

Russia's Liberal Reforms: Anatomy of a Catastrophe

by Lyndon H. LaRouche, Jr.

February 7, 1997

[Published in *Executive Intelligence Review*, Volume 24, Number 9, February 21, 1997. [View PDF of original](#) at the LaRouche Library.]

To summarize the issue before us: In the document which appears immediately following this introduction, scientists leading Russia's most authoritative econometrics institution (CEMI), demonstrate, factually, that Russia's liberal reforms have turned out to have been, one of the most monstrous, strategically deadly incompetencies in the history of political-economy.¹ Yet, stubbornly wrong-headed policy-shapers, among the monetarist *Torquemadas* of the International Monetary Fund, the U.S.A.'s National Endowment for Democracy, the U.S. Republican Party leadership, and elsewhere, continue to insist that Russia impose these ruinous "reform and democracy" policies ever more strictly.

*Caesar! "Beware the Ides of March!"*² Perhaps, no one could know, exactly, what major crises will, or will not break out during fateful March 1997. Yet, at the recent bankers' meeting in Davos, Switzerland, the coming March was considered by some relevant celebrities a likely occasion for a major new "bump" in the presently ongoing collapse of the world's monetary and financial systems. Following that Davos meeting, on February 6, the Federal Employment Office of Germany announced, that even the officially acknowledged number of unemployed in Germany has reached the highest levels since the Great Depression of the early 1930s. The second, world-wide, Great Depression of the Twentieth Century, has now arrived; now, during the near term ahead, as during the Depression years of 1929–1932, things can only become worse, until a Roosevelt-echoing economic-recovery program is

¹ D. Lvov, V. Grebennikov, and V. Dementyev, "The Path of Russian Reforms," Working Paper WP/96/014, Central Economics and Mathematics Institute, Russian Academy of Sciences, 1996 [reprinted in *EIR*, Vol. 24, No. 9, February 21, 1997, pp. 32–53].

² "Soothsayer," in William Shakespeare, *Julius Caesar*, Act I, Scene II.

brought in.³ In this situation, for growing numbers of top bankers and related policy-makers, March looms large.

In this setting of onrushing world crisis, notable figures of Russia have warned the world, publicly, that upcoming March, or, perhaps April, may prove to have been a likely time for the outbreak of major reflections of a burgeoning social and political crisis in Russia. March might pass? "*Aye, Caesar; but [the Ides of March have] not gone.*"⁴ The danger is, that, when the next phase of the Russia crisis strikes, the U.S. government, under pressure from the Republican majority in the Senate, might still be sitting, like England's legendary, doomed King Canute, howling denials into the face of the winds and waves of the rising storms of crisis, while clinging, stubbornly, to its present, catastrophically failed "Russia Reform" policy.

Russia today, is the leading center of an on-coming global pandemic of political tornadoes and earthquakes, each promising to strike us, at, or near the extremes of the relevant scales. In the recent CEMI report whose English translation is published in this issue of *EIR*, Academician Lvov, Dr. Grebennikov, and Dr. Dementyev, document those developments which threaten epoch-making convulsions during Russia's near future. That report demonstrates, that the U.S. government must proceed quickly, to scrap the foolish, catastrophically failed "reform and democracy" policy, the which was introduced into U.S. policy by the governments of Prime Minister Margaret Thatcher and the man her memoir described as her gullible lackey, President (*Sir*) George Bush.⁵ The U.S.A. could not afford the folly of not scrapping that British, Thatcher-Bush, geopolitical policy, introduced to eastern Europe during 1989–1992, which has come to be known as the "reform policy."

³ On the surface of things, each considered in the small: There are two principal differences between the U.S.A. and western Europe during 1927–1933, and the same regions of the world today: the monstrous reliance on spiralling accumulations of high-priced short-term indebtedness, as a substitute for actual income of both households and corporations, and the mid-1960s "cultural paradigm shift," away from a production-oriented culture, to a "consumerist" ideology. Typical of today's "consumerist" delusions: as early as the late 1970s and early 1980s, typical U.S. citizens, even putatively rational and literate ones, defended their posture of merciless indifference to the bankrupting of U.S. farmers, with the oft-heard utterance: "I don't need the farmers; I get my food at the supermarket." For those of us old enough to remember, first-hand, the onset and persistence of "hard times" in the U.S.A., during the 1927–1938 interval, the U.S. population today has been experiencing increasingly severe "hard times," since the 1987–1992 mushrooming of the "derivatives bubble." Most interesting, clinically, is the pervasive, pathological phenomenon of psychological "denial," of the fact, that the worsening "hard times" so far experienced in individual and household life, already echo the similar hardships which persisted during the 1927–1938 period of the "Great Depression."

⁴ *Op. cit.*, Act III, Scene I.

The referenced exchange, in the play, runs as follows:

Caesar: The ides of March are come.

Soothsayer: Aye, Caesar; but not gone.

⁵ Margaret Thatcher, *The Downing Street Years* (New York: HarperCollins, 1993), pp. 782–83.

For fully sane persons, today's urgent question is: *What is the available alternative to the lunacy of continuing the present economic policies of the U.S.A., IMF, et al.?* In addressing the accelerating crisis in Russia, that question must be defined in a world-wide context, rather than a narrowly Russian context, or, rather than the context of the region of the former Soviet Union and Comecon. The situation must be defined, globally, on two levels.⁶

On the level of general, global policy-making, the onrushing, global financial collapse must be met in the reawakened spirit of world leadership by war-time U.S. President Franklin Roosevelt. The President of the United States must bring together a concert, of at least a quorum of world powers, and other partners, to establish a three-fold counteraction, to control and reverse the downward-spiralling Great Depression currently in progress. As the present writer outlined the three crucial features of such a global recovery program, during his remarks opening a February 5 conference held in Washington, D.C.:⁷

1. An emergency meeting of such collaborating powers must be convened, to deploy emergency action, as might be done during a short weekend, to put the existing, bankrupt international monetary and financial systems into government-supervised bankruptcy-reorganization, and a new system immediately established on the basis of: a) The best features of the 1946–1966 Bretton Woods agreements, reestablishing a system of relatively fixed parities; b) a revival of the policy of mutually advantageous protectionist measures of trade and tariff agreements, modelled upon the anti-Adam Smith, Franklin-Washington-Hamilton-Carey-List-Lincoln American System of political economy; c) establishing national banking, to supersede the bankrupted central banking systems, as a means for generating and regulating a system of productive credit-creation for recovery of national economies and of world trade.⁸
2. The adoption of the “Eurasia Land-Bridge” development program, which is already the joint policy of China and a growing number of other nations, as the centerpiece of a global economic-recovery program.⁹

⁶ See Lyndon H. LaRouche, Jr. on the subject of *Analysis Situs*: “Return to the Machine-Tool Principle,” *Executive Intelligence Review*, February 7, 1997.

⁷ FDR-PAC Policy Forum: “Eurasian Land-Bridge: The ‘New Silk Road.’ ”

⁸ On 1(b) and 1(c), see Friedrich List, *Outlines of American Political Economy*, with a commentary by Michael Liebig and an Epilogue by Lyndon H. LaRouche, Jr. (Wiesbaden, Germany: Dr. Böttiger Verlag, 1996). See Nancy Spannaus and Christopher White, *The Political Economy of the American Revolution*, second edition (Washington, D.C.: Executive Intelligence Review, 1996), pp. ix-xxv, 1–47, and U.S. Treasury Secretary Alexander Hamilton’s relevant policy outlines to the U.S. Congress, pp. 355-453.

⁹ *The Eurasian Land-Bridge: The ‘New Silk Road’—Locomotive for Worldwide Economic Development*, an *EIR Special Report* (Washington, D.C.: Executive Intelligence Review, January 1997).

3. The revival of the role of the strategic machine-tool sector of a “full set” economic model,¹⁰ as the crucial driving agency for increase of the productive powers of labor throughout the world.¹¹

Turn now to the subsumed, second level. We focus attention, more narrowly, on the cases of Russia, and relevant other nations formerly within the Moscow-centered Comecon system. We turn our attention to the one legacy of the Soviet system, the “strategic” machine-tool sector of Russia’s military-industrial capabilities, without whose revival Russia could not become an economically viable nation within the foreseeable future. We examine the subject-matter of the CEMI report with the implied assumption, that Russia is a key participant in the “new Bretton Woods” emergency conference, which, we propose, must be convoked on the initiative of President Bill Clinton.

An Ecumenical Strategy

Whenever we might consider an attempt, to bring the presently mostly ruined array of the world’s nation-states into a general order of peace and prosperity among sovereign nations, poses the question: “Under what common principle shall such a culturally diverse assembly of nations be brought together in this way?” The European civilization, born in Classical Greece, is about 2,500 years old, and was itself divided by the Roman Emperor Diocletian in the year A.D. 286, establishing the premises for what became the cultural cleavage between what Diocletian set on the one side, to the present day, as 1) “western Europe,” all of whose achievements, ever since, have reflected the Platonic tradition of Augustinian Christianity, and, on the other side, what has been, to the present day, 2) “eastern Europe,” dominated by the Aristotelian heritage of Byzantium. The remaining, principal divisions among the planet’s cultural matrices, are of the species Islam, Confucian, Hindu, or Buddhist, or of syncretic cultures combining axiomatic features otherwise found among these four, and also from European civilization.

The significance of this point is underscored by the growing number of nations which are becoming, or promising to become, active partners of China, Iran, and others, in developing what today’s China policy identifies as “The New Silk Road”: a spider-web of galactic arm-like, economic-development corridors, each corridor built around a “spinal column” of

¹⁰ The author adopts the recommendation of some among his associates, that we revive emphasis upon the term “full set economy.” In those post-Great Depression definitions of U.S. national security established as policy until approximately 1966–1967, the principle was, that the U.S. economy must contain within its borders the “full set” of those components of infrastructure and production essential to sustain full national economic integrity under conditions analogous to general war or virtual siege. This, as distinct from today’s developing sector, and “globalized,” degenerate form of today’s U.S. economy. Excepting a few cases, such as Argentina during the 1940s into the 1960s, the post-World War II states of Iberia and the developing sector, have never functioned economically with a “full set.”

¹¹ Lyndon H. LaRouche, Jr., “Return to the Machine-Tool Principle,” *op. cit.*

a transportation trunk-line, all linking the Atlantic coast of Europe with the coasts of the Pacific and Indian oceans. The growing interest of France and Germany in these “New Silk Road” developments, indicates that the world’s greatest concentration of “strategic machine-tool” capacity, the “Productive Triangle: Paris, Vienna, Berlin, Lille, Paris” [**Figure 1**], will be efficiently integrated, functionally, with the regions of Asia in which the greatest part of the world’s present and future population is embarked upon development: East and South Asia.¹² All of those principal cultural divisions of mankind which we have identified, are located chiefly along the routes of this proposed Eurasian development program.

Is there some common, axiomatic quality of principle, whose authority might be commonly recognized by peoples representing each and all of the indicated cultural divisions of mankind? The authors of the CEMI report do not address the issues explicitly in that way, but they touch upon the matter implicitly, and in a most efficient manner, in the middle section of their report, under the sub-head “Support of Revival.”¹³ We ask the reader to stand behind this writer’s shoulder, watching as the author now turns to address the content of that portion of the CEMI report; share the view of the matter provided by this writer’s standpoint in economic science.

Since the author has elaborated the immediately following aspect of our argument in numerous, earlier, published locations, interpolated summaries will suffice here.

There exists a relevant body of combined evidence of historic, pre-historic demographic, and related evidence, for known cultures, and cohering archeological evidence for earlier traces of actual or putative ancient man. In earlier publications, the present writer has frequently referenced the best available approximation of a consensus among relevant professionals, respecting such demographic evidence. This spans empirical evidence collected from as remote a time as 1 to 4 millions years.¹⁴ This evidence demonstrates that the human species is of a different type than any other living species.¹⁵ Were man an animal, our species’ physiological ecological potential were of the order of higher apes, a maximum of several

¹² For a summary of the “Productive Triangle” policy set forth by Lyndon H. LaRouche, Jr. in November–December 1989, see: “Europe: the ‘Productive Triangle’ Must Be Implemented,” in *The Eurasian Land-Bridge*, *op. cit.*, pp. 127–142.

¹³ See D. Lvov, V. Grebennikov, and V. Demytyev, “The Path of Russian Reforms,” *EIR*, Vol. 24, No. 9, February 21, 1997, pp. 34–36.

¹⁴ *Executive Intelligence Review*, February 7, 1997, pp. 15–16.

¹⁵ For example, only illiterate, or semi-literate barbarians will insist that the human species is divided, in any naturally determined, functional sense, according to racial differences. All forms of human individuals, whatever their otherwise relatively trivial apparent physiological distinctions, have identical cognitive potentials. Within the human species taken as a whole, the only differences of functional significance among persons are those of degree of cognitive and related cultural development of individual persons. The empirical evidence is, that most past cultures of mankind have been cognitively correctly inferior to the best modern culture, but there is no biological determination of cultural superiority, or inferiority among so-called “races.”

millions living individuals under even the most favorable conditions actually existing on Earth during the recent 2 millions years' cycles of waxing, and temporarily waning glaciation.¹⁶

By the time of Europe's mid-Fourteenth Century "New Dark Age," the total population of this planet had reached several hundred millions human individuals. The crucial fact, with which a science of economics, and any competent species of historiography, begins, is, that: *the global impact of the development of the modern European form of sovereign nation-state, has been, despite all of those contrary evils spewed from within modern European civilization, a greater improvement in the demographic characteristics, of whole populations and of households, than was effected by any and all earlier, other forms of cultures, combined, during all earlier human existence.* Admittedly, the effort to break free of the imperial legacy of ancient Babylon and the Roman empires, to establish sovereign nations, antedates the Fifteenth Century formation of the first modern nation-state, France under Louis XI, during A.D. 1461–1483. Nonetheless, the form of nation-state economy which was set into motion by Louis XI's reforms, presents, for the first time in human existence, that specific combination of policies which has been the source of the hyperbolic improvement in this planet's general human condition over the interval 1461–1966.¹⁷ The net exceptional achievements of the influence of the modern European form of sovereign nation-state republic, over the interval 1461–1966, serves the scientist and historian, alike, as what physicist Bernhard Riemann's method identifies as a unique experiment, through aid of which to bring into empirical focus, that principle of human nature which has always set the potential of the human individual, in every culture, absolutely apart from, and above that of each and all of the animal species.¹⁸

Within that framework, situate a clinical view of the sharply contrasted successes and failures within the broad sweep of the 1918–1991 Soviet economy, as this is reflected within the CEMI report. This approach is uniquely indispensable to any competent opinion respecting

¹⁶ Perhaps significantly less than one individual for the average ten square kilometers of habitable regions.

¹⁷ See Lyndon H. LaRouche, Jr., "Return to the Machine-Tool Principle," *op. cit.*, on the post-1966 reversal of the modern progress of planetary civilization up to that point.

¹⁸ The author's preference for the use of "unique experiment," rather than the more commonplace, classroom, "crucial experiment," is the need to place in a special class those experiments which define such a newly discovered, valid principle of nature, as leads to the discovery and validation of a new general hypothesis governing all physical space-time theorems, replacing the previously reigning hypothesis, the which had been rendered paradoxical by the kind of evidence which uniquely requires the overturning of that earlier hypothesis. For example, the Seventeenth-Century experimental evidence, leading through the discovery of isochronicity in the gravitational field, by Huygens, through the determination, by the combined work of Huygens, Rømer, Leibniz, and Bernoulli, of cohering isochronicity in the domain of that refraction of light determined by apparently constant rates of retarded propagation of light. The term "unique experiment" is introduced in this location, because of its significance in defining a functional notion of scientific and technological progress's role in increase of the productive powers of labor.

the possibilities for rebuilding the economy of Russia. More broadly, these paradoxical features of the contrast between the relatively successful, former Soviet economy, and the utter failure of Russia's economy under the so-called "liberal reforms," provide a valuable lesson to the world as a whole. When we compare the impacts of the military sector of the economy in the former Soviet Union, with the best, exemplary cases of the western European model of modern nation-states, such as Colbert's and Lazare Carnot's France, the rise of Schiller's, Gauss's, and the Humboldt brothers' Nineteenth-Century Germany, and the 1789–1966 U.S.A. under the guidance of its Leibnizian Federal Constitution,¹⁹ we are obliged to recognize that these included successes, in both systems, express an underlying, axiomatic principle of Leibniz's teaching and influence, the which is commonly expressed within the best economic achievements of both the "Western" nation-state and the Soviet models.

The authors of the CEMI report put their fingers on the relevant point. In the section we have referenced above, they identify Russia's four "trumps in the game" of economic revival: "First, there is the nation's intellect, its education;" "Second, there are scientific schools which have traditionally defined the image of Russian science;" "Third, there is the unique geographical position of Russia in the world community," the bridge-head for the Eurasia Land-Bridge, unifying Atlantic and Pacific Eurasia; and, "Fourth," presently, largely idled, "accumulated production capacities in different branches of industry," which, if reactivated, would "satisfy a considerable share of internal demand," and also, "provide large supplies for export." Look at the CEMI picture of Russia's potential, henceforth, from the vantage-point of **Figure 2**, reproduced here from the author's "Return to the Machine-Tool Principle."²⁰

The common role which state-sponsored universal education, scientific discovery, state-directed infrastructural development, and investment in scientific and technological progress, have represented, in successful periods of economic growth within both "western European" types of sovereign nation-states, also within Russia under Tsars Peter I and Alexander II, and under the later Soviet system, reflects a principle which underlies all human progress, since the earliest prehistoric times. This deeply underlying principle, is the nature of man: the quality, universal to the newborn human individual, which sets mankind apart from, and above all lower forms of life.

¹⁹ The fact that the U.S. Declaration of Independence rejects John Locke's principle of "life, liberty, and property," and adopts Leibniz's term of rebuke against Locke, "life, liberty, and the pursuit of happiness," instead, should be coupled with the Leibnizian language of U.S. fundamental law, that of the Preamble of the Federal Constitution, and the explicitly Leibnizian economic policy of President George Washington's administration, as reflecting the fact that the crafters of the Declaration of Independence and Constitution were, unlike scribe Thomas Jefferson, followers of Leibniz. The concepts of "pursuit of happiness," and "general welfare," are already developed conceptually in Leibniz's first writing on economy, his 1671 *Society and Economy* (e.g., John Chambliss, trans., *Fidelio*, Fall 1992).

²⁰ *Op. cit.*, p. 21, **Figure 3**: "How the Machine-Tool Principle is situated."

That underlying principle, is therefore a universal principle, which is common to the nature of all men and women, whether they be products of western European or Byzantine, or Islamic, Confucian, Vedic, or Buddhist cultures. This underlying principle is, thus, a true ecumenical principle, the authoritative basis, in scientific certainty, for a law of economy common to all civilized society.

The Nature of 'Economic Man'

For Christian, Jew, and Muslim, this ecumenical principle is traditionally defined, canonically, as the kernel of their religious belief respecting the nature of man. In the only literate choice of English prose style, that of William Shakespeare and the *King James Version*, **Genesis** 1:26–30, the terms employed are man and woman made in the “image of God,” to “have dominion” over the Earth and every living thing within it. For Confucius, the matter is stated differently. Some in the tradition of the Vedas might agree, but others among them, like some Buddhists, might not. As the Soviet case brings the point into view, many today do not accept any religious teaching at all. Thus, for the sake of ecumenical universality, we must let the stones speak; if **Genesis** had never been written, the testimony of nature itself compels us to the same conclusion respecting the nature of the individual new-born person.

It is easily demonstrated, that the nature of the individual person so defined can mean nothing other than *Reason*, as scientists such as Nicholas of Cusa, Leonardo da Vinci, Johannes Kepler, and Gottfried Leibniz defined the use of *Reason*.

How does man effectively assert dominion, except by increasing the human population, as **Genesis** prescribes? Since the limit of living population for ape-like, or so-called “ecological” man, could not exceed several millions individuals, the dominion which **Genesis** prescribes could be attained only through increasing the *potential relative population-density* of the human species. The latter signifies, in practice, that we must simultaneously decrease the average land-area required to sustain a typical individual or family household, while decreasing the morbidity rates and otherwise improving the demographic characteristics of those populations, and increasing the material standard of living for households, while also increasing the physical productive powers of labor per capita.

When we look backward, toward prehistoric periods of human existence, we discern, rather readily, that certain changes in technology account for the general ordering of demographic improvements, relative to type of quality of area of habitation. Looking closely at the reasons for success or failure in the *physical-economic* performance of modern nation-state economies, enables us to define these matters in a much more refined way than the relevant archeologists have done. The development of the modern, sovereign nation-state economy, is the appropriate choice of subject for this inquiry; the connections are shown most clearly by

focussing upon the industrial production of physical goods. In this approach, highlighting the coincidences and differences between the approach taken by the authors of the CEMI report, and the present author's work, should prove most usefully provocative.

For the best resolution of the functional relationships within that phase of the economy as a whole, we must focus upon the interconnections among: 1) a certain quality of education, the so-called Classical Christian humanist mode, as typified by the Humboldt reforms in Nineteenth-Century Germany; 2) the "strategic" machine-tool-design sector of the economy as a whole; and, 3) the relationship between the labor-force so educated, and the environment of production and product-design defined by the interventions of that "strategic" machine-tool sector.

To meet the standards of measurement inhering in competent experimental physics, we must resort to Riemann's approach, as rooted explicitly in Plato's principle of hypothesis.²¹ Although this author has defined this principle of hypothesis repeatedly in earlier published locations, the widespread ignorance of this principle of scientific method, even among science professionals, makes mandatory no less than a summary set of definitions.

A fair definition of hypothesis as such, from the standpoint of a simple Euclidean geometry, proceeds as follows. Given a set of propositions in geometry, subject to the restriction, that no pair among those propositions be mutually inconsistent. Employing Socratic method, adduce a set of underlying definitions, axioms, and postulates, the which is not inconsistent with any among such a subject set of propositions. That set of definitions, axioms, and postulates, taken as a unity, constitutes a simple choice of exemplary Platonic hypothesis. All possible propositions which are not inconsistent with that hypothesis, constitute a theorem-lattice.

For the case of geometry concede, the baseless, arbitrary character of the assumption, that extension of space and time is limitless, and expunge the fallacious, Euler-Lagrange presumption, that extension is, axiomatically, perfectly continuous,²² without the possibility of intervening discontinuity. Next, concede, that any discovered new physical principle, such as one of experimental physics, which is validated by measurement, is an extensible principle to be treated as an added "dimension" of a physical space-time geometry. The result, is the development of a new hypothesis, superseding the hypothesis overturned by the relevant, validated, experimental evidence.²³

²¹ As distinguished, as by Bernhard Riemann's 1854 habilitation dissertation, from a formalist mathematical physics. Bernhard Riemann, *Über die Hypothesen, welche der Geometrie zu Grunde liegen*, **Bernhard Riemann's gesammelte mathematische Werke**, H. Weber ed., second edition (New York: Dover Publications, 1953), pp. 272–287.

²² I.e., linear even in the very small.

The latter view of the progress of experimental physical science, defines the historical process in terms of successions of hypotheses, each representing a potential advancement in the human condition over the knowledge represented by the hypothesis which it has superseded. Therefore, *Science* is defined as knowledge of those principles of revolutionary discovery, the which lead, from experimentally-based paradoxes overturning established hypotheses, through discoveries of validated new principles, to synthesis and experimental validation of superseding hypotheses.

Thus, Plato, like Leonardo da Vinci and Johannes Kepler, defines *Reason*, and Leibniz *necessary and sufficient reason*. Given a validated principle of nature: what is the hypothesis which corresponds to the experimental-physical reality of that validated principle? The hypothesis which satisfies that restriction, constitutes the relevant expression of “necessary and sufficient reason.”

To bring into focus the crucial principle upon which the interdependent roles of education and the machine-tool principle depend, we must go a step higher, but in the same sense of direction.

In any competent mode of education, the student learns the validated principles discovered in the past, by reenacting the original mental act of discovery within the individual pupil's own, sovereign mental processes. The pupil is presented with a paradoxical fact, and in a paradoxical manner; the student is challenged to solve the paradox. By generating solutions to such paradoxes, and discovering how they may be validated experimentally, the student has relived the mental action of the original discovery. That student now *knows* the principle; if he had merely learned it, as from a modern style of textbook, he does not *know* the principle; the latter pupil's ostensibly correct formal answer to an examination question, has no more moral authority than mere academic gossip, mere “learning.”²⁴

In the case, that the student has enjoyed an education of the superior quality associated with the Platonic humanist approach of Schiller, Humboldt, *et al.*, the student has relived a significant portion of those discoveries of principle upon which all historical progress of mankind, up to that time, has been premised. In addition to learning each of these *Many* discoveries of principle one at a time, the student is made familiar with the repeated experiencing, within his or her mind, of that method of synthesis of such discoveries, the

²³ Riemann, *op. cit.* pp. 272–273. For an elaboration of the present writer's views on the same subject-matter, see his “The Essential Role of ‘Time Reversal’ in Mathematical Economics,” *EIR*, October 11, 1996.

²⁴ Friedrich Schiller described such “learned gossips” with an appropriate term of contempt, as the *Brotgelehrten*. Francisco Goya cartooned such scholars as asses being taught by asses. In good classrooms, the important questions in any examination, involve matters for which the solution, or the procedure for its derivation have not been supplied in textbooks or earlier classroom instruction; rather, what should be tested, is the student's developed capacities for solving new classes of problems at the outer boundaries of the education explicitly supplied.

which orders the series of hypotheses corresponding to these discoveries. That method of synthesis corresponds to what Plato identified as *higher hypothesis*, and, also, as *hypothesizing the higher hypothesis*. This notion of “higher hypothesis,” is the key to understanding the function of education and the machine-tool principle in the national successes of modern physical economy.

This notion of *higher hypothesis* takes us above the level of any generally accepted classroom-blackboard form of deductive mathematics. Leibniz sometimes identifies this higher domain by the term *Analysis Situs*.²⁵ Consider three types of examples of *Analysis Situs*.

Cognitive development: In the process of superseding, successively, a series of hypotheses, the process experienced by the student's mind corresponds to an ordering of a succession of hypotheses. Since there can be no deductive consistency among different hypotheses, what is the quality of that anti-entropic ordering, the which subsumes an ordered succession of hypotheses? **Living processes:** Are characterized by an anti-entropic ordering, like that of successive states of hypothesis. **Ostensibly non-living processes:** In the particular, what we presume to be non-living processes are characterized by an implicitly entropic ordering; however, the universe taken in the large exhibits anti-entropy. Thus, considering the efficiency of the anti-entropic interaction among the ostensibly non-living, living, and cognitive orderings, the ordering of the particular process within the universe, is determined by a subsuming (e.g., underlying) principle of the universe as a whole. These orderings in physical space-time are implicitly Riemannian, expressions of that principle of *higher hypothesis*, a notion of the kind of formally discontinuous function which subsumes the implicitly measurable ordering of a succession of mutually inconsistent, physical space-time hypotheses.

Similarly, experimental science examines non-living, living, and cognitive processes, as interacting within a domain of ideas which are respectively microphysical, macrophysical, and astrophysical in quality. Thus, science is to be mapped in terms of permutations of efficient relations within the nine-cell domain so presented.²⁶ These relations are, in turn, expressed primarily in terms of ordered successions of mutually non-consistent physical space-time hypotheses.²⁷ All of the permutations, taken together as one, are, in turn,

²⁵ See “Studies in a Geometry of Situation,” *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*, Leroy E. Loemker, ed. (Dordrecht, The Netherlands: Kluwer Academic Publishers, 1989); pp. 248–258. The Leibniz writings published posthumously under the title of *Monadology*, must be recognized as elaborating an *Analysis Situs*.

²⁶ Permutations, not merely combinations, since the order in which the relations are represented, is functionally crucial.

²⁷ Hence, not subject to a generally accepted classroom mathematics. Hence, after the combined work of Gauss and Riemann, the Euler-Lagrange presumptions respecting formal analysis of mathematical functions, are superseded by the principle, that every valid mathematics is generated, and supplied proof, from the standpoint

subsumed by a general principle of ordering.²⁸ Such, in summary, are the outlines of a generalized *Analysis Situs*.

When we return to economics, from considering these implications of the work of Gauss and Riemann for the further elaboration of Leibniz's principle of *Analysis Situs*, we have the following results bearing upon both the nature of the human individual mind, and the efficient baring of the education of this mind upon sustainably profitable (i.e., anti-entropic) forms of physical-economic processes.

Once a Classical humanist mode of education is examined from the standpoint of a Riemannian form of *Analysis Situs*, we are enabled to form distinct ideas respecting the parallelism between, first, those advances in knowledge which arise from reexperiencing the original discovery and experimental validation of universal principles, and, second, those increases in anti-entropic qualities of "full set" physical-economic processes, the which result from investment in the increase of the productive powers of labor through scientific and technological progress.

As Leibniz argues, in his 1671 *Society and Economy*, we must recognize that the physical-economic productive powers of labor depend upon provision of the necessary preconditions of cultural development and situation of work, upon which the sustaining of such expressed productivity depends. These include the cultural conditions of family life, on which the relevant conditions of health and cognitive powers depend. As Leibniz elaborates these notions in his later writings bearing upon the science of physical economy, the development of basic economic infrastructure, is such a precondition, as are capital-intensity of production and density of power supplied to operations of production and infrastructure. Thus, to employ a common classroom term, we may speak of a required "energy of the system," enveloping the preconditions for producing and sustaining of a specified potential, physical-economic productivity of labor, as set within an historically defined situation.

Thus, "full set" physical-economic processes express implied functional relations, between changes in per-capita and per-square-kilometer values of "energy of the system" and "free energy." The required increases in "energy of the system," needed to sustain, or to increase potential productive powers of labor, represent a functional restriction. The relate requirement, to increase the physical-economic capital-intensity, power-intensity, and technological advancement, of both infrastructural development and production, is a

of validated revolutionary advances of principle in experimental science, not the other way around. Gauss's Platonic approach to developing higher mathematics, establishes the method to which experimental science must turn, to devise appropriate new forms of mathematics as discoveries of principle require this.

²⁸ E.g., an echo of the ontological paradox of "One" and "Many," the which is the subject of Plato's *Parmenides*.

functional restriction. With those, and related constraints, the general requirement is that the physical-economic ratio of “free energy” to “energy of the system” must not decline.

In any function consistent with any of today's generally accepted, classroom, deductive mathematics, the physical process so described, is formally, and also actually, an entropic “zero-sum game.” A physical economy which meets the indicated functional requirement for maintaining or increasing the ratio of “free energy” to “energy of the system,” is, from the standpoint of *Analysis Situs*, characteristically anti-entropic.

Similarly, any effort to define a living species genetically, defines that species' population-function as attritionally entropic. The anti-entropy of the lower living species, lies where Nicholas of Cusa located a principle of evolutionary development, in the *Analysis Situs* which locates the emergence of higher species from within arrays of lower ones: a living species is, in Cusa's (i.e., *Analysis Situs*) argument, functionally, a relatively lower species which participates in the existence, or coming-into-being of a higher species. Man is the only species which evolves, within itself, to higher cultural states of evolution. On this point, we encounter the kernel of the absolute difference which sets mankind apart from, and absolutely above all other forms of life. Man participates in the higher species he is becoming, and, participates, thus, as such a lower species, in that Creator whom Plato identifies as the Composer of the universe, the Good.

Thus, such is the universal nature of individual man. Thus, human nature appears to be from the standpoint of the professional practice of experimental science. However, there is an additional feature which is crucial: *the human emotion*, which Plato and the Christians identified by the Greek term *agapē*. The combined standpoints of *Analysis Situs* and *agapē* are what Kepler and Leibniz recognize as the principle of *Reason*. This notion of *Reason* is thus the name for the universal principle of which the stones might speak, the universal, ecumenical nature of man.

This is the quality of the individual which must be addressed by the interacting requirements of education and household life. It is the development of these cognitive (creative) potentials of the individual, through household nurture and education of the young, which the Classical humanist education best fosters, which develops the moral character of the student, by bringing to higher levels of fruition that quality which sets the human individual apart from, and above the beasts.

The individual so nurtured and educated, may translate validated discoveries of principle, and of improved hypothesis, into qualitatively improved designs of products, and qualitatively and quantitatively improved infrastructure and productive processes. The individual so nurtured and educated, as a member of the labor force, is enabled to assimilate these improvements in design. Otherwise, that individual represents a society which is

capable of making effective use of the products and improvements in infrastructure so provided.

Thus, those cited four features of the former Soviet society referenced within the CEMI report, address the kernel of those Nineteenth-Century developments in modern agro-industrial, nation-state economies, the latter which embody the vast superiority of physical economic performance of modern European civilization, including Soviet society, over all historic and prehistoric predecessors.

Thus far, the programmatic approach to revival of Russia's economy, implicit in the CEMI report, satisfies the conditions specified, at least in approximation. We support that conclusion by aid of the included presumption, that the CEMI authors would not object to refinements in education policy along the lines the present author has implied here.

The Nature of Human Motivation

This brings us to the crucial issue of *motivation*.

Some leading former Soviet scientists have concurred with the present writer's observation, that true scientists need no other motivation than love of scientific work to push themselves to, or near the limits of their capacity for achievements. Generally, as long as they have sufficient personal sustenance to meet the requirements of their personal and household affairs, dedicated professionals would prefer to devote themselves to scientific work, than be offered any better-paid alternatives. When one considers the scarcely stunning relative pay-scales of the typical Soviet scientist, and compares this with the productivity of Soviet science against world standards, there can be no reasonable doubt of what we have just argued on this point.

The same is also true for the most serious scientists and professional Classical artists, even in the Golcondas of western Europe and North America; even the most highly celebrated such artists would be devoted to their profession, were they confronted with the painful choice, either to eke out their material existence within the bounds of their profession, sell themselves "on the street" of cheap entertainments, or, labor outside the profession.

Now, put to one side the special case, of the motivation of the best scientists and the moral sort of Classical artists. How might the generality of the population be motivated for progress, rather than seeking riches like some tragically decadent, pleasure-chasing character out of a Balzac novel, or, of John Locke's perverse desires?

In Christianity, for example, the “test of death” obliges the mourners to reflect on the meaning of the brief historical passage of the individual through mortal life.²⁹ In the balance which may be struck, in preparing the elegy for that solemn occasion, insightful reflection may discern that aspect of the departed one’s life’s work which should be regarded by mankind as a blessing supplied by the Hand of Providence. In the words of the Islamic poet, we may refer to the idea, that the individual whose passing has satisfied “the test of death” in that way, had died “with a smile on his face.” In the tradition of Confucius, the same principle is adumbrated by a different tactic. Did not Soviet society seek a proper balance-scale for a like purpose?

The pervasiveness of conscience-stricken regrets, reminds us, that relatively few have not often mislaid the will, to live up to the standard implied by such a “test of death.” We should be reminded, so, that it is not sufficient merely to contemplate such a value; one must be governed by the efficient passion to realize it. What, whence, such quality of passion? The implicitly required motivation need not be sought outside the bounds of *Reason* itself; that passion was known to Plato, and to the Christian Apostle Paul, by the Greek name *agapē*.

Here, we place the emphasis on the fact, that that specific quality of emotion is known to whoever has succeeded in producing valid original discoveries of principle by the Classical humanist methods indicated above. It is known, similarly, to whoever has, otherwise, reflected upon the specific quality of passion, the which is required to drive to the point of successful “break-through,” the replicating of another’s original solution to an ontological paradox. Without that specific quality of passion, the which is indispensable to drive concentration to the outer boundaries of present knowledge bearing upon the relevant paradox, there could be neither valid original discoveries of principle, nor the effective replication, and, thus, actual knowledge of, any original such discovery from the past.

That lack of precisely that quality of passion, is the basis for the entire philosophy of Leonhard Euler’s follower, the unfortunate Immanuel Kant of the *Critiques*. Hence, his hysterical, formalist’s denial, that the possibility of such willful discoveries exists, is the centerpiece of Kant’s sterile life.

On this account, Classical art is precious to science, and to morality in general. On this account, the Fifteenth-Century Golden Renaissance’s universal scientist and universal Classical artist, Leonardo da Vinci, is exceptionally precious for modern civilization as a whole. Scientist Leonardo’s method in the domain of Classical art is of the quality of *metaphor*, an unnamed, paradoxical meaning, which underlies two or more ironies. All such metaphor, thus, takes the mind beyond the reach of the senses and the sensuous passions,

²⁹ “Test of death” = Latin “... in mortis examine.” Compare musician Mindy Pechenuk’s presentation of the Analysis Situs of Wolfgang Mozart’s “Ave Verum Corpus” motet (K. 618) to the September 1996 Reston, Virginia conference of the Schiller Institute. *Fidelio*, Winter 1996.

into that same realm of ontological paradox, for which Riemann supplies his original discovery of an approach to mathematically measurable solutions of problems in the domain of Analysis Situs.

Consider all Classical art as in opposition to such decadent practices as “Romanticism,” “Modernism,” etc. In all modern Classical art, such as that of Leonardo, Raphael Sanzio, J.S. Bach, Mozart, Beethoven, and Brahms, *agapē* as such is demonstrably the underlying subject-matter; hence, the discernable religious quality of all such Classical art, in opposition to “Romanticism,” “Modernity,” etc.

Once one perceives the riddle of the mural, “The Last Supper,” on the far wall of the chamber in Milan’s Santa Maria delle Grazie, as implicitly a mirror-image of the room in which one is standing, one finds oneself reflected into the right eye of Jesus Christ. Or, the paradoxical sources of light in Leonardo’s “Virgin of the Grotto,” or the ontological paradoxical character inherent in the viewing, on site, of Raphael Sanzio’s “The School of Athens,” or “Transfiguration.” We have a foretaste of this, in reflecting upon the revolutionary advance of Classical Greek sculptors, such as Scopos and Praxiteles, over the sterile archaic standard of then-contemporary Egypt: Classical art takes the mind beyond the fallacy of sense-certainty, by means of posing ontological paradoxes, metaphors, which challenge the creative-cognitive powers of the individual mind.

For a more rounded overview of this same principle of Classical art, consider the form of *motivic thorough-composition* originated by Wolfgang Mozart.³⁰ A composition which satisfies Mozart’s method, can be represented in formal-musicological terms, only as a functionally ordered succession of Riemann surfaces.³¹ That is to emphasize, that the performance of the composition must be governed, throughout, in memory’s anticipation of the completed pathway to that resolution which appears at the close of the composition. The celebrated conductor Wilhelm Furtwängler referred to the polyphonic tension so evoked in the Classical performer, as “playing between the notes.” Thus, it is often said, that after a performance of “arch-Romantic” Richard Wagner’s *Tristan und Isolde*, “There was not a dry seat left in the house”; whereas, in the faithful performance of any major work of Mozart, Beethoven, or Brahms, there should not be a “dry eye left among the audience.”

³⁰ See, Lyndon H. LaRouche, Jr., “Mozart’s 1782–1786 Revolution in Music,” *Fidelio*, Winter 1992, and, “The Essential Role of ‘Time Reversal’ in Mathematical Economics,” *loc. cit.* Although Mozart’s discovered principle is historically rooted, entirely, in his original solution to an implication of J. S. Bach’s *A Musical Offering*. Maestro Norbert Brainin has discovered decades past, a most compelling case for the still too-little known proposition, that Haydn’s student, Mozart, was put onto the track of such new principles of composition, by Haydn’s own discovery of *Motivführung*, as employed in Haydn’s Opus 33 “Russian Quartets.”

³¹ See Mindy Pechenuk, *op. cit.* See also, the author’s referenced paper on the subject of “time-reversal” in mathematical economics.

The quality of “tears of joy,” or *agapē*, is, in this way, the underlying subject-matter of all great Classical art.³² The point to be emphasized, is that this is the same emotion called forth within the individual for the successful attack upon needed principled solutions for ontological paradoxes in scientific work. This same quality, is the proper motivation for all addresses to the problems of principle bearing upon social relations and statecraft.

Without *agapē*, there is no *Reason*; “Reason” apart from “*agapē*,” is a paralogism, akin to the mechanist’s notion of a living human body without life.³³ The delusion, that the quality of *agapē* must exist independently of “Reason,” is typical of Aristotelean conceits, which confuse “Reason” with deduction, and science with a hesychastic quality of contemplation which Jonathan Swift’s “Gulliver” found among the sages of the floating island of “Laputa.”

Friedrich Schiller’s deep insight into the role of *agapē* within *Reason*, is pivotal in Wilhelm von Humboldt’s educational reforms.

Classical humanist education is premised upon the practice of inducing the student to reenact, each within his or her own, sovereign mental processes, valid original discoveries of principle in the domains of science and Classical art. This requires that the curricula be governed by a certain ordering of such rediscovery of principles, according to the criterion, that the principle which the student must rediscover next month, should be the solution to a paradox whose comprehension is made reachable through the principles rediscovered during the present and earlier months.

This practice, by invoking the agapic motivation of creative solutions to ontological paradoxes, in this way, was recognized by the Humboldt reforms as providing a form of education whose most common benefit was the development of the moral character of the individual graduate. That development is nothing other than the twofold strengthening of the agapic impulse within the student’s life: rendering the agapic motivation more readily accessible, and situating the mastery of crucial tasks of life, including social relations, in reference to that emotion.

Communism and Agapē

Did professedly atheistic Soviet Communists experience *agapē* as motivation? Obviously, many did. The CEMI report prompts our attention to this by its references to motivation, under the subhead, “Russian Anti-Communism as an Ideology.”

³² Thus, the *canonically* religious quality intrinsic to the Mozart *Requiem*, and Beethoven’s *Missa Solemnis*, in contrast to the sensualist, irrationalist “Romanticism” of Hector Berlioz’s blaring *Requiem*.

³³ E.g., the Benjamin-Franklin-hating British Benthamite, Mary Wollstonecraft Shelley, with her political anti-science tract, *Frankenstein*.

The corrosive influences of moral decay which post-missile-crisis Soviet society shared in common with the U.S. and western-European cultures of the 1960s through 1980s, produced within the ranks of Party and opposition a quality of existentialism historians associate not only with the 1920s Weimar youth-counterculture Germany of the Nazi ideologue Martin Heidegger and Hermann Hesse's *Steppenwolf*, but with those waves of radical "conservatism," as described by Dr. Armin Mohler,³⁴ out of which the Nazi and related movements were created.

Thus, under the geopolitical conditions imposed by Thatcher's Britain and U.S. President Bush, a dionysiac horde of pillagers was unleashed from the rage-filled underside of both the old Soviet Nomenklatura and the morally disoriented portions of the former opposition.

That historical parallel is extended to the degree that the chief ideological influence around which the geopolitical pillaging of former Soviet society is organized, is British intelligence's highly ideological Mont Pelerin Society, the agency which transformed an English greengrocer's daughter, into the mean British Nanny, former Prime Minister Margaret Thatcher.³⁵ The Mont Pelerin Society itself, long headed by a recently deceased, Hitler-era radical conservative, Friedrich von Hayek, is an authentic clone of those 1920s and 1930s "radical conservative" strata from which the Nazis and genetically kindred fascist movements were spewed.

This same Mont Pelerin Society is the leading coordinating agency among an aggregately powerful array of foundations and related agencies, such as the Heritage Foundation, National Endowment for Democracy, and International Republican Institute, which operate, directly, or indirectly under the control of the British oligarchy's foreign policy and related executive organizations.³⁶ The British agent, George Soros, is also typical of the screens behind which the higher level names of the British monarchy operate.

The "conservative revolution's" Mont Pelerin Society and its ideology is the leading origin for that stink of nominally "anti-communist" cultural pessimism, against which the authors of the CEMI report complain, with their words: "A simple formula is drummed into the masses: The market economy is based upon private property, and that means it is incompatible with any ideology. And, in general, the market gets along without any ideology, because it is governed by day-to-day interests, not by utopian fantasies about a brilliant future." The authors rightly emphasize the nature of the fraud in the babbling "free

³⁴ Armin Mohler, *Die konservative Revolution in Deutschland, 1918–1932*, second ed. (Darmstadt: 1972).

³⁵ It is notable, that highly placed British insiders recognize Friedrich von Hayek's reprogrammed Thatcher as a caricature of the Labour Party's late Bessie Braddock.

³⁶ These British Commonwealth organizations, which are the immediate "constituency" of the British monarchy and Privy Council, are known generically by the title "Club of the Isles," and are typified by the institution behind the 1961-founded World Wildlife Fund, the self-styled "1001 Club."

market” rhetoric: “...the ostentatious ideological nihilism of the ruling elite is a hypocrisy that poorly conceals its adherence to its own ideology.”

Certainly, “free market” ideology was always a fraud which was concocted by witting scoundrels for the purpose of looting the credulous. The more one degrades market relations in the direction of pure anarchy, the greater the rate of entropy in the economy; the more savagely national boundaries are breached, the more rapidly, extensively, and uncontrollably, the floods of chaos will sweep over the world at large, when the inevitable, onrushing implosion of the present speculative bubble breaks out.

London's oligarchical elite, expects, and even welcomes that foreseeable catastrophe. That oligarchy's game is no longer secret to anyone who matches the actions of British Commonwealth raw-materials asset-grabbers, with the plain-spoken policy uttered within the relevant British Commonwealth press itself. The game is, to liquidate the institution of the modern sovereign nation-state, ending the five-odd centuries of development of the European model of investment in general education and scientific and technological progress of national agro-industrial economy. Amid the ruins of the collapsing national economies, to descend, like vultures, to grab from the mortal remains of dying nations in Central Asia, Africa, and elsewhere, a virtual monopoly over the production and trade in the majority of those food and mineral resources upon which future life on this planet will depend.

The demoralization of those of Russia's present “anti-communists” to which the CEMI report refers, points implicitly to the existence of the relative moral superiority of the Soviet system, over that of the Mont Pelerin Society-influenced “anti-communists.” The fact that Soviet society was axiomatically anti-religious, sometimes militantly so, must not be understood to suggest that Soviet society did not participate, in its own fashion, in the ecumenical sot of morality which we have outlined here. The four “trump cards” which Soviet society has bequeathed to Russia and the world today, are reflections of nothing different than the power of *agapē*, as *Reason*, as we have defined it here, acted through, chiefly, the Soviet commitment to scientific and technological progress.

Russians, and relevant others around the world, must not forget that Soviet society, premised largely on accomplishments inherited from earlier Russia, also made its contributions, a legacy which must be brought Phoenix-like, from the ashes of the fallen system. That legacy was relatively good for its time and situation. Now, the system which has ruled western European civilization these past thirty years, tumbles into the same sewer of economic depression and financial collapse, into which the Soviet system was dumped but a few years earlier. All that was good under today's recently fallen, and falling dynasties, was the creation of *Reason*, as we have defined “Reason” here; like the mortal soul, who entered time as a newborn stranger, and later left us with benefits mankind would otherwise have lacked, the

products of agapic Reason are always to be treasured, and salvaged for the benefit of present and future generations.

True, some Communists were terrible. They were like the hooligan Maximilian Robespierre, or the British foreign service's agents George Danton and Marat, nothing but dionysiac terrorists, whose devilish religious doctrine was the pure sadism of "Destroy the existing society." Other professed Communists were nation-builders. Also, most professed Soviet Communists were Russians, who made the best of the situation in which they found themselves and their nation, under Soviet rule. The latter spirit is manifest in those members of Russia's Academy of Science, and like-minded other veterans of the departed state-rule, who seek to rebuild a shattered, post-Communist Russia today, with the same loving patriotic devotion to meeting "the test of death" which they expressed as citizens serving under Soviet rule.

Thus, as V.I. Lenin might have said, had he lived to experience the present circumstance of the passing of the Soviet system: "Don't throw out the baby with the bath-water."

The principled flaw of the Soviet economic system, was certainly not the fact that the development of production was under the rule of a purpose.

All of the worthy acts of mankind, in every society, whether in art or science, in production of goods, in law-making, or political-economy, are always the fruit of an intent, a goal. In all creative acts of the individual mind, nothing occurs without foresight, nor without some reasonable approximation of a plan. Without intent, why should anyone attempt to find a principled solution for a paradox? In production, no general improvement in product or process occurs except through a process of planning and related preparations, such as phases of construction, which may require several or more years before the first end-product of that effort is produced.

As in Classical musical composition, until the composer has foreseen the outcome of the completed composition, the first notes of that composition can not be selected and defined effectively enough to be performed. The nature of the human mind, is purpose, to arrange the practice in the present to efficiently ensure a foreseeable kind of future result. Without acting in such a manner, that we select our actions in the present, under the control of future goals, there is no science, no *agapē*, no *Reason*, and no morality.

The Central Flaw To Be Addressed

The problem of the Soviet system was, on principle, the same pervasive error which dominates virtually every economics teaching provided by virtually every university in the world today. In the Soviet case, the problem was typified by Karl Marx's report, that he had left technological progress out of account in constructing a deterministic image of extended

reproduction. This error was not original to Marx; it is the characteristic blunder of every economist whose work Marx studied in the British Museum reading-room, at the direction of the British Foreign Service's David Urquhart. It is the characteristic fundamental folly of virtually every academic economist, and accountant, in the world today. It is the presumption that the labor of productive operatives is just another commodity, within the linear put-and-take of expenses and income.

The essence of economic science, is that it is the unique power of the human species, to increase man's power over nature through development and exercise of the axiomatically anti-linear, agapic power of Reason. It is that activity of the human individual, as operative within and without the point of production, which is the sole source of the productive powers of labor. It is that activity, and no other, which enables mankind to increase the per-capita energy of the system of the whole economic process, while maintaining, or increasing the ratio of the free-energy margin to the energy of the system.

This principle is also key to the essential role of the industrial and machine-tool entrepreneur within the model of modern agro-industrial society known as *The American System of political-economy*. Herein lies the key to a crucial fallacy within the Soviet system.

Exemplary of the point, is the case of the ownership of the "strategic" machine-tool firm.³⁷ Typically, the ownership is represented by scientists or engineers, or both, who transform the existing array of new and carried-forward principles of nature into new designs of products and processes. This requires a management free to place itself at risk, on the basis of confidence in the scientific and related insights which could be developed only within the sovereign confines of an individual mind.

The same principle applies, if somewhat less dramatically, for the case of the entrepreneurial ownership of a modern farm, or other industry, outside the "strategic" machine-tool sector.

The same principle cannot be applied to the same effect for the case of large-scale infrastructural development. The development of infrastructure touches the quality of preparation of entire political areas, beyond the provenance, or immediate concern of privately owned enterprises. The development of national transportation grids, power grids, like the maintenance of national defense, are matters in which decisions must be in conformity with the interest of the nation as an indivisible unity; these are not matters whose policy-shaping can be left to a more or less anarchic aggregation of private ownerships.

Similarly, only the nation-state can ensure the quality of education needed for the labor-force as a whole, or can ensure that scientific progress keeps well ahead of the time when its fruits

³⁷ Lothar Komp, "The Era of Deindustrialization Has Now Reached Its Dead End," *EIR*, February 7, 1997.

would become profitable, or even indispensable. Only the state can ensure that combined private and public efforts result in an equitable quality of health-care available to all.

Without the modern European model of sovereign nation-state economy, humanity would not have risen much above the conditions of life during Europe's Fourteenth Century.

Without the sovereign nation-state economy, the conditions of life throughout this planet would now, soon, quickly fall, for generations to come, to Fourteenth-Century levels, or, perhaps much lower. Without the incorporation of the "trump cards" of Russia's revival into the global equation, the possibility of reversing of the recent thirty years devolution in world economy is perhaps existent, but poor.