and for the creation of a new structure of long-term trade agreements between nations, which could provide the foundation for a prosperous and happy Dialogue of Civilizations in the coming 50 years.

10. To put it very simply: It is not money, nor physical production per se, that must be placed in the center of economics, but rather the image of Man as a creative being, in the image of the Creator, and in relation to the Universe as a whole.