MATHEMATICS & MEASUREMENT

Science vs. Ideology

by Lyndon H. LaRouche, Jr.

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A literate secondary-school graduate, as defined by Alexander Dallas Bache's standards for education,[1] would have had the skills required to show, that, since 1971, the U.S.A.'s per-capita physical output and (physical) standard of living, per-capita, have been in an accelerating spiral of general, physical-economic contraction.[2] **EIR** has repeatedly documented the facts which prove that this contraction has occurred; the proofs are elementary in form, and the facts are conclusive. Nonetheless, around the world, up to the moment this is being written, most among today's governments appear either to believe, or to pretend to believe, that a U.S. economy which has been shrinking without interruption for more than a quarter-century, has been growing!

The question is: How did it happen, that, in the U.S.A., in particular, so many among government officials, and others, have been misled into supporting those policies which have ruined the U.S. economy during the course of the recent quarter-century? Was their self-delusion the result of wishful thinking? In part, the answer is, "Yes." However, stock brokers' and others' wishful fantasies put to one side, the methods of calculation used to support those ruinous policies, for both general forecasting and national-income accounting, have been consistently absurd. How could a once-literate U.S. population have miscalculated so badly?

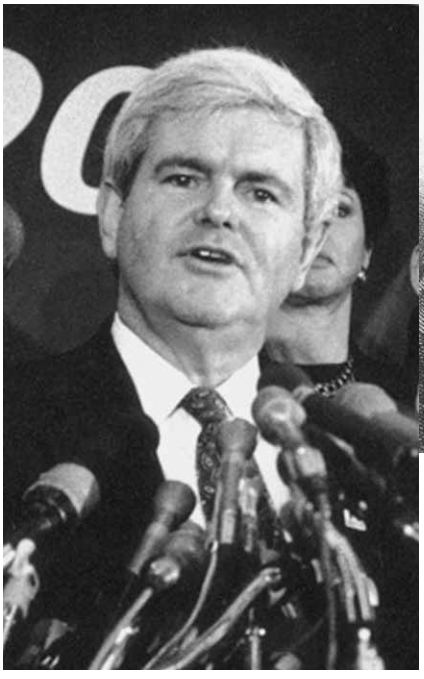
"Calculation" is the word we emphasize in this report. The essence of the problem, as we shall show here, is that our government and Wall Street, to name but two relevant cases, have chosen a kind of mathematics which is intrinsically absurd when applied to economic analysis. What may appear to work quite neatly for ordinary mechanical engineering, for example, is incompetent for addressing economic processes, or other subjects in which the principles of life as such, or of human cognitive behavior, are the determining, or, in Leibniz's usage, *characteristic* form of action through which the ultimate outcome of the process is shaped.

Even if most of today's policy-shapers lacked knowledge of the relevant issues of mathematics, there was no excuse, even by relatively unsophisticated standards of reasoning, for the blundering miscalculations by means of which the present crisis was generated. By any reasonable physical standard, engineering or other, the figures of those policy-shapers simply do not add up.

For example, today, we have the typical fanatics encountered among the monetarists of Wall Street and Washington, D.C. These fellows insist, still today, that there are wonderful benefits to be obtained from that NAFTA program against which former GM stockholder Ross Perot warned nationwide television audiences back in 1994, when he spoke of "that great sucking sound." Perot then pointed, prophetically, to such present effects of NAFTA as the continuing collapse of levels of production and employment in the U.S., as a result of the export of U.S. jobs into virtual slave-labor camps in filthy slums located just south of our Mexico border. His case was presented quite simply and accurately, using facts with which no honest and sane person

1. The U.S. standards for modern secondary education were set by Benjamin Franklin's great-grandson, West Point graduate and scientific collaborator of Germany's Alexander von Humboldt, Alexander Dallas Bache, in his model program for Philadelphia. See, Anton Chaitkin, "Humboldt in America," **Executive Intelligence Review**, June 26, 1998, p. 25.

2. Admittedly, such literacy is rare these days. The point is, that an adolescent who had been given a fair chance at a decent, Classical education, would have such skills. Hence, my point is: such competence is within the reach of a typical adolescent, provided that adolescent had been provided a decent education and matching cultural environment.



"Third Wave" cultists (left to right) Newt Gingrich, François Quesnay, and Alvin Toffler. Quesnay's doctrine that "bounty" inheres in the feudalist form of property title to the land, forms the kernel of what became Gingrich's "Contract on America" manifesto.

could disagree today. Similarly, glassy-eyed advocates of "globalization," insist on defending the delusion, that the present, ever-deeper lowering of average physical-economic output per-capita, globally, must be continued, as a general benefit to not only the U.S., but also the world economy. Apparently, such advocates have not mastered even the simplest operations of addition and subtraction.

The fact that, even after the catastrophes of the recent six years, such follies as NAFTA, "free trade," and "globalization," are presently still tolerated opinions in Washington's policy-shaping, is more than sufficient proof, that something is very wrong in what passes for the economic calculations of the majority among today's policy-shapers. Thus, blind faith in mere financial-accounting practice persists, despite the recent twelve months' stunning accumulation of contrary evidence. This takes us beyond the apparent inability of Perot's critics to add and subtract; it reflects two deeper problems, which are the timely subject of this report.

The first, simpler, more immediate of the latter two problems, is, that the stubbornly persisting miscalculations in the economics reports of our government, Federal Reserve Chairman Alan Greenspan, and most other so-called "financial experts," reflect a broader, quarter-century's collapse in the levels of rationality, at nearly all levels of the population. As each older generation has been replaced by generations newly entering adolescence and adulthood, the incompetence of the policy-makers and credulities of the population have reached new depths of irrationality. As I have pointed out recently, this collapse of rationality, in turn, correlates with a continuing down-shift in the composition of employment, away from productive modes of employment, into more or less parasitical, and, therefore, increasingly irrational modes of so-called "services" occupations, such as employment in "financial" and other usually doubtful qualities of "services" employment.[3]

The fact that such a continuing, quarter-century trend, away from productive forms of employment, has been tolerated to the extent it has during the recent quarter century, reflects the deeper, more long-standing problem addressed in this report. If one looks more closely at the evidence, an ominous shortfall in the intellectual development of our population, was already

3. Lyndon H. LaRouche, Jr., "The Eagle Star Syndrome," **Executive Intelligence Review**, August 7, 1998.

taking over the majority of even the presumably literate rations of our population, even prior to the 1964-1972 down-shift into "post-industrial" utopianism. Prior to the assassination of President John F. Kennedy, the problem was, admittedly, marginal, relative to the disastrous situation today; but the intellectual seeds of future economic disaster had already been planted.

Evidence such as comparative studies of the popular literature, entertainment, textbooks, and public policy-debates of the U.S., sampled from a succession of various intervals since the beginning of this century, points toward a leading contributing cause for the problem. In most departments of learning and popular discourse, for example, a relative degeneration of standards of education and literacy was already in progress during the first half of this century, and up through the time of the Kennedy Presidency. By the standard of content-analysis applied to the congressional and comparable oratory since the period of President Franklin Roosevelt's terms in office, a growing ration among today's elected and party officials, such as Speaker Newton Gingrich, are virtually incoherent ranters, of a type which is usually incapable of addressing an important issue honestly and rationally.

Admittedly, the disintegration of public education systems, worsened by that irrationality and illiteracy which has become typical of the popular mass media, has been a factor in this moral decay of the population. The cultural rot shown by audiences' toleration for the decadence of the most popular, most influential of the mass-circulation news and entertainment media, reflects the process of ongoing general collapse of the level of rationality of the population, not only during the recent thirty years, but over the course of the century.[4] A partial exception to this long-standing prevalence of erosion in our national intellectual life, is to be found in so-called "hard science" and engineering from the decades prior to the Kennedy assassination. That noted, with few, and diminishing exceptions, the post-World War II "liberal arts" programs of public school and university education, were predominantly a sham.

Ask, then: What was the reason for this apparently paradoxical contrast between increasingly frivolous "liberal arts" curricula, and a contrasting, continued level of relative competence in scientific and engineering curricula? Why is it, that, despite the half-century or so of intellectual decay in most departments of learning, prior to the 1964-1972 eruption of post-industrial utopianism, a kernel of competence persisted in the area of so-called "hard science" and engineering?

The more obvious answer to that question is, that the cause for that difference in quality of intellectual life between the two categories, was chiefly political. As long as physical-economic and related considerations of national strategic economic security, remained the one department in which education and practice were conducted with serious attempts at competence, self-respecting forms of intellectual life were concentrated, chiefly, in the mathematical-physical, and closely related disciplines.[5]

To account for the suddenness of that collapse of rationality in our nation's policy-shaping processes, which erupted among university populations during the 1964-1972 interval, we must focus upon certain defects in scientific curricula from earlier times, defects which were usually either overlooked, or merely shrugged aside, in the saner times before the Kennedy assassination. The irrationality we suffered during 1964-1972 and later, was already developing, like a fungus, even

4. Exemplary is the science policy of the **New York Times**. Notable are the **Times**'s opposition to Thomas Edison's development of the light bulb, its insistence that the Wright Brothers' experiments should be stopped, and its insistence that Professor Goddard's rockets could never reach beyond the Earth's atmosphere. The pro-Confederacy tradition of the family ownership of the **Times** might explain the publisher's kinship to "Fugitive" minds such as those of Robert Penn Warren, John Crowe Ransom, and William Yandell Elliot. The British connections of the House of Morgan also bear on the newspaper's science policy to such effect. Pro-Confederacy traditions aside, what must be taken into account, is that the U.S.A.'s putatively leading, and most influential daily newspaper is received as credible by so broad, so plainly corrupted a popular audience.

5. Apart from the mathematical-physical and related sciences, the only important niche of rationality was found in the rapidly declining areas of study and performance of those Classical art-forms of poetry, drama, music, and plastic arts which traced their roots explicitly from Classical Greece, especially the exemplary traditions of Homer, Aeschylus, and Plato. Whatever degree of sanity and decency remained in popular art-forms, was rapidly wiped out by the onset and aftermath of the 1964-1972 rampage of the "rock-drug-sex youth-counterculture." The same pattern showed increasingly, during the 1950s and 1960s, in the frequent case a competent production management's efforts were ruined by the incompetence characteristic of the outside influences usually conveyed through the financial-accounting side of the management. Typical of the latter disparity, was the popularization of the lunatic doctrine of "value engineering," promoted through relevant Wall Street propaganda-channels, as early as the late 1950s. The latter doctrine could have been promoted by illiterates who had not laughed heartily at Oliver Wendell Holmes' famous spoof, "The Deacon's One-Horse Shay" ("Built to last for a year and a day").

within those aspects of our nation's pre-1964 intellectual life, such as "hard science," in which *we, otherwise, had still enjoyed that degree of popular rationality of our citizenry which was consistent with our nation's continuing advances in productive forms of employment.* For the purposes of this report, our attention is focussed upon the continuing, pernicious influence of that specific kind of intellectual "fungus" which already polluted the mathematical-physical disciplines during the decades preceding the 1964-1972 eruption of the cult of "post-industrial" utopia.

Restate the preceding point in the following terms. The relevant flaw in those tainted aspects of pre-1964 forms of mathematical-physics and related education, is that specific taint of corruption in pre-1964 scientific education and practice, which prepared our nation—especially its university graduates of the years after 1963—to tolerate the 1964-1972 downshift of productivity, and, thus, to acclimate ourselves as a people, increasingly, to the consequent, subsequent descent, into the "Clockwork Orange" nightmare of "post-industrial" utopianism.

After we have addressed here the key technical error, that of "linearization in the small," which was tolerated within pre-1964 "hard science" education, we shall turn then to the second of the two deeper problems, the deeper, social basis for that disorder. We must focus then upon the origins of the still deeper, literally *axiomatic* implications of that same gradual loss of rationality which took hold during the decades prior to the 1964-1972 "cultural-paradigm shift."[6]

We shall show here, that *every relevant error in the mathematical argument used to defend today's generally accepted economics dogma, is to be traced to relevant defects within those same mathematical methods which were generally accepted in most universities during most of this century, up through the end of the 1960s.* In that, in sum, lies the crux of the problem upon which we focus in this report.

What in Hell Happened with Newton

For example, since the closing months of 1987, the world has watched, with horrid fascination, as the supposed "wonder economy" of recent decades, Japan, destroyed itself before the anxious eyes of officials such as U.S. Treasury Secretary Robert Rubin.

As we have watched this catastrophe unfolding, we have been confronted with the shameful fact, that Japan's post-war reconstruction and later, brilliant industrial progress, prior to the second half of the mid-1970s, had been replaced by the rising influence of a monetarist's gambling mania which is as wild, or even wilder than John Law's famous bubble.[7]

We must recognize the specific quality of lunacy which has lately taken over leading financial circles in Japan, and also a large part of the U.S. population, especially since the combination of the "Plaza Accords"[8] and the October 1987 U.S. stock-market crash. This madness is an echo of the same insanity as the Dutch tulip craze of the Sixteenth Century,[9] or that "Pyramid Club" craze which duped a significant portion of the U.S. population at the close of the 1940s;[10] it is a quality of madness which should remind us of the moral de-

6. For all practical purposes, "rock-drug-sex counterculture," "post-industrial utopianism," and such dionysiac corruption as the influence of Georg Lukacs and the so-called "Frankfurt School," should be taken as a single, common phenomenon.

7. The John Law bubble, also known as the Mississippi bubble, bankrupted France in the 1720s. It was based on a swindle by Scottish gambler John Law, who eventually became the Comptroller General of France. His Mississippi Company was set up in 1717 to sell shares of the Louisiana Territories to the French public, as buyers were told that the Territories were filled with gold, silver, and other natural wealth, and that they would make millions (the promised loot from Louisiana never materialized). A speculative fever took hold, and by December 1719, the original shares were trading at 40 times their original value. But, during that winter, the wealthiest speculators pulled out of the market, and the company collapsed, bringing the investors down with it.

8. At a meeting in New York's Plaza Hotel in September 1985, the Group of Seven finance ministers agreed to lower the value of the dollar against other currencies. Within a short period, the dollar fell by 30% against the yen; by 1988, the yen had risen 86% against the dollar, helping to create a "bubble economy" in Japan.

9. Tulips arrived in the Netherlands from Turkey in 1593, and soon became the subject of a speculative explosion; the bulbs were never planted, and were never even seen by their purchasers, since sales took place by contract. Prices reached staggering heights by late 1636 and early 1637, but in February 1637, the collapse was on, and thousands of investors were bankrupted.

10. Pyramid Club mania swept the United States in 1949, making headlines in **Time** magazine, and other popular journals. In reviewing 1949, in its 1940-1950 volume of **The Fabulous Century** (Time-Life Books, 1987), Time, Inc. runs a reprise of the fad, with a **Los Angeles Herald-Examiner** photo of a California winner, waving fistfuls of money. "Mrs. Clyde grabs the loot she has won in a Pyramid Club. A craze in 1949, the clubs required members to pay, say, one dollar each, and recruit two others at a dollar a head. After 12 days a member theoretically won $2,048—but most clubs folded because of the decreasing mathematical probability of finding new members."

The same sophistry, "See, you can't lose in this game," which was the selling-point for the spread of the Pyramid Club mania, was the argument made to sell the "futures" swindle to those duped into the "derivatives" mania.

Rembrandt van Rijn, "Belshazzar Sees the Handwriting on the Wall" (c. 1636).

pravity which was characteristic of Georgian England from the time of the South Sea Island and John Law bubbles, the depravity which Hogarth depicts in his **The Rake's Progress**.

Industrial Japan has been ruined, through a takeover of the nation's financial markets and key party leadership, by a present generation of prodigal sons: those pampered, "Third Wave" wastrels, whose wild miscalculations relied upon the so-called "artificial intelligence" provided by aid of the combination of a "handi," an Internet connection, and a personal hand-held calculator.

What menaces us today, is far worse than some passing, crazy fad. The madness in the eyes of these young monetarist fanatics of Japan (and elsewhere) should remind us, ominously, of Europe's rampaging hordes of Fourteenth-Century Flagellants.[11] This younger generation, in Japan, and also elsewhere, typifies a ruling stratum, like Babylon's Belshazzar, whose role today is that of a caste which lacks the moral fitness to survive. Such a political class, in Japan, or elsewhere, will not survive; either it will be soon swept aside, and replaced, or the existing economies as we have known them, will be plunged into a global spiral of self-disintegration.

This madness which has taken over today's Japan, should be seen as an ugly warning to the monetarist tycoons of Wall Street and London. No economy can run forever on the fictitious wealth represented by an outpouring of depreciating paper in the form of those recklessly inflated "Monopoly" dollars which flood the attempts to bail out a bottomless world financial system.[12] There is little relevant difference between the combined performance, since 1979, of Federal Reserve Chairmen Paul Volcker and Alan Greenspan, and that of those German money-managers of 1921-1923 who, earlier, wiped out a national currency, their own, in the famous Weimar hyperinflation of 1923. "Buy 'Boardwalk,' anyone?"

What kind of mathematical ideology has led most of the world's governments and financial institutions to miscalculate so tragically? To answer this question, we should focus our attention, first, upon what passes for mathematical skills among those pitiable creatures of Japan and Wall Street who follow in the footsteps of Bertrand Russell, Norbert Wiener, and John von Neu-

11. William F. Wertz, Jr., "The Lessons of the 14th-Century Dark Age," **The New Federalist,** June 29, 1998, pp. 5-8.

12. Admittedly, the collapse of Russia's financial and monetary system is an awful development, especially for western Europe, notably for a Germany which is Russia's most important creditor. However, the crisis of Japan is far worse than the Russia case, for the world at large. Russia is a victim of the reform which was imposed upon it from outside. Japan typifies the rot at the core of the IMF system. The estimated $1.5 trillions bankruptcy of Japan, is linked directly, chain-reaction fashion, like a detonator, to an approximately $140 trillions "derivatives" bubble in the world's financial system as a whole. Thus, the chain-reaction effects of a Japan collapse will rip through the world's dominant financial and monetary institutions in a way which is far more significant than the collapse of Russia's present financial system. Hence, our emphasis on the case of Japan, here.

Indonesian currency traders, 1998. "What menaces us today, is far worse than some passing, crazy fad," LaRouche writes. The younger generation in Japan, and elsewhere, typifies a ruling stratum, likeBabylon's Belshazzar, "whose role today is that of a caste which lacks the moral fitness to survive."

mann: that pathological, "Third Wave" style in mathematical thinking, which dominates the circles presently engaged in bankrupting the world's present global financial and monetary systems. That lunatic variety of mathematics represents the more obvious cases; but, as we have already stressed, to discover the corruption which led to Wall Street's tolerance for John von Neumann's "chaos theory" and similar cults, we must focus upon the susceptibility which is the outgrowth of a certain aspect of a certain, centuries-long current of modern European thinking about mathematics.

To begin, trace the modern history of this problem, as follows. Begin with the case of Newton: not only "Third Wave" freaks such as Alvin Toffler and House Speaker Newton Gingrich, but, also, Sir Isaac Newton. First, as we have already emphasized, recognize the degree to which the pathological element in today's popular opinion about mathematics and economics, is at the center of the policy-making responsible for the presently accelerating, terminal process of disintegration of the world's economy. Then, after that, as we have promised, look at the same problem on a deeper level.

It is within the reach of any among that same, presently vanishing species of literate secondary-school graduates to which we referred at the outset, to reconstruct the crucial proof, that Sir Isaac Newton's formulation of a mechanistic notion of so-called "action at a distance," was a hoax, nothing more than a dubious parody of Johannes Kepler's earlier discovery of the principled characteristics of orbital motion within our solar system.[13]

Equally significant, ask this. After Carl Gauss demonstrated conclusively, by the case of Ceres, that Kepler had been correct, and Newton's method intrinsically wrong, why did the influence of Newton's followers remain *politically* hegemonic in most of both the English-speaking and positivist currents of Nineteenth-and Twentieth-Century secondary and university education world-wide? Add to those questions, the following qualification, of direct bearing on the subject of the present report. What is the relevance of the mathematical method expressed by such toleration for Newton's elementary error, to the widespread miscalculations underlying the presently ongoing disintegration of the world's financial and monetary systems?

To pick up the threads of the Newton hoax—and, it was a willful hoax,[14] trace European civilization's history of mathematics since Plato's Athens of the early to middle Fourth Century B.C., as Plato and his associates reflected on mathematical paradoxes already identified by the earlier work of Pythagoras on such topics as mu-

13. Johannes Kepler, **The New Astronomy**, translated by William Donahue (Cambridge, U.K.: Cambridge University Press, 1992), and **The Harmony of the World by Johannes Kepler**, translated by E.J. Aiton, A.M. Duncan, and J.V. Field (Philadelphia: American Philosophical Society, 1997). Also, see Jonathan Tennenbaum and Bruce Director, "How Gauss Determined the Orbit of Ceres," **Fidelio**, Summer 1998.

14. See below on the influence of Venice's Paolo Sarpi in creating and shaping the establishment of Seventeenth-Century English empiricism. Also notable, in the perpetuation of the Newton hoax, was the role of another Venice agent, the same Paris-based Abbot Antonio Conti who became, in fact, the "Josef Goebbels" of the Newton myth.

sical tuning and the existence of what we call "irrational numbers." We shall indicate why those specific topics are of exemplary relevance for understanding the leading problems of mathematical economics today.

From Plato's time, onward, the foundations of modern European civilization have developed around a debate between two classes of opinion bearing upon the subject of mathematics. The one is represented by the followers of Plato and his Academy of Athens; the opposing faction is represented by those commonly classed as "the reductionists." In academic circles, the reductionists of Classical and Medieval times, are usually recognized by such names as Eleatics, materialists, sophists, and Aristotle. It is the common fallacy of the method used by each and all of the second group, the reductionists, which is key to the mathematical aspects of the policies responsible for today's onrushing, global financial collapse. For convenience, let us call the first faction, Plato and his followers, *the physicists*, and the latter, Aristotle, et al., *the nominalists*.[15]

Identify the issue in the modern history of mathematics in the following way. Pose the question: Why is it, that although Newton's notions of universal gravitation are algebraic parodies of the earlier work of Kepler, Gauss's work showed why Kepler's original approach, that of Leibniz's calculus, works, whereas Newton's does not?[16] Where lies the source of that difference?[17] The solution to that apparent Kepler-Newton paradox, takes us to the core of the issues of mathematical economics today.

What Should We Measure?

Logical positivists, including such devotees of Bertrand Russell as Norbert Wiener and John von Neumann,[18] insist that the system of mathematics, and therefore also mathematical physics, must be reduced to the elaboration of a set of simple, *a priori* assumptions, including those respecting space, time, and magnitude.[19] Deductive consistency with such *a priori* design, demands, that the elementary connections linking the successive stages of any action occurring within that system, must be considered to be linear, as Newton presumed, and as did Leonhard Euler and Augustin Cauchy.[20] Those are the essential, false, reductionist assumptions, which underlie the mathematical methods commonly employed by financial accountants, and others, ploughing the fields of economic analysis and forecasting today. That set of false assumptions, merely typified by the case of Bertrand Russell, et al., is key to understanding the intrinsic incompetence of all heretofore generally taught methods of economic analysis and forecasting.

Since the work of Plato, notably including his **Timaeus**, the current of physical science leading through Nicolaus of Cusa, Leonardo da Vinci, Kepler, Leibniz, and Gauss, has divided natural phenomena into two general classes. Cusa, and these followers of his founding of modern experimental physical science, insisted that the differences between the two general classes, are defined by *measurement*, rather than by the deductive methods associated with *a priori* hypothesis. Kepler, following Plato, Cusa, Luca Pacioli, and Leonardo da Vinci, assorted the general classes of phenomena between those whose characteristic action is consistent

15. On the significance of emphasizing Plato's role as a physicist, see our references to Bernhard Riemann's 1854 habilitation dissertation (*Über die Hypothesen, welche der Geometrie zu Grunde liegen*, **Bernhard Riemanns Gesammelte Mathematische Werke**, H. Weber, ed. [New York: Dover Publications reprint edition, 1953]). *Nominalist*, as used by me, here, emphasizes the reductionists' axiomatic reliance upon formalism, such as that of Aristotle and his followers, or the Okhamite followers of Paolo Sarpi and Antonio Conti.

16. As Leibniz explained the issues, in his attacks upon Descartes, and then Newton, what Newton tacked onto a later edition of his writings, was not a calculus at all. Indeed, today's textbook calculus is largely the work of Augustin Cauchy, who replaced Newton with a castrated version of the Leibniz calculus, a version from which Leibniz's principle of the infinitesimal of non-constant curvature had been eliminated (by the notorious "Cauchy fraction"). From a formal standpoint, the history of the calculus begins with the work of Kepler, especially Kepler's discoveries stemming from treatment of the implications of the elliptical orbit of Mars. Kepler's pioneering approaches, as developed, chiefly, by Leibniz, and then as the hypergeometry (e.g., modular, multiply-connected functions) of Gauss and Riemann, focus upon the crucial role of characteristics expressed as non-constant curvature in the infinitesimally small, excluding the Newton-Euler-Cauchy hoax, of axiomatically presumed linearity in the infinitesimally small.

17. Obviously, if that question is not posed, the answer will not be sought; in that case, it were not likely that the unsought answer would be found.

18. Aristotle Society devotee Russell emphasized that he recognized no functional difference between his self-identification as a "radical empiricist" and the logical positivism of continentals such as the circles of Ernst Mach.

19. e.g., Alfred N. Whitehead and Bertrand Russell, **Principia Mathematica** (Cambridge, U.K.: Cambridge University Press, 1994, reprint of 1927 edition).

20. Euler committed a celebrated fraud, in which he purported to prove a principle of simple, linear continuity, by deriving this, as a theorem, from a form of geometry which already had the same theorem embedded within it, *a priori,* as an axiom of the system. Cauchy's fraction, which carried Euler's fraudulent assumption over into a deformation of the Leibniz calculus, has the same character and implications.

with the implications of the Golden Section,[21] and those lower species of existence whose characteristics were not consistent with this standard.[22] Since the Nineteenth Century, we have assigned the term "entropy," to the lower species of existence; the term I use, anti-entropy, to avoid the recent decades' popular corruption of the term "negentropy,"[23] typifies that superior type, so identified by Pacioli, Leonardo, and Kepler.

The layman should not be put off by my unavoidable reference to certain historical-technical matters here. The highly practical—indeed, life-or-death—implications of this crucial technical point will be made clear soon enough.

There are three types of phenomena which meet the Plato-Kepler standard for processes of anti-entropic *characteristics* in the infinitesimally small: living processes generally, human cognition, and, as Kepler emphasized, the lawful ordering which is the underlying characteristic of the universe as a whole. In turn, the modern comprehension of such distinctions in characteristics, as extended into the infinitesimal, was continued beyond Kepler, by Leibniz. Leibniz's treatment of this matter was centered in his addresses to the topic of *non-constant curvature in the infinitesimally small*, and to the related topic of *analysis situs*. This Kepler-Leibniz development of the notion of multiply-connected manifolds, was brought to a relative degree of mathematical perfection by the work of Carl Gauss in founding what became known under the rubrics of *modular*, or *hypergeometric functions*.[24] This was featured as part of the same topic in Bernhard Riemann's treatment of hypergeometric functions,[25] and his related addresses to the topic of Leibniz's notion of *analysis situs*.[26] My own original discoveries in the field of mathematical economics rely, inclusively, on the implications of Riemann's discoveries.

Riemann's role in clarifying the mathematical-physics issues, was crucial for all modern science, including any competent form of mathematical economics. Although his solution to the problem was an original work of genius, that in the strictest sense, the problem he addresses, and largely solves in his 1854 habilitation dissertation, is an issue as old as Plato's work.[27] That problem, so situated historically, is key for solving the problem which is the subject of this report, a solution on which the continued existence of the present world civilization may depend, even in the short term.

The formalists, including such followers of Aristotle as the Immanuel Kant of his famous *Critiques*, assume the self-evident existence of certain axioms, without any proof other than so-called "intuition." These include, for example, the axioms of the usual classroom and textbook varieties of Euclidean geometry. Through mistaking deduction for rationality, as Aristotle and Immanuel Kant do, these formalists build their system around a deductive notion of *extension*, such as Newton's "action at a distance." For Newton, as for Hobbes, Locke, Mandeville, David Hume, Adam Smith, Jeremy Bentham, Leonhard Euler, Laplace, Augustin Cauchy, and other philosophical nominalists, extension is implicitly presumed, by intuition, to be linear, especially in the infinitesimally small.[28]

21. e.g., the implications of the five Platonic solids.

22. Johannes Kepler, "The Six-Cornered Snowflake," translated by Colin Hardie (Oxford: Oxford University Press, 1966).

23. By the influence of Norbert Wiener's cult of "information theory."

24. See, Tennenbaum and Director, op. cit.

25. e.g., on the subject Abelian functions and hypergeometric functions otherwise.

26. Bernhard Riemann, *Theorie der Abel'schen Function Lehrsätze aus der Analysis Situs für die Theorie der Integrale von zweigliedrigen vollstaendigen Differentiallen,* in **Bernhard Riemanns Gesammelte Mathematische Werke**, H. Weber, ed. (New York: Dover Publications reprint edition, 1953). A partial English translation can be found under the title, *Riemann's Surfaces and Analysis Situs,* in David Eugene Smith, ed., **Source Book in Mathematics** (New York: Dover Publications, 1959).

27. "It is well known that geometry presupposes not only the concept of space but also the first fundamental notions for constructions in space as given in advance. It gives only nominal definitions for them, while the essential means of determining them appear in the form of axioms. The relation of these presuppositions is left in the dark; one sees neither whether and in how far their connection is necessary, nor *a priori* whether it is possible.

"From Euclid to Legendre, to name the most renowned of modern writers on geometry, this darkness has been lifted neither by the mathematicians nor by the philosophers who have labored upon it. The reason of this lay perhaps in the fact that the general concept of multiply extended magnitudes, in which spatial magnitudes are comprehended, has not been elaborated at all. Accordingly I have proposed to myself at first the problem of constructing the concept of a multiply extended magnitude out of general notions of quantity." Bernhard Riemann, *On the Hypotheses Which Lie at the Foundations of Geometry,* translated by Henry S. White, in David Eugene Smith, ed., **A Source Book in Mathematics** (New York: Dover Publications, 1959), p. 411.

28. While Aristotle was already implicitly a nominalist, that appellation must be applied with special force to the cases of the British empiricists and continental Cartesians and positivists. Modern empiricism, and positivism after it, was established by the influential Venetian Paolo Sarpi, a revision of Aristotle's method which Sarpi based explicitly on the model of the medieval obscurantist William of Ockham (of "Occam's Razor" notoriety). The form of empiricism and positivism popularized during the Eighteenth and Nineteenth Centuries, was a product

What the formalists do, is to view the mathematical physics which they have come to adopt (up to each relevant present moment of their work) as a formal mathematical system of the reductionist type indicated (e.g., Aristotelean). *With only a few exceptional cases, which are of virtually no relevance to our discussion here, the mathematical systems of the formalists are each based upon the common assumption of Newton, Euler, Cauchy, Clausius, Bertrand Russell, John von Neumann, et al.: the deductive assumption that extension is, to all practical intent, "linear in the infinitesimally small."* From Aristotle, through Hobbes and Immanuel Kant and Cauchy, that typically reductionist assumption, of "linearity in the infinitesimally small," implies, mathematically, that the universe as a whole is governed by a principle of universal entropy. For that specific reason, anything which a reductionist, such as a financial accountant, says about the subjects of human behavior, living processes, or the universe in general, is, at its very best, axiomatically false.

Gauss' discovery of the orbit of Ceres presents a crucial demonstration of this point; the distinguishing characteristics of processes, for the purposes of a calculus, are located precisely in those facts which members of Conti's salons, such as Berlin's Leonhard Euler, insisted do not exist. These characteristics are located, precisely, within the non-linearity of the curvature of a process in its infinitesimally smallest interval.[29] In other words, in the typical case, the physical-space-time curvature of the action expressed in the most infinitesimally small, is never, contrary to Euler et al., the reductionist's "straight-line action at a distance." In the real physical universe, as for Carl Gauss, the action expressed in a measurable form, within the infinitesimal interval, has some distinctive curvature, a curvature which echoes the characteristic of the process as a whole.[30]

This, as Plato and Kepler had insisted before Leibniz or Gauss, is precisely the distinction in *characteristic* which sets an anti-entropic process absolutely apart from an entropic one. This is the most crucial feature of the original discovery which Riemann presents in his 1854 habilitation dissertation. *We must never presume to define the characteristic action in a multiply-connected physical-space-time manifold, from an* a priori*, formalist standpoint; such questions must be answered, not in the domain of formalist mathematics, but, rather, belong to the realm of experimental physics.*[31]

Riemann's argument to this effect, was already a crucial argument contained implicitly within Plato's **Timaeus**, and was also a central argument of Kepler's founding of the first comprehensive mathematical physics in his **New Astronomy** and related works. This same distinction, should be recognized as the fundamental theorem of any competent type of mathematical economics. This theorem is key for understanding the intrinsic incompetence of virtually all of the actually or implicitly mathematical analysis and forecasting presented by government and related circles today.

The key principle to be stressed in the remainder of this report, is the following reflection upon the point we have presented immediately above. *To be competent, mathematical-economic analysis must lay the primary emphasis upon measuring the characteristic relative anti-entropy of the economic process considered as a whole.*[32]

The principled form of that measurement must be made in the same general form I have expressed this in my specification for an anti-entropic set of simultaneous inequalities.[33] It is the measurable changes in (Rie-

of the influence of another Venice agent, the leading adversary of Leibniz during Leibniz's lifetime, Paris-based Abbot Antonio Conti. Conti was the founder of what became known as the Eighteenth Century "Enlightenment." Newton was a protégé of Conti, while relevant enemies of Leibniz's work, such as Leonhard Euler, Immanuel Kant, Augustin Cauchy, et al., were members of cult-circles established by Conti during the first half of the Eighteenth Century.

29. Tennenbaum and Director, op. cit.

30. ibid.

31. "This path leads out into the domain of another science, into the realm of physics, into which the nature of this present occasion forbids us to penetrate." Riemann, *On the Hypotheses Which Lie at the Foundations of Geometry,* op. cit., p. 425.

To the degree that one operating manifold of validated physical principles is of a higher cardinality than another, we may conclude that the characteristic of an economy operating on the basis of the higher technology will be greater than that of an economy relying upon the less advanced manifold. However, the exact characteristic must be determined physically, not formally. This does not imply that the physical universe is in some way irrational; it signifies the elementary significance of living in a universe which is a multiply-connected manifold, in which addition of new principles depends upon crucial validation of discoveries by experimental methods.

32. On this point, today, since the popularization of Professor Norbert Wiener's "information theory" hoax, it is strictly necessary to avoid the popularized connotations of use of what Wiener transformed into the cult terms "negative entropy," or "negentropy." Otherwise, ignorant popular opinion among today's academics will nod energetically, saying, "Yes, we must use the H-theorem."

33. Cf. Lyndon H. LaRouche, Jr., "An 'American Century' Seen as a Modular Mathematical Orbit," **Executive Intelligence Review**, July 24, 1998, p. 30.

mannian) relative anti-entropy[34] of the whole process, as expressed in per-capita and per-square-kilometer terms, which defines the relative characteristic distinguishing a relatively more successful stage of economic development, from a relatively poorer one. This must be defined, and measured, in Riemann's sense of a physical, rather than aprioristic characteristic.[35]

Hobbes, Quesnay, and Smith

Presently, virtually all professional economics taught in our universities, is premised upon blind faith in those nominalist assumptions which were introduced, as empiricism, to the England of the Venice-linked Cecil family, by the agents and other followers of Venice's then-ruling figure of the post-1582 period, Paolo Sarpi. After Sarpi, these influences evolved into those forms of the British and French "Enlightenment" associated with the followers and associates of Venice's later, Paris-based spy-master, and most virulent Leibniz-hater, Abbot Antonio Conti. Notable in these connections, are Sarpi's personal lackey, the notorious Galileo Galilei, Sarpi's agent Sir Francis Bacon, Galileo's mathematics student and Bacon intimate Thomas Hobbes, John Locke, Bernard Mandeville, Physiocrat Dr. François Quesnay, Adam Smith, and the first head of the British Foreign Service, Jeremy Bentham. The essential features of that empiricist view are as I have outlined the principles of the empiricist form of reductionist method, here above.

Hobbes, for example, defines society as, virtually, a mass of percussively interacting, irregularly-shaped billiard balls. The varieties of elasticity and "spin" supplied to the individual interactions are presumed to be variants upon the theme of "The Seven Deadly Sins." If one knows the relevant axiomatic characteristics of mathematical thinking which "Leporello"-like Galileo adopted directly from the instructions of his master Sarpi, there is no doubt that we must emphasize the role of empiricist mathematical education in reading the way in which Hobbes' conception of society was formed, as a kind of statistical "gas system," of particles "each in war against all."

The subsequent addition of the naively deductive assumption of "action at a distance," to Hobbes' simply percussive interaction, made the model more complicated, but, for our purposes here, the relevant, axiomatic characteristics are not altered. "Action at a distance" is, in fact, adding "at a distance" as an implicitly included feature in the repertoire of percussive interactions; this addition serves as a ruse for providing the pretense of contextual universality for the system of percussive interactions.

After Hobbes, beginning with John Locke, the English empiricist school of political economy reinterpreted this expanded form of Hobbes' percussive-statistical model as the basis for what became the modern doctrine of "free trade." Like Hobbes, his liberal empiricist successors, Locke, Mandeville, Smith, Bentham, et al., insisted that their "kinetic gas theory" model of society, based upon the model of "The Seven Deadly Sins," was the only "natural" form of the social process, with which alleged tyrants such as France's Jean-Baptiste Colbert (or, Alexander Hamilton, John Quincy Adams, Friedrich List, or President Abraham Lincoln) must not "interfere."

A frankly satanic element, which is axiomatically implicit in the liberals' definition of their "free trade" dogma, was featured frankly in the arguments of the most malicious among liberal empiricists, such as Mandeville, who served as an inspiration for Mont Pelerin Society founder Friedrich von Hayek, and also Jeremy Bentham. For the purposes of our report, the clinical case of the utterly damnable Physiocrat, Dr. François Quesnay, is most interesting for our consideration here.

Quesnay, like the notorious Voltaire, belonged to that Venetian circle which Paris-based Venice spy-master and Abbot Antonio Conti introduced to France. Quesnay was associated with the most corrupt circle infiltrating the court of Louis XV. It was from the writings of Quesnay and of Quesnay's Physiocratic follower and "free trade" advocate, A.R.J. Turgot, that Lord Shelburne's British East India Company agent, Adam Smith, plagiarized the important systematic features of the 1776 **Wealth of Nations**.

The political root of Quesnay's writings, is the most

34. In the LaRouche-Riemann method, three measurements are required. The first, my own original discovery, is expressed by the system of simultaneous inequalities which I counterposed to the arguments of Norbert Wiener and John von Neumann. The second, my own argument, is attributing anti-entropic changes in the characteristic physical-economic productivity of a society to accumulated advances in a combination of valid discoveries of both physical and Classical-artistic principles. The third, is my adoption of Riemann's notion of a multiply-connected manifold as the basis for defining the intellectual matrix which governs the possibility of realized increases in the physical-economic productive powers of labor. For this purpose, *potential relative population-density* of an entire culture, is a term which is virtually interchangeable with "productive powers of labor."

35. ibid.

virulent of the pro-feudalist, anti-nation-state factions in earlier, Seventeenth-Century France, the notorious *Fronde*.

This *Fronde*, early associated with the Anglo-French feudal family of Beaufort, is best known in history for its treasonous military and related enterprises against Cardinal Mazarin, and Mazarin's famous protégé and successor, Minister Jean-Baptiste Colbert. It was Louis XIV's alliance with the *Fronde* faction, over Colbert's opposition to this policy, which plunged France into ruinous wars, Louis XIV playing thus into the hands of the disgusting Duke of Marlborough's Anglo-Dutch financier oligarchy. These wars dominated the late Seventeenth Century and the period of the relatively brief reign of England's Queen Anne. These were the wars through aid of which the butcher William of Orange, and Orange's protégé, George I, were brought to power in England.[36]

Quesnay was among the prominent, pro-*Fronde* propagandists devoted to attempting to eradicate the intellectual influence of Colbert and Leibniz from France. Taking Turgot's influence duly into account, all of Quesnay's work, and Adam Smith's extensive intellectual debts to Quesnay, are to be understood from the standpoint of Venice's influence behind both the *Fronde* and the financier-oligarchy's establishment of the Anglo-Dutch monarchy of Orange and Hannover.

Typically *Frondist*, the principal axiomatic feature of Quesnay's Physiocratic doctrine, is the assertion of a divine right of the feudal landed aristocracy to rule its landed estates free of interference by any central national authority. To this effect, Quesnay insists upon the paganist doctrine, that all wealth originates as the bounty of nature, rather than as the fruit of the intelligence of the human will. Thus, he insists, the "bounty" inheres "naturally" in the feudalist form of property-title to the land, and that that "bounty" belongs, therefore, to the feudal landlord who has received the property title as a divine gift. That is the axiomatic kernel of Quesnay's entire doctrine, especially that pro-feudalist doctrine of *laissez-faire* from which Adam Smith borrowed so liberally on behalf of his own doctrine of "free trade," and from which "Third Wave" cultist Newton Gingrich borrowed the kindred, pitiably contemptible doctrine of his own Jacobin-style "Contract on America" manifesto.

Quesnay's pagan worship of Nature and all things mythically natural, is one of the keys for understanding how the present intellectual, and moral corruption of the United States' government and population has been accomplished. Opposite to pagans such as Quesnay, for the Christian, the most relevant connections are obvious ones: the essence of satanism, such as that of Quesnay's Physiocratic doctrine, is the assertion which counterposes satanic Gaia's Nature, as the enemy, to the Judeo-Christian notion of man and woman as made in the image of the Creator. The connection to be made is the following.

If we accept, as the challenge of the manifest paradox, the proposition that the individual mortal person is made *essentially* as a replica of the Creator of this universe, what is the crucial experimental evidence which enables us to discover a *provable*, validated meaning for those verses from **Genesis** 1? The only proof which satisfies that requirement, is the evidence that mankind increases its power over the universe through realization of validatable discoveries of both physical principle and of those Platonic, Classical-artistic principles properly informing the relations among human individuals.[37]

This supplies unique significance for my own revival and further development of the Leibnizian science of physical economy. The only form in which mankind's increase of our species' lawful power over nature is expressed in both general and rigorous terms, is the same standpoint in physical economy represented, typically, by my anti-entropic set of simultaneous inequalities.

The reciprocal implication of the LaRouche-Riemann Model for *anti-entropic increase of* the potential relative population-density of an entire society, is that the anti-entropic change, for the better, in the implicitly measurable characteristic of that physical economy, expresses the function of individual human cognition in generating those discoveries of combined physical and Classical-artistic principle, from which the anti-entropic change in characteristic is derived.[38] Thus, *the prin-*

36. Cf. H. Graham Lowry, **How the Nation Was Won**, Vol. I (Washington, D.C.: Executive Intelligence Review, 1988).

37. Lyndon H. LaRouche, Jr., "Russia Is Eurasia's Keystone Economy," **Executive Intelligence Review**, March 27, 1998, and "The Substance of Morality," **Executive Intelligence Review**, June 26, 1998.

38. See my following treatments of this subject-matter of the role of interacting discoveries of physical and Classical-artistic principles. "Russia Is Eurasia's Keystone Economy," **Executive Intelligence Review**, March 27, 1998; "The Principles of Long-Range Forecasting," **Executive Intelligence Review**, April 17, 1998; "The Substance of

ciple of action which underlies the anti-entropic characteristic of a successful form of society, is the developable, sovereign, *world-historical* cognitive potential of the individual human personality.

Just as the evolutionary development of the biosphere[39] supersedes the generality of ostensibly non-living processes, so the sovereign cognitive processes inhering in each human individual supersede the generality of non-human processes. To attempt to superimpose the characteristic of non-living processes on the biosphere, is to practice death; to attempt to superimpose characteristically non-human forms of "natural" processes upon mankind, as Quesnay did, and as Britain's heathen, Gaia-worshipping Prince Philip does, is a wildly dionysiac scheme, for imposing a demographic collapse far worse than anything attempted by Adolf Hitler's regime. Quesnay's followers, like Prince Philip, seek to degrade humanity to the population potentials and conditions of life of the wild beasts. Quesnay's doctrine typifies the state of mind we must associate with plainly satanic implications of the pagan worship of "natural nature."

If the anti-entropic development of human society does not come from the anti-entropic action of human cognition, whence could "profit" come? If there is no anti-entropy, then the potential relative population-density of humanity were fixed in the way in which the ecological potential of each among all lower species is relatively fixed. There could be no anti-entropic gain, hence, no "profit" to society as a whole, at least not in the typical U.S. citizen's commonly understood notion of growth of a national economy.

In that case, as for Quesnay and the British East India Company, "profit" occurs only in the form of a tax which landlords, or financier oligarchs, for example, might impose, as parasitical looting, upon those parts of the human population unable to resist such depredations. In fact, Quesnay's "bounty of nature" occurs only as the landlord's bounty from looting of the subjugated social strata: not as a gain to society as a whole, but, rather, as a deduction from the previously existing levels of output of the society as a whole.

Shifting attention away from the landed aristocracy, to Adam Smith's Venetian-style, Anglo-Dutch financier oligarchy, the modern cult of "free trade" replaces Quesnay's "bounty of nature" with a queer assumption of its own. It presumes, as Adam Smith does, that the source of growth of wealth is the random, parasitical (e.g., "cheapest price") interactions of a Hobbesian-like society operating, without interference, according to the statistical principle of "war of each against all." That was the argument underlying John Locke's doctrine of property. That was the explicitly satanic teaching of Bernard Mandeville's **The Fable of the Bees**.[40] That is the doctrine of "free trade" presented by Adam Smith, Jeremy Bentham, John Stuart Mill, et al. Norbert Wiener adopted the same form of argument in presenting his H-theorem argument for his "information theory" hoax.

In short, there never was any rational basis for today's widespread presumption, that "free trade" fosters an increase in wealth; such beliefs were never more than a matter of arbitrary blind faith by Enlightenment paganists such as Quesnay. In fact, as the argument of Clausius, Kelvin, et al. goes, the predetermined result of any characteristic form of economic action which is analogous to "free trade," must be entropy, the degeneration and "heat death" of any system foolish enough to adopt such a policy.

If, as the liberal economists' argument requires, there is no absolute growth in the productive powers of labor, no actual profit, then the increase of per-capita rates of localized, nominal profit, can occur only as it did under the influence of such follies as the U.S.A.'s Garn-St Germain and Kemp-Roth legislation. In these cases, the local profit of some, at the expense of many, assumes a purely immoral, parasitical character, to such effect that a constant rate of profit on the nominal capital so accumulated can occur only by looting the pre-existing economy virtually into the ground.

Thus, to the extent the influence of the East India Company's Haileybury School economists influenced European civilization's practices, the kinds of so-called "business cycles" Marx portrays in Volume III of his **Capital** did recur during the Nineteenth and early Twentieth Centuries. Contrary to Marx, these were not inevitable or natural cycles, were never intrinsic to the form of capitalism represented by the Franklin, Hamilton, List, Carey, American System of Political-Economy. They were strictly by-products of tolerating the

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Morality," **Executive Intelligence Review**, June 26, 1998; "Where Franklin Roosevelt Was Interrupted," **Executive Intelligence Review**, July 17, 1998; "An 'American Century' Seen as a Modular Mathematical Orbit," **Executive Intelligence Review**, July 24, 1998.

39. Vernadsky's *noösphere*, for example.

40. Bernard Mandeville, **The Fable of the Bees, or Private Vices, Public Benefits** (London: 1934, reprint of 1714 edition).

impact of the inherently parasitical British "free trade" system within the realm of international trade and finance.[41] These were by-products, not of capitalism, but of what President Franklin Roosevelt denounced as "British Eighteenth-Century methods."[42]

The worst was yet to come. It came with the Trilateral Commission's disastrous role in destroying the U.S. economy under, especially, President Jimmy Carter and the influence of Vice-President and President George Bush. It is arguable, that the Trilateral Commission, whose policies were packaged, during 1975-1976, as the Cyrus Vance, Zbigniew Brzezinski, Miriam Camp "Project 1980s," has done more damage to the economy and people of European culture, during the past twenty-odd years, than any war since 1648. Beginning the changes in U.S. economic policy during 1966-1967, the U.S. economy was deliberately collapsed, reaching a zero-point about the time of President Richard Nixon's folly in destroying the Bretton Woods system, and replacing it, beginning mid-August 1971, with what quickly became the disastrous "floating exchange-rate system."

To understand the U.S.A.'s position and role in the currently ongoing disintegration of the world's financial and monetary system, we must situate the catastrophes introduced under President Jimmy Carter within the context pre-defined by the preceding, 1971-1974 measures under direction of London's agent of influence Henry A. Kissinger. Most of the damage was already done by the time a discredited President Carter, defeated for re-election, left office, at the beginning of 1981.[43] The kindred measures enacted under Presidents Reagan, Bush, and Clinton, have also proven disastrous, but these must also be appreciated as merely consistent with the trend established by the wrecking of the U.S. already done under the Trilateral Commission's Carter.

Situate the characteristic lunacy which has taken over U.S. economic policy since August 1971, in the light of the case of Quesnay.

Crucial Issues of Capital Formation

Typical of the lunacy which has prevailed in U.S. economic policy-shaping during the recent two decades, are the monstrously immoral, as well as costly effects of the Garn-St Germain and Kemp-Roth bills. To understand the significance and effects of these bills adequately, we must view them as supplementing Federal Reserve Chairman Volcker's wholesale ruin of the Savings and Loan and other primary savings institutions.

Both Garn-St Germain and Kemp-Roth, which played a key role in promoting the Vice-President Bush era's looting of the Savings and Loan banks and the related pandemic of "junk bond" trafficking, were the looniest forms of financial speculation afoot, until the ultimate in psychedelic accounting practices, the "derivatives" swindle, took over, in the aftermath of the 1987 New York stock-exchange crash.

Seeing these and related bills in the context of Volcker's Trilateral wrecking of the U.S. financial system, illustrates with especially shocking clarity the always disastrous effects of introducing policies based upon Quesnay's *laissez-faire* doctrine to modern society. The essential facts of that case are as follows.

During the Spring of 1979, Volcker himself, while in Britain, where he was campaigning for nomination as President Carter's new Chairman of the U.S. Federal Reserve System, affirmed his adherence to the doctrines of the Trilateral Commission. He stated, that he considered "controlled disintegration of the economy" to be acceptable policy. This recipe, copied directly from the New York Council on Foreign Relations' "Project 1980s" manual,[44] was implemented immediately after Carter's nomination of Volcker to that post. The policy was put into effect during October 1979, immediately after the confirmation of Volcker's appoint-

41. The so-called economists explicitly associated with the Haileybury School, included Adam Smith, Jeremy Bentham, Thomas Malthus, David Ricardo, and, at a later time, John Stuart Mill and his marginal utilitarian school. The Karl Marx whose education in economics was shaped chiefly under the direction of the British Foreign Service's David Urquhart, not only belongs, properly, to the same school in economics thinking, but was among the most vigilant defenders of the appropriateness of the "free trade" principle, in vigorous opposition to the American System of political-economy in general, and to Friedrich List and Henry C. Carey in particular.

42. Elliott Roosevelt, **As He Saw It**, 1st ed. (New York: Duell, Sloan and Pearce, 1946), p. 36.

43. The most important of the changes under President Carter's administration, are identified in my already referenced "When Franklin Roosevelt Was Interrupted."

44. Fred Hirsch, former editor of the London **Economist**, writing in **Alternatives to Monetary Disorder** (New York: Council on Foreign Relations, 1977), affirmed that "controlled disintegration in the world economy is a legitimate object for the 1980s." Paul Volcker delivered the Fred Hirsch Memorial Lecture at Warwick University in Leeds, U.K., in November 1978, and began his speech by citing Hirsch's dictum on controlled disintegration.

ment.

Immediately after Volcker had been appointed, I issued a widely circulated warning by my 1980 campaign for the Democratic Party's 1980 U.S. Presidential nomination. I warned, that if Volcker's just-announced policy were not immediately reversed, the result would be a very early collapse of the U.S. economy into a deep recession lasting several years. At the close of November, I issued another statement on this same subject, forecasting the eruption of a deep recession caused by Volcker Trilateral measures to begin by no later than February 1981.[45] From that time, through the close of 1983, my quarterly forecasts were, consistently, the most accurate provided by any source. To the present day, the U.S. economy has never recovered from the effects of Volcker's Trilateral actions.

Now, look at the combined effects of the Volcker measures, the Garn-St German and Kemp-Roth legislation, and the Carter deregulation binge, from the standpoint of what we have referenced here as feudalist ideologue Quesnay's pro-feudalist dogma. Do not look at these effects in isolation; but, rather, contrast these ruinous combined effects of Volcker's measures, Garn-St Germain and Kemp-Roth, with what I propose must be an integral part of the urgently needed economic recovery actions to be taken beginning the weeks immediately ahead of us.

To that purpose, focus for a moment on the narrowed implications of the issues posed by Garn-St Germain and Kemp-Roth.

There are two mutually exclusive notions of the way in which a modern agro-industrial society might generate what is called "profit." The first notion is developed from the standpoint of physical production, as U.S. Treasury Secretary Alexander Hamilton, for example, presents the case in his December 1791 Report to the U.S. Congress **On The Subject of Manufactures**. The opposing notion, which coincides with the "zero-growth" implications of Quesnay's feudalist doctrines of "bounty of nature" and *laissez-faire*, presents nominal "profit" as the apparent fruit of financial speculation, rather than production.

The principled difference between the two, mutually exclusive notions of "profit," is key to understanding the way in which the policies of the U.S. Carter Administration unleashed the process leading into the presently ongoing disintegration of the world's financial and monetary systems. Nothing promoted by Garn-St Germain or Kemp-Roth promoted physical-economic increase of productivity; that legislation was focussed upon increasing the rate of parasitical financier looting of both the U.S. Treasury and the U.S. economy otherwise, thus not only failing to promote growth, but actually forcing an increase in the rate of contraction, the rate of negative national-economic growth.

In the real world, profit from production or development of basic economic infrastructure is generated in the following way. A certain accumulation of valuable assets, as productive labor, infrastructure, or materials of production, is expended on the economy. As a result, a physical output is generated. In the happy case, the total output exceeds substantially the combined amount of labor, infrastructure, and materials of production used up in that cycle of production; this margin of increase of output over costs, is the gross profit of production. After deducting justifiable administrative and non-productive services outlays from that gross profit, an operating profit of society is defined, as the margin of useful labor and goods free, after costs of production, to be used in expanding or otherwise improving the economic process as a whole. In the U.S. economy, especially since Volcker, Garn-St Germain, and Kemp-Roth were turned loose, we don't do that old-fashioned good stuff much any more.

This brings us to the opposing notion of profit; an over-imaginative accountant's version of no-calorie, sweet-tasting, fresh-blown circus candy. It fills up visual space, but not your digestive processes. This was Garn-St Germain and Kemp-Roth. The so-called Quesnay-like, *laissez-faire* philosophy of Kemp-Roth is sufficient illustration of the point being made.

By cutting the capital-gains tax-rate, the rate of after-tax profits on purely parasitical, financial-speculative pursuit of financial capital gains zoomed, at the same time that the continuing after-effects of Carter Administration deregulation and Volcker measures were collapsing even existing levels of investment in useful goods. The effect of Kemp-Roth and related tax-boondoggles was to cause the rate of financial capital-gains to zoom, while accelerating the rate of collapse of investment in useful employment and production. As

45. My statement as a U.S. Democratic Presidential pre-candidate, in New Hampshire, October 16, 1979 (published in **Executive Intelligence Review**, Oct. 23-29, 1979, pp. 8-9); see also my specific forecast of the timing of the outbreak of the U.S. Volcker recession, November-December 1979. The latter forecast was based upon a computer-based projection of the LaRouche-Riemann Model.

these and related parasitical schemes piled the volume of nominal financial holdings higher and higher, the pressures of financial leverage escalated the demand for greater new volumes of the same type of purely speculative capital gains. Washington and the Federal Reserve System obliged; more and more liquidity was generated and pumped into such forms of financial speculation. Meanwhile, the new sums used to finance the growth of this financial-asset bubble were obtained by looting the wages, pensions, health insurance, educational systems, and so on, of the real people and real economy.

In these pathological and kindred monetarist policies, the object is not to generate a profitable margin of useful goods and services. The object is the creation of a marketable, although purely fictitious, financial capital gain. Part of this financial gain might be liquidated in the form of purchase of physical assets. The more significant ration is not so liquidated; that more significant ration is nominal financial gains generated out of "hot air," out of financial leverage. The launching of the "junk bond" swindle, and related leveraged "buy-outs" and looting of victim banks and other firms, that chiefly as a by-product of Garn-St Germain, is a prime example of this.

"Derivatives" are a much more extreme expression of the same sort of bubble-blowing, a "Pyramid Club" type of chain-letter financial scheme on an astronomical scale. Today, for example, there are more than $140 trillions of worthless paper, called "derivatives," and related "hedge fund" accounts, dominating the world's financial and monetary system. All of this is essentially a giant swindle. As the current Japan crisis illustrates this point: Either the governments intervene simply to cancel payments on the account of "derivatives" and kindred claims, or the world's entire financial and monetary system, and, the world economy with it, goes into a disintegration phase during the period immediately ahead of us now.

What we are going to do, if we are not insane, is, we are going to put the world's entire financial and monetary systems into government-supervised bankruptcy-reorganization. Most of the financial claims, such as the claims of a majority of Japan banks, are to be simply wiped off the world's books. Productive assets, honest savings of family households, and so forth, will be protected under rules of financial reorganization. Everything possible will be done, by responsible governments and cooperating private agencies, to ensure the continuity, and also the expansion of production of and world trade in agricultural and industrial goods. Pensions will be protected; the social fabric must be protected in this and related ways. Vast amounts of newly created credit, backed by governments, will be mobilized to bring the world economy, as rapidly as possible, above the physical-economic break-even point of physical-economic profitability.

How the Recovery Will Work

There is only one way in which we could avoid the disintegration of the entire world's financial, monetary, and economic systems during the course of the months immediately ahead. Since workable remedies taken in times of emergencies, such as the present world emergency, must rely as much as possible on tried and true examples from past experience, the measures which must be taken now, to prevent the collapse of this entire planet into a prolonged "new dark age," will be modelled, at least in large degree, on the measures projected by U.S. President Franklin Roosevelt for the post-World War II, global economic reconstruction.

This means, a protectionist form of global "Bretton Woods" conditions, modelled upon the most successful features of the pre-1959 period of post-war reconstruction. This will include the elimination of most of the so-called "globalization" measures adopted during the recent nearly thirty years of folly, and will feature pegged currency-rates, kindred pricing agreements on goods trade, and so on. This will include the wholesale write-off of the greatest amount of speculative forms of financial assets, writing off not less than $140 trillions of present claims on accounts of "derivatives" and similar financial trash, in order to save the useful and honorable part of the world's financial assets and obligations.

In the real world, such actions will be taken only if they occur under the most desperate conditions of clearly perceived global financial, monetary, and economic emergency. Such emergency actions will occur only if taken jointly, and suddenly, by an aggregately powerful concert of sovereign nation-state republics, probably led by the President of the U.S.A. Otherwise, if such action is not taken during those weeks and months immediately ahead, the world is going over the brink, directly into Hell, where it will remain for at least a generation or two. Those are your options; those are your only available choices.

If the required emergency action is taken, we shall

reorganize a rapid expansion of investment in basic economic infrastructure, agriculture, and industry. This must be, and will be done, either on a global scale, or something close to that. The measures used to accomplish this will be modelled on the types of economic mobilizations which the U.S. launched during and following World War II. A combination of reasonable austerity, but net real growth in per-capita incomes and output, will prevail. Nations will cooperate to create the large-scale, long-term credit required to launch and sustain such a global expansion of the world's physical economy.

As I have indicated in other locations, the heart of a global economic-recovery program centers around the issuance of low-priced, long-term capital-improvements loans to nations such as China and India, to facilitate a boom in large-scale growth of machine-tool and other capital-goods exports from high-technology sources such as the U.S.A., Germany, Japan, and the revived machine-tool-design capabilities of the former Soviet scientific-military industrial complex. These would be loans with maturities from five to twenty-odd years, often featuring relevant grace periods, and issued at rates of between one and two percent per annum. Experience with successful growth of basic economic infrastructure and agro-industrial capacity, provides some important indications as to how such a new system of international lending would operate.

Before turning to our concluding topic, consider a few samples of those issues which such a recovery-program poses.

Long-term capital loans of these types are affected by three leading factors. First, the physical-economic "half-life"—e.g., physical depreciation—of the physical investment. Second, the relevant rates of what is termed "technological attrition:" as technological progress accelerates, the competitive productivity of capital improvements is used up more rapidly. Third, the characteristic rate of increase of the productive powers of labor, as measured in per-capita and per-square-kilometer terms. Given, a determined, required rate of physical-economic capital-intensity, and an associated rate of growth of physical-economic productivity per capita, a ceiling is defined for rational terms of repayments and borrowing charges.

Generally, economic history supports the following generalization. Unless we limit large-scale international lending to capital-intensive modes of increased (per-capita) physical-economic productivity, and hold prime rates of lending to between one and two percent on long-term, it is not possible to achieve the kind of global rates of real economic growth we require for pulling the world economy back from its present brink of global disintegration.

The U.S.A., China, India, and Russia

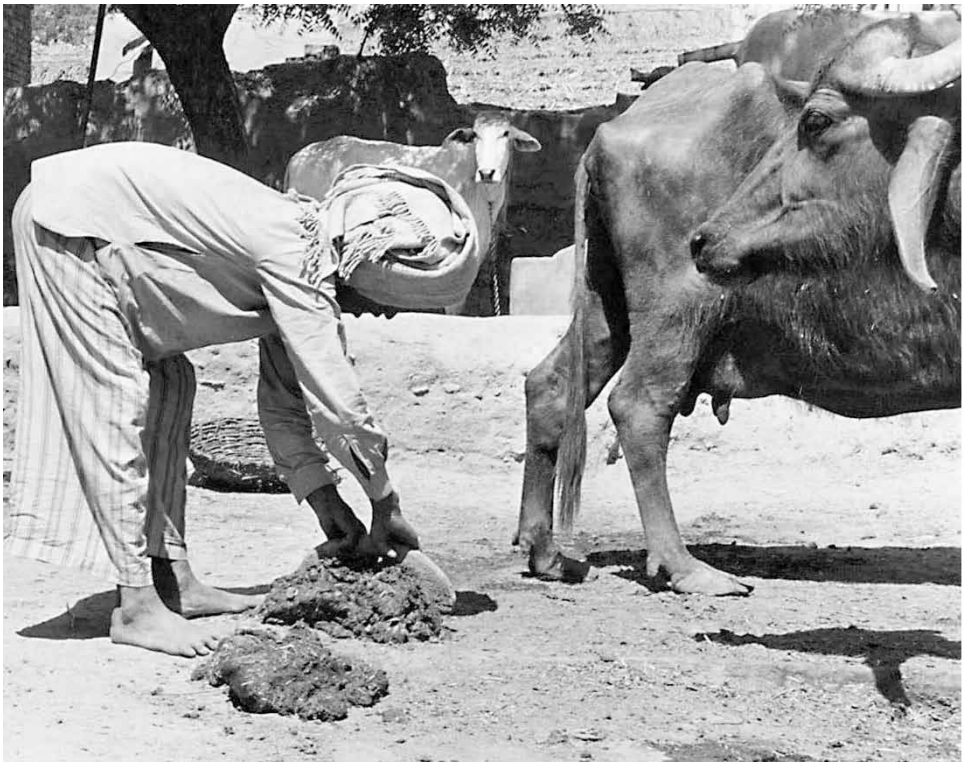
To make the case for emergency action clearer, consider the following summary of the course of action which should be launched jointly by the governments of the U.S.A., China, India, Russia, and other cooperating nations. Begin with a few of the most crucial strategic facts.

Presently, China's is the only relatively stable economy on this planet. This stability is the result of a relatively happy combination of circumstances.

First, China's recent relative successes and prospects, rest upon natural opportunities. China is presently the world's largest nation, situated, at the other extremity of the United States' historic direction of development of its economic relations, on the rim of the great natural channel for growth of world trade, the Pacific Ocean. It is the keystone national economy, among a group of nations in Asia which represent, in total, more than half the world's population, and, thus, all facts considered, represents the greatest potential for growth of the world's economy.

Second, during a period of approximately twenty years, China has astonished the sentient among its onlookers with the vigor and success of large-scale economic and social reforms. It is also the world's most stable society of the moment. It has developed a new stratum of leadership for its nation which reflects the experience and lessons learned in the process of achieving these relative successes. There are difficulties and dangers threatening China, but these are reflections of problems thrust upon China from other parts of the world, such as the October 1997 outbreak of a new round of global financial and monetary crises affecting the entirety of the world.

Third, China is situated as the presently leading nation of Asia, in a region which includes special resources on a vast scale. These resources include the very size of the Asia population itself, more than half the world's population. Otherwise, the most notable resources feature the potential for developing large-scale reconstruction of the water-resources of Asia, extending so to the Arctic and into the land-locked island of



An Indian peasant in Uttar Pradesh collects cow dung for fuel. "The development of the standard of living of the Asia population requires massive infusions of investment in basic economic infrastructure, plus high rates of infusions of technological advances in the productive powers of labor at the point of production and elsewhere. The ratios of per-capita capital- formation implied by such undertakings can not be endured within these parts of Asia, without high rates of technological progress."

the South Asia subcontinent.

Take the case of India, for purposes of comparison. The key problems of India are a worsening rate of extreme poverty within the majority of the population, especially since the assassinations of Prime Minister Indira Gandhi and her son Rajiv. Mrs. Gandhi was devoted to policies, and matching practices, which fostered improvements in the conditions of life of, notably, the rural poor. One of the former advantages and disadvantages of the leadership provided by Nehru and Indira Gandhi, is that that family personified India to a degree which has not been successfully replaced since the assassination of Rajiv.

The outstanding, historically determined problems of India's economy and political being today, are chiefly four. First, lack of development of the education of the poor, and under-utilization of the potential represented by the students and graduates of the scientific programs of its universities, especially of the Indian Institutes of Technology. Second, a failure to take on the urgent task of sub-continent-wide water management, a task often proposed for action by India's leaders, but a task which has never been effectively undertaken, because of blocking actions from within India's famous bureaucracy and other political impediments. Third, the failure to develop an adequate new power grid, freeing India from the disastrous effects of transporting poor-quality coal from North to South, and related circumstances. Fourth, the failure to lift India out of the effects of the decay of a rail system virtually unimproved since independence.

Although the situation in China is significantly different, the same four kinds of needs for educational and infrastructural development, are the commonly most urgent characteristics of all East, Southeast, South, and Central Asia.

There is a fifth crucial problem characteristic of this entire region within Asia. The possibility for raising the standard of living of the population of Asia in general, as in the case of goals adopted by the government of China, requires the formation of social capital, especially for development of infrastructure, on a vast scale.

The development of the standard of living of the Asia population requires massive infusions of investment in basic economic infrastructure, plus high rates of infusions of technological advances in the productive powers of labor at the point of production and elsewhere. The ratios of per-capita capital-formation implied by such undertakings can not be endured within these parts of Asia, without high rates of technological progress. Economies are able to afford high rates of social formation of productive and related capital, only when the cost of replacement of such capital is being greatly reduced by relatively high rates of technological progress.

For those among us familiar with the areas of East, Southeast, and South Asia apart from the special case of

Japan, the outstanding obstacle to improvement of the conditions of life throughout Asia as a whole, is the lack of adequate machine-tool-design capacity on the ground within the territory of these nations. The increase of the number of advanced science-graduates from qualified universities, which must be coupled with high rates of progress in those graduates' participation in crucial experimental proof-of-principle developments in technology, is the great technological bottleneck which must be overcome if the social goals of development for Asia are finally to be realized.

This latter challenge defines the need for a special new kind of partnership between these countries of Asia and the traditionally more advanced economies of the U.S.A., Germany, Japan, and so forth. In that new global division of labor required as part of a planet-wide economic reconstruction-program, those nations which used to be the traditional machine-tool-design-exporting economies of the world, must revive and greatly expand this role. Their function must be, not only to deliver greatly expanded machine-tool-design capability to the nations of Asia; they must also assist in building up a much-needed machine-tool production and service capability, in depth, within these economies of Asia.

To illustrate the point, consider the role of Japan in this. The tragedy of Japan, was the exemplary role of Henry A. "Tweedledee" Kissinger and Zbigniew "Tweedledum" Brzezinski, in shutting down Japan's efforts to provide countries such as Iran and Mexico, oil-for-technology and kindred trading agreements by means of which to aid in transforming so-called "developing nations" into modern economies living in political parity with the United States and western Europe. Japan was pushed by such creatures as the pair of Tweedledee and Tweedledum, into shifting out of a high-technology, heavy-industry, capital-goods-export orientation into developing nations, into dumping consumer products, cannibalistically, into the markets of North America and western Europe. Now, Japan must exactly reverse the trend forced upon it beginning the 1970s, to return to a heavy-industry, machine-tool-design export orientation, to function as the leading machine-tool economy of the Asia side of the Pacific rim.

Japan must scrap the worthless financial capital which is suffocating it today, to convert its salvageable debt into elements of a mechanism of credit to be used for a return to the technology and export orientations of the happier days before Kissinger and Brzezinski.

The U.S.A. and western Europe, the latter led by Germany, must make the same kind of reversal of recent trends in economic policy.

These stated requirements for cooperation among the nations identified, must also take into account the urgency of stabilizing Central Asia, of ridding that region of the currently ongoing efforts of British and other elements of influence to revive the "Great Game" of the Nineteenth Century. The resources for assisting Central Asia in finding such stability are presently concentrated chiefly in China, India, and Russia. Cooperation with the latter three nations, and other nations of the region, must be supplied from the U.S.A., Western Europe, and so on, but cooperation can not be supplied efficiently without a leading role by cooperation among the three named, leading nations of Eurasia today.

Russia figures in this equation in another, related, but distinct way.

The only possibility for the economic revival of Russia lies in the role to be played by the most advanced ration of Russia's combined present and former labor-force, notably the scientific-military-industrial complex developed within the former Soviet Union. For Russia's economy itself, the problem is, that without reactivating that complex as the basis for an export-oriented, vast machine-tool-design complex, there is no possibility of halting the presently accelerating plunge of Russia and adjoining former members of the Soviet Union into a strategically world-perilous form of disintegration. The potential markets represented by the indicated prospects for economic reconstruction of Asia represent the margin of opportunity without which Russia could not be brought to economic and financial stability.

The combination of large-scale infrastructure development in Eurasia (in particular), with the global role of a rapidly expanding machine-tool-design sector, is the strategic key to the prospects for survival of civilization at this time, a prospect which demands a quality of thinking about economics directly opposite to the trends which have taken over, increasingly, in the U.S.A. and elsewhere, during the recent thirty-odd years.

Contrast to such prospects for Eurasia, the case of the effects of the measures introduced, beginning October 1979, by Federal Reserve Chairman Paul Volcker. By skyrocketting prevailing interest-rates to a super-usurious rate of eighteen percent per annum, and even

higher, Volcker did exactly what he and the Trilateral Commission had promised to do: to subject the U.S.A.'s and world's economies to a process of "controlled disintegration."

The recent pattern in "IMF conditionalities" is the same lunacy expressed by Volcker's actions of 1979-1982. To slash investment in basic economic infrastructure and productive capital, while elevating borrowing costs to levels of usury, has precisely the same kind of predictable effect as Volcker's measures of 1979: controlled disintegration of any economy unlucky enough to have the gun of "IMF conditionalities" stuck against its head. Worst of all, is the implicitly criminal practice of subjecting national economies to floating exchange-rates, while, at the same time, placing control over the prices of currencies and loans in international markets at the discretion of financial speculators such as George Soros. No sane authority would do as the IMF has done repeatedly. No sane government, or banking agency, would propose to reform a sickened economy by driving its levels of productive output way below the physical-economic break-even point, in the name of "austerity." Directly the opposite course of action is mandatory.

To restate, in summary, the proposition outlined above: Any sane government does as U.S. President Franklin Roosevelt did, when he attacked the challenges of both the 1930s Depression and the World War II mobilization. One quickly writes off bad debts not worth salvaging, such as the perhaps $2 trillions of the worthless paper cramming bankrupt Japan banks; at the same time, one uses the sovereign power of government to create masses of very low-cost, long-term credit, concentrating that newly mobilized credit into investments in basic economic infrastructure, increased employment in combined agricultural, construction, and industrial operatives' work-places, into expanded physical output, and into higher levels of technology employed.

This is the gist of the new directions we must take, if this nation, and civilization generally, are to outlive the end of President Bill Clinton's present term in office.

What Matters in Economics

The deeper issue, which we have promised to address, has a twofold character. First, to account for the axiomatic root of the incompetence respecting economics, as represented by Wall Street and like-minded institutions today, we must address the phenomenon of the oligarchical mentality as a type. Second, we must show how the axiomatic implications of that oligarchical mentality as such, coincide with, and explain the coincidence between the linear mathematical ideology of the empiricists such as Hobbes, Locke, Smith, Bentham, et al., and the refusal of the pro-oligarchical ideologue to recognize that it is mankind's physical relationship to nature, rather than financial relations, which determine the ultimate outcome of economic systems. When these connections are recognized, the reasons Wall Street and other relevant circles behave as irrationally as they do, are more readily understood.

Take these connections in the following order. Begin by reporting on one crucial implication of the nominalist method which we have not addressed up to this point: why and how the nominalists (reductionists) refuse to acknowledge the physical implications of their own formalism. Show that implication, by focussing upon the mathematical meaning which we should associate with the term "physical." From that point, turn attention to the fact that the ordering of physical-economic processes is a willful form of functional relationship between man and the physical universe, between the human species and that universe.

Proceed by reporting that the way in which the term "non-linear" is generally used among today's mathematicians and physical scientists, is a slovenly practice. It has become, so, in those mouths, one of those kinds of terms which pretends to mean something precise, and yet, on closer inspection of that speaker's head, means virtually nothing. What it ought to signify, is that Enlightenment ideologues such as Leonhard Euler and Augustin Cauchy are babbling nonsense. The reality to which a meaningful use of the term "non-linear" ought to refer, is a reality which the fellow-ideologues of Newton, Euler, Cauchy, et al. have refused to admit exists. That reality is simply the non-existence of linearity in respect to any matter expressing the distinctive characteristic of any physical process in the infinitesimally small. It is a view of such characteristics from the standpoint of the Kepler-Leibniz-Gauss-Riemann conception of a multiply-connected physical-space-time manifold.

In that occurrence, "non-linear" signifies what Leibniz and Gauss indicated it to signify: that characteristic of a physical process which is expressed in the smallest infinitesimal interval of action of that process. In real physics, as opposed to the aberrant sentimentalities of the philosophical materialists, empiricists, and so on,

matter is not defined as the durable objects seen at the extremity opposite to sense-perception. To repeat the crucial point: In physics, what we signify by a physical process, is that kind of characteristic which appears in the form of a characteristic expressed as a non-constant curvature in the infinitesimally small interval of action within a multiply-connected manifold. That characteristic is the only meaningful phenomenon of the quality of being a "physical" type, which science presently knows.

To the extent that we should be permitted to say "we know" anything about such physical processes, we know the physical realm only to the degree we are able to supply crucial experimental demonstrations of discovered physical principles, that we are able to willfully change a physical process in this willful way. Thus, "physics" should be limited in meaning, to signifying that we are able to change the human species' relationship to the universe through validated discoveries of principles. We are thus able to change the way in which the physical universe behaves, by introducing the efficient action of a newly discovered, validated principle. We are thus, in that manner, and in that degree, able to bend the universe's physical characteristics to our will.

The test of that relationship, is mankind's manifest power to increase our species' potential relative population-density in this way.

In all such connections between man and the universe as a whole, the changes effected originate in a process of the sovereign individual human mind, the process of cognition which Immanuel Kant, for example, denied to exist. This process, through which ontological paradoxes are transformed into discoveries of validatable newly discovered physical (for example) principles, is the mode of physical action by means of which mankind is able to introduce successful, willful changes in the characteristic behavior of those physical processes upon which we act.

Without that efficient connection between cognition and the physical processes of the economy as an integrated process, there is no economics. Every result depends upon that connection.

This now tells us a great deal about the deranged mind of the monetarist. The typical monetarist assumption, that interactions between financial magnitudes determine the performance of economies, is clearly a delusion. The efficient, actual relationship underlying any real economy, is located in the physical actuality of the process, not the financial price-tags attached to the physical realities. The function of prices is no more than an administrative act, the intervention into the physical-economic process with a decision about allocation. The only lawful consequence of financial relations, is the impact of the changes in physical allocations consequent upon the ordering of financial relations. It is solely within the physical-economic side of the process that the consequences of allocation-decision are determined. Monetarist theory is therefore lunacy, often a dangerous form of lunacy.

There is no intrinsic right or wrong about prices; the right or wrong of the matter is located entirely in the consequences of the physical-economic action as such. It is solely within the lawfulness of the physical-economic process, that the right or wrong about prices is determined.

For example, the general policy of a sane republic, is that forms of economic activity which are both desirable and well performed should be profitable to those who undertake them on behalf of society.

A sane society regulates general freight-rates, for example, to ensure the competitiveness of every community of the nation which we intend should be competitive. The awful consequences of deregulation of freight, show, therefore, that deregulation is morally wrong. The disastrous effects of our national experience with deregulation, since 1980, have clearly proven, that the ranter who insists that deregulation will bring the eternal blessings of "free trade" to the delivery of freight, is either a malicious person, or a blundering idiot not to be let out of the house without a keeper.

There is no general principle of prices, other than the general principle I have just illustrated. A sane society formulates rules, affecting prices, taxation, tariffs, and so forth, to the purpose of producing a nationally desired physical-economic effect. These formulations, which shape the markets within which public and private enterprises operate, become the rules of the game by which enterprises and their customers play. It is the importance of having government intervene, from time to time, to arrange a lawful set of such rules appropriate to changed circumstances, which goes directly to the morality of such rules and their observance. There is no monetarist's or kindred general theory which is capable of providing a sane alternative to this approach to such matters affecting pricing policy.

Now, that much said thus far, it is now time for us to focus upon the issues embedded in the nominalist's

ideologically-motivated reliance upon linearity in the infinitesimally small.

The application of assumption of linearity in the small to the representation of economic processes, signifies that that type of economic thinking permits no consideration of the physical reality underlying the economic process referenced. Without attention to the distinguishing characteristics of the physical processes, the fact of existence of physical processes is excluded axiomatically from any serious consideration. It is the interaction between the physical characteristic of cognition and the physical characteristics of the processes into which cognition intervenes, which is the essential feature of economy. For the deranged mind of the monetarist, none of these determining features of the process exists.

If one replaces the "non-linear" characteristic of a physical process by the assumption of linearity in the infinitesimally small, what has become of the physical process's representation in that view of the matter? In such a case, that such linearity is imposed axiomatically, "physical" does not exist in the mind of those engaged in the relevant deliberations. It is the specific form of non-constant curvature in the smallest interval of an action within a multiply-connected manifold, which defines the efficient reality of "physical." Without that, "physical" does not exist within the intellectual schema brought to bear.

Furthermore, as we have already stressed this point, the act of knowing the physical reality which is the subject of human willful intervention, flows only from the role of cognition. Without the intervention of cognition, there is no efficient knowing, and therefore no known ordering of the development of the physical-economic process. Without cognition, there is no action combining the conditions of economy and human activity on those conditions. Cognition, expressed in respect to the non-linear characteristics of relevant physical processes, is the economy.

This brings us, now, to the culminating topic of this report, the matter of the fictional relations between oligarchs and human cattle in Wall Street's view of the universe. This brings us back to the subject of Quesnay.

'Pray, Sir, and Whose Dog Are You?'

The key to the present world financial and monetary crisis, is the post-Roosevelt revival and increase of the power of the oldest evil known to human history, *oligarchy*. The general way in which this recent resurgence of global oligarchical power occurred, is sufficiently outlined, for our present purposes, in my July 17 "Where Franklin Roosevelt Was Interrupted."[46] It is sufficient for our purposes here, to illustrate the meaning of the "oligarchy" for today's subject, by referencing the post-war British-American-Canadian cabal set up beginning 1938, as identified in my recent "The Eagle Star Syndrome."[47]

In relevant history, since the time of the self-doomed Akkadians, oligarchy has existed in three principal types: landed aristocracy, financier oligarchy, and a state-bureaucratic oligarchical caste. Throughout history, such oligarchies dominated society until the Fifteenth-Century Golden Renaissance launched those beginnings of the modern sovereign nation-state leading into the 1789 establishment of our own U.S. Federal constitutional Republic. The general character of all oligarchies, is that they regard themselves as a landlord class ruling over another ninety-five percent or more of the population, whom the oligarchs breed, cull, rear, and herd, as they do wild game or cattle, and as the Confederacy's slave-owning oligarchy captured, reared, herded, culled, and killed, its African and African-American slaves.

What has variously crawled, crept, and slithered into "Wall Street"-centered, Anglo-American tyranny over the U.S. and its economy, is a financier-oligarchy of the Venetian type, an oligarchy which deploys as its principal ally and instrument, an out-of-control, treasonous, tyrannical, bureaucratic monster centered in the Criminal Division of the Department of Justice. This oligarchy regards itself as the relevant landlord, and has relegated about ninety-five percent of the population as a whole to assume the destiny of looted and virtually enslaved human cattle. That is the sociological essence of the current situation in Wall Street, on Main Street, and in our nation's Capital. That oligarchical mentality, as contrasted with U.S. political standards prior to 1964, is the mentality behind the August 1971 set-up of the "floating exchange-rate monetary system," the 1976-1992 depredations of the Trilateral Commission's control of the Presidency, and the current binge of so-called "globalization."

The characteristic of all oligarchical thinking, is the attitude of a landlord (or, his estate-manager lackey) to the human cattle he deems the overwhelming majority

46. op cit.
47. **Executive Intelligence Review**, August 7, 1998.

of the population to be. He does not accept the notion of any human being as being actually human, as being a creative being made in the image of the Creator (by virtue of efficient cognition). To admit that the durable existence of economy depends upon the efficient role of individual cognition, would define the oligarch and his lackey themselves as Solon of Athens saw such oligarchs, as parasites better expelled to Eleusis.

Thus, it is the system of administration in terms of prices, as viewed in the linear terms of reference of the financial accountant, which becomes the disgusting misconception of "economics" shared among the oligarch and that accountant.

Consider the simplest of the implications of the distinction we have made. If the physical costs of basic economic infrastructure, household standard of living, and so on, are the necessary preconditions for maintaining an economy's stabilizing rate of growth, then those costs can not be cut for the purpose of maintaining some rate of financial profit. In such cases, the financial interest must give way to the human interest. Economy says to the financial ownership, and to the accountant, "If you wish to have a satisfactory rate of return on investments, to which we have no objection, then you must obey the rules governing this. You must make the investments, must establish and maintain the priorities, which are preconditions for realizing physical-economic anti-entropy for the society as a whole. If you, as ownership, refuse to meet those conditions, then it is you who should suffer the penalty caused by your immoral lack of responsible behavior."

The oligarch does not receive such communications kindly. "Cut health-insurance payments; our profits demand it. Cut welfare; our profits demand it. Introduce privatized slave-labor as prison policy; our profits demand it. Cut out the expense of useless eaters, as Hitler did; our profits demand it." If the maintaining of the level of output requires that we educate our population to levels at which technological progress may be continued, the oligarch slaps his palm down hard on the table-top: "No. History has shown, that whenever ordinary people become intelligent through exposure to the kinds of knowledge scientific and technological progress implies, ordinary people tend to become much too intelligent for our comfort; they tend to insist that all the relics of oligarchical rule be eliminated. That, we, like Henry A. Kissinger, and Clement Prince Metternich before Kissinger, will never tolerate. Crush them!"

As we see in the disgusting public behavior of the ruling family of Monaco, England's degenerate Prince Philip, and similar types of parasites, the oligarchical personality-type converges upon outright enmity toward any suggestion that society ought to be arranged in terms consistent with the fact that man and woman are made in the image of the Creator. That image of man, as man in the image of the Creator, becomes for the oligarch the most hated idea. The idea of cognition

Math and Matter

August 5, 1998

The accompanying report features three included conceptions which most students of mathematics and mathematical-physics subjects will find extremely disturbing, even perhaps violently so: 1) the notion of a negative form of mathematical definition of "matter;" 2) the notion of a physical characteristic of the action of human cognition, also negatively defined; 3) the notion of a functional interconnection between the two, also negatively defined. What I have said on those matters stands on the basis of the evidence which I have indicated either in that report, or in related, referenced other locations. All that need be done here, in this attached memorandum, is to soften the intellectual blows I have delivered on these accounts. To that purpose, I call attention to what ought to be any literate person's familiarity with certain arguments by Leibniz.

In this connection, it should be stated once again, that the kernel of all my fundamental contributions to a science of physical economy, is repesented by five essential conceptions, of which three are elaborations of concepts which I first adopted, during my adolescence, from study of some of the writings of Gottfried Leibniz, and another I adopted later, in 1952, chiefly from the work of Bernhard Riemann. The fifth conception, the notion of a characteristic economic principle of oligarchism, I developed separately, during the 1950s, from my study of the physical-economic roots of the recurring degeneration common to both the Roman Empire and all among

itself, becomes the most hated idea. The idea, that through the characteristic of action represented by the sovereign powers of individual cognition, mankind is able to act willfully upon the characteristics of physical processes as such, becomes a most hated idea. In place of the real universe, the oligarch insists upon a realm in which the caprices of Zeus's Olympian oligarchy deal with every matter by no other means than the whims of simple oligarchical modes of administration.

Thus, for the oligarchical bureaucracy of the present Criminal Division of the U.S. Department of Justice, there is no truth, no justice; there is only the matter of administering society to effects deemed agreeable by the oligarchs of Wall Street and kindred parasites.

the known pre-Hellenistic cultures of Mesopotamia.[1]

For the purpose of identifying the original prompting on those topics which the reader of the accompanying report might find most disturbing, the subject-matters of matter, cognition, and the functional relationship between the two, my relevant adolescent readings from Leibniz were English translations of his **Theodicy**, the Leibniz-Clarke-Newton correspondence, and the writing posthumously published as **The Monadology**. The included aspect of Leibniz's work on which I put emphasis here, is his extensive attention to the problems posed under under such rubrics as "clear and distinct ideas."

The central feature of those original discoveries which I developed toward the beginning of the 1950s, was my method for representing actual anti-entropy, as opposed to Professor Norbert Wiener's fraudulent, reductionist notion of "negative entropy."[2] My solution to the problem was to pose anti-entropy in physical-economic terms; the solution was my now familiar, paradoxical form of simultaneous inequalities. Similarly, my defining the sovereign individual act of cognition, in opposition to Immanuel Kant's denial of cognition's existence, relies upon use of a paradoxical formulation of a type related to that used to depict anti-entropy. It should be obvious to one familiar with Leibniz's work, that both of these discoveries of mine from that period, echoed Leibniz's notion of a *monadology*, and still do today.

My choice of these two paradoxical forms of expression, for anti-entropy and cognition, respectively, was prompted by my attention to the relevance of the Classical definition of *metaphor* in poetry and drama. My argument during the late 1940s and early 1950s was, and remains, that that act of cognition which is responsible for generating a crucial validation of a newly discovered principle of experimental physical science, is of the same type of act of cognition as that which generates a valid solution to a Classical artistic paradox in poetry, drama, or music.

On the basis of my pre-1952 elaboration of these conceptions respecting anti-entropy, cognition, and Classical art, in 1952 I came to recognize a related implication in Bernard Riemann's 1854 habilitation dissertation.

It followed, from that combination of discoveries, up through 1952, that I adopted the notion of functional anti-entropy as the basis for any valid notion of efficient physical existence. The correlated notion, is the fact that the effectiveness of progress in validated discoveries of physical principle is shown, as a matter of crucial-experimental proof, to be a form of physical action upon the multiply-connected manifold which is the domain of what we call "matter."

Against such evidence, the reductionists have no argument but either lying, an outburst of hysterics, or, a combination of both. As the once-famous Dale Carnegie et al. suggested, the road to success as a salesman or conniving back-stabber in the corporate rat-race, is to learn how to lie a lot while wearing a smile on your face. The heart of the matter is: Mastering the challenge posed by the issue of clear and distinct ideas, is not easy; for reductionists, such mastery is impossible.

—Lyndon H. LaRouche, Jr.

1. One of the products of that study of oligarchism was circulated privately, in 1962, under the title of **The Origin of Caste**. This reflected my attention to the functional roots of oligarchic bureaucratic caste-formations in such diverse expressions as the ancient Mesopotamia priest-castes, the Roman imperial bureaucracy, the corporate bureaucratic phenomenon of the U.S.A. during the 1950s and early 1960s, and related caste-formations in socialist organizations. The Criminal Division of the U.S. Department of Justice today, is typical of an oligarchic bureaucracy.

2. After years of quarrelling with reductionists over what the term "negative entropy" ought to be signified to mean, I found it simpler to use the term "anti-entropy" instead.