

Our Economic Policy: Animation and Economics

by Lyndon H. LaRouche, Jr.

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Foreword

It was not the 1929 stock-market crash which elected President Franklin Roosevelt. It was the collapse of the U.S. economy by approximately one-half, a collapse caused by the austerity policies of President Herbert Hoover over the October 1929–February 1933 interval, following that crash. Hoover’s austerity policies paralleled those of his contemporaries, those Brüning and von Papen governments of Germany which paved the way for Hitler’s *coup d’état*. Roosevelt rejected such austerity measures, and thus saved the U.S. from the fascist dictatorship in the U.S.A. which would have been soon virtually inevitable, had Hoover been re-elected.

As I have emphasized on numerous occasions, the presently onrushing general collapse of the world’s present, floating-exchange-rate monetary-financial system, is a far, far worse, more dangerous development than the world depression of the 1930s. This time, Europe, the Americas, and elsewhere, are being dropped into an abyss far deeper than that of the 1930s; this time, unlike the approach to the 1930s depression, we, in the U.S.A., together with the Britain and others, have spent forty years tearing down the infrastructure and other prime factors on which the earlier relative prosperity, and recovery of the U.S. and, later the western European economy, for example, had depended.

Therefore, although the recovery measures taken by President Franklin Roosevelt are still, today, a model of constitutional law’s approach to organizing a recovery from even a deep depression, novel, much worse features of the presently onrushing crash, require that we must also take into account the need for additional measures of reform in making national economic policy, beyond those which were required during the earlier general crisis of the 1930s and post-war reconstruction in Europe. This means that our universities and related professionals must now change their way of thinking about the definition of the term

“economics,” that in a corresponding way, that is the subject of the material presented following this foreword.

First, now, a few paragraphs to set the stage for the subject-matter to be considered in the main parts of this report.

On August 15–16, 1971, U.S. President Richard Nixon made the fateful decision to collapse the already greatly undermined Bretton Woods System. That decision was fashioned for Nixon, most notably, by close collaboration among three characters who would do much to shape three subsequent decades of world history: Nixon advisors Henry A. Kissinger, George Shultz, and Paul Volcker. What these advisors’ influence, combined with Zbigniew Brzezinski’s 1977–1981 wrecking-game, destroyed in this way, was the system on which the earlier successes of the post-World War II U.S. and European economic recoveries had depended.¹ At that time, I was the only notable economist who had publicly, and repeatedly forecast the likelihood of such a development as that of August 15–16, 1971.

I had begun developing what later became my successful, long-range forecast of the present world crisis during 1956, then as a much more modest undertaking in keeping with my duties as an executive of a management consulting firm at that time. For that more limited purpose, in 1956, I forecast the short-term prospects of that firm’s medium-term outlook for growth in the U.S. economy of what was later named “the IT sector.” But, at the same time, I warned that what we faced immediately was a severe cyclical recession, due to break out during the February-March 1957 interval: the beginning of the deep 1957–58 recession and its immediate aftermath. That initial forecast was based on study of shifting capital factors in the 1954–1956 role of consumer-credit financing of growth in production and sales of certain categories of goods, such as automobiles.

In fact, the 1957–58 recession, or the later crash of August 1971 could have been prevented. However, the method for preventing the U.S. from sliding into either the recession or the later 1971 crisis, would have been, better, to have avoided those calamities, by refusing to accept those changes from FDR’s policies which had led into these failures. Even at the last moment in 1971, we might have recognized the available alternatives for maintaining the principle of the fixed-exchange-rate system. What made 1971 apparently “inevitable,” was the refusal of the relevant officials to give up the anti-Roosevelt doctrines which led, over

¹ Notably, the motive underlying all of the wrecking measures promoted by Brzezinski’s Trilateral Commission, was identified frankly, by that Commission’s Project for the 1980s as “controlled disintegration of the [U.S.] economy.” The energy, sundry deregulation doctrines, and, above all, Federal Reserve Chairman Paul Volcker’s forced draft imposition of ultra-usurious discount rates, were, to this day, the most notable causes of what has now become the present world depression, without which the ruinous effects of the 1971–1972 creation of the floating-exchange-rate monetary system would not have lasted as long as they have.

more than a decade after the 1957 recession, into the apparent inevitability of the 1971 crash.

The remarkable success of my relatively short-term forecast of the 1957 recession-crisis, had prompted me to study the deeper implications for the long term which were implicit in my forecasting success of early 1957. The long-range forecast which emerged from work during late 1958 and 1959, presented the following summary conclusions:

If the U.S. were to continue the trend associated with Arthur Burns' influence on the policy-shaping of the Eisenhower Administration through the early 1960s, we must expect the second half of the 1960s to see a series of systemic shocks in the world monetary-financial system, probably to be followed by a breakdown of the Bretton Woods system.

I continued to maintain that 1958–1959 forecast, with some slight refinements, over the course of the 1960s. The Autumn 1967 crisis of the British pound sterling, under the first government of Prime Minister Harold Wilson, was followed, quickly, by a U.S. dollar crisis of January-March 1968. Other crises followed that, leading into Summer 1971. The 1971 crisis thus occurred as I had first forecast it about a decade earlier.

However, during and following those two events, knowledge of my forecast of a coming threat of a breakdown of the Bretton Woods system, became relatively widespread on university campuses and elsewhere. I then used the evidence of the actual August 1971 break, to point out, that the economics profession's denial that such a crisis could occur, qualified the leaders of that profession as "quackademics;" I challenged them to debate those issues publicly. My challenge was accepted by my opponents' chosen champion, Professor Abba Lerner, whose defeat in that debate exposed the validity of my charges, but also incurred a hatred against me among Congress for Cultural Freedom and related circles which has continued to reverberate around circles such as those of the *Wall Street Journal* to the present day, more than three decades later.

Since 1971, I have produced, updated, and published several new long-range forecasts, all, up to now, successfully, without error. *To the best of my knowledge, no known economist can match that public record of achievement in forecasting.*

There was nothing miraculous in the uniqueness of my achievements on that account. The fact of the matter has been that all of my putative rivals for such laurels have been viciously inflicted by attachment to beliefs which ensure their incompetence in all of the crucial aspects of economics which must be developed as a body of scientific practice.

Why My Rivals Failed

The often tell-tale signal of incompetence by an economic forecaster, is that he, or she fails to grasp the elementary distinction between actually forecasting, and the silliness of “predicting” in the fashion of some Wall Street tea-leaf reader. The existence of the voluntary decision-making powers by, and among actual people, limits our ability to attempt to simply predict any exact dates or events for the crucial developments in the economy’s future.

Under exceptional circumstances, a specific probable date for a major event may be foreseen, as in the instance of my Spring 1987 forecast of an early October collapse of the New York stock market; but that is possible only under exceptional circumstances, as was the case at that time.

It is therefore indispensable that I introduce, here, a rigorous definition of the term “systemic” as that applies to social systems such as economies.

Today’s putatively conventional methods in study of political economies, are dominated by the empiricist and positivist forms of reductionism, forms which, unfortunately, are widely accepted as the standards for scientific thinking under the global cultural influence of the Anglo-Dutch Liberal system. While the members of the set of doctrines subsumed by that Liberal tradition differ among themselves, they share certain common features which can be traced from Cartesian methods.

All of these systems are premised upon the notion that scientific proof is a matter of showing formal consistency with a set of what are treated as “self-evident” definitions, axioms, and postulates of a reductionist system of thought. The effect of belief in such a system, acts on the mind of the believers as a fishbowl contains goldfish. This has two commonplace effects on the practice of economic forecasting among empiricists. The result is that those afflicted with such beliefs either insist on predicting results which are consistent with that “fishbowl’s” rules of behavior, or simple, stubborn, denying of the existence of anything outside those bounds.

In the real universe, there are no fixed sets of “self-evident” definitions, axioms, and postulates. Sane men and women do operate on the basis of assumptions which they have assumed to be sufficient up to that point, but they are open-minded about discovering that some of those assumptions might be false, or that other principles they had not known are determining. Thus, on both accounts, the most important class of forecasting is being on the alert for evidence of such needed changes in sets of assumptions.

*Any set of fixed assumptions constitutes a system.*² The most interesting, and important developments in science, including economics, are the phenomena of the systemic practical breakdown of such systems. In the matter of economic crises, in particular, the very essence of a scientific method of practice is a focussing of attention on foreseeable, or *previously unencountered* states of a system beyond the scope of the system within which society is currently operating.

Thus, scientifically competent forecasting does not focus on predicting a calculated occurrence of an event within the bounds of a finite system; forecasting is alertness to an impending state of the system lying outside the bounds of the system which we have previously assumed was operative. In other words, this means either a boundary of that entire system, or an effect typified by foreseeing higher states of the real system lying outside the bounds of current assumptions, as Bernard Riemann defined the transformation of the flight of a projectile into a transonic and supersonic domain.³

Therefore, instead of attempting to make a simple prediction of a particular event, competent economists must reject the use of such simplistic sorts of “test” predictions. Competent economists must focus attention on defining the qualitative specificity of certain future *branching-points* which are built into the present characteristics of the subject of a system, or of an array of mutually distinct systems as a whole. We must thus adduce the nature of branching-points for decision-making within such arrays. These are points at which society must choose among two or several available branches of developments. The function of competent economic forecasting, as absolutely opposed to merely predicting, is to study the interrelationships between financial and physical capital cycles, to foresee the emergence, at some estimated interval in future time, of critical points of systemic divergence in ongoing, subsuming, multi-systemal processes. From this standpoint, the forecaster must assess the significance of the choices of direction available to society at those critical junctures.⁴

² The prototype for the formal, deductive organization of a system, is a set of what are assumed to be more or less “self-evident” definitions, axioms, and postulates. Otherwise, a Riemannian system is one without any definitions, axioms, or postulates but the experimentally validated discoveries of universal physical principles. I shall qualify the special characteristics of such a Riemannian system within the main body of this report, below. The notion of a boundary of a system employed by me in this report, references Riemann’s 1857 paper on Abelian Functions, in which “boundary” is to be read as congruent with that Herbart-Riemann use of the term *Geistesmasse*, which I present in a relevant location within the body of this report.

³ *Über die Fortpflanzung ebener Luftwellen von endlicher Schwingungsweite* (“On the Propagation of Plane Air Waves of Finite Magnitude”), *Riemann’s Werke*, pp. 156–175. Nearly a century later, Riemann’s forecast of transonic and supersonic flight was applied by German physicists, advising U.S. authorities, to make standard supersonic flight possible. The reference to Riemann here is to emphasize that a modern science of physical economy is essentially Riemannian.

⁴ The “model” for this crucial principle of a science of physical economy, is the argument for the principle of universal gravitation developed by Johannes Kepler in his 1609 *The New Astronomy*. The orbit of Mars, or Earth, has three geometrical characteristics which combine to define what Kepler relegates as two tasks, the

To restate the point for greater clarity. The most important challenges in economic forecasting involve foreseeing a change in the general state of the economic process as a system. This may or may not coincide neatly with the kind of specific events foreseen in terms of an assumedly existing state of the economy as a single type of system.

How that kind of forecasting must be composed, is the principal subject of this report. Briefly, *this can be done only by shifting the ground-basis of economic analysis from the monetary to the physical basis*. It is, as I shall point out in the body of this report, by analyzing economic processes as physical processes, first, and then studying the effects of superimposing monetary-financial systems on that physical basis, that the functionally determined systemic relationship between the interacting capital functions of respectively monetary-financial and physical-economic systems can be assessed in a comprehensible and reasonably accurate way (provided we exclude the fraudulently fictitious factor of the Federal Reserve System's injection of false, "Quality Adjustment," values according to the pathetic doctrine of marginal utility.⁵

At this point in these preliminary remarks, we must ask: what was the reason that all of my known rival professionals failed, some most of the time, most all of the time? The reasons for those failures are not hard to find. Consider a relevant recent case.

To contrast the required scientific method of economics to commonplace sophistries taught in universities today, consider the following excerpt from *EIR's* international Morning Briefing of October 12, 2004; a report which reads like a sample of an obituary notice on the causes of *the presently onrushing, threatened, self-inflicted death of the U.S. economy*:

discovery of a truly infinitesimal calculus, and the generality of elliptical functions, to be mastered by future mathematicians. These three, ironically juxtaposed characteristics, are a.) the elliptical character of the orbital pathway, b.) the fact that the adducible velocity of the planet within that pre-determined orbit is changing at each infinitesimal interval, and c.) that the effective rate of movement along the orbital pathway corresponds to equal areas of the subtended elliptical area in equal times. So, a corresponding infinitesimal calculus must be developed for treatment of the smallest observed intervals of an orbital pathway, a calculus required to determine the orbit as a whole from limited information of this sort, as Gauss did in defining the orbits of the leading asteroids. Leibniz's unique development of the calculus to the point of defining a catenary-cued principle of universal physical least action, points to the methods by which long-range forecasting may be associated with the application of Leibniz's method to relatively small observed intervals. This expresses the crucial distinction between Leibniz's functional definition of a truly infinitesimal calculus, and that of his empiricist adversaries Euler, Lagrange, Cauchy, *et al.*

⁵ For reasons emphasized by the biogeochemist Vladimir I. Vernadsky, in his specifications for the Noösphere, we can not apply the methods of ordinary physical science in the fields of abiotic and living processes to human behavior. The methods of research suited for abiotic and living processes must, therefore, be adjusted for the factor of the creative and willful (noëtic) function in human cognition, Nonetheless, for classroom purposes we can approximate social processes, such as economies, in terms of comparison to, and contrast with the mere Biosphere. Cf. Lyndon H. LaRouche, Jr., *The Economics of the Noösphere* (Washington, D.C.: EIR News Service, 1971).

“In perhaps a quaint intervention into the U.S. election debate, the Nobel Prize Committee on October 11 gave the Economics prize to Edward Prescott of Arizona State University at Tempe (the site of Wednesday night’s third and final Presidential debate), who then told CNBC that the U.S. still hasn’t cut taxes enough: ‘If you want to have more employment, you’d better cut taxes.’

“Lyndon LaRouche commented on these awards in general, ‘The difference between an idiot and a Nobel Prize winner, is that the Nobel Prize winner is a *certified* idiot.’

“Prescott shared the prize with his former graduate student at Arizona State-Tempe, Finn Kydland. Their work, which has concentrated on how central banks, including the Federal Reserve, should work, is very strong for deflationary ‘inflation-fighting’ central bank policies.

“Otherwise, Prescott and Kydland’s various articles and papers have insisted that the development of economies arises from ‘push-pull’ in the very small—from the individual consumer, businessman, or inventor—and certainly not from any long-term, Keplerian ‘orbital principles’ of the physical economy as defined by Lyndon LaRouche. Said the Nobel Academy in awarding the prize, ‘The laureates laid the groundwork for more robust models by regarding business cycles as the collective outcome of countless forward-looking decisions made by individual households and firms regarding consumption, investments, labor supply, etc. [They] have been widely adopted in modern macroeconomics.’ ”

Prescott’s claims, as reported there, are no better than a new example of the kinds of absurdity shared among *nearly all* of the post-Franklin Roosevelt awards of the Nobel Prize in economics. The significance of these awards, taken as a whole, is that they correlate with the recent forty years of accelerating degeneration of the economies, and economic-policy shaping in the Americas and Europe. There is a correlation between the systemic quality of functional insanity expressed by the doctrines for which those awards were given, and the systemic slide of the world’s present, floating-exchange-rate mode of monetary-financial system to the brink of the presently onrushing collapse into a threatened, planet-wide new dark age of humanity.

In contrast to what passed for logic in Prescott’s case, the actual U.S. economy is now at the point of going off his charts. The immediate situation ahead is a systemic catastrophe of the present world monetary-financial system, from which only an appropriate choice of changes in the existing set of rules of the system can provide a pathway of escape.

As with each of the majority among his Nobel Economics peers, the insanity of Prescott’s concoction lies less in his frankly silly (reported) concoction in itself, than in the aberrant

state of the mind of the makers of those awards. In each of these cases, the systemic quality of functional insanity of the recipient's concoction, is an insanity shared among those who made the award, an insanity which lies in the psychopathological characteristics of their conception of the subject of economics itself. By "insanity," for this and analogous cases, I mean that his argument is situated within the bounds of sets of "definitions, axioms, and postulates" which, like John von Neumann's and Oscar Morgenstern's use of their "Robinson Crusoe" model in *Theory of Games and Economic Behavior*, situated the entirety of their theory in an Alice-in-Wonderland universe outside the actual one. The rampages of the sundry varieties of post-World War II ivory-tower economists, such as the circles of Norbert Wiener, Tjalling Koopmans, and the "artificial intelligence" fanatics Marvin Minsky and Noam "Cartesian" Chomsky, merely typify the positivists' trend toward sheer lunacy shared among most Nobel Prize Winners in economics during the post-war period to date.

Two Kinds of 'Economics'

Taking the conflicting economic systems practiced during the recent three centuries of modern European civilization until now, all principal species of economy today can be grouped chiefly into two principal types of today's mutually opposing systems, as I have defined systems above: on the one side, the Anglo-Dutch Liberal system, of which Marxian economy is an offshoot; versus, on the opposing side, the science of physical economy which was founded by Gottfried Leibniz. That science of physical economy is the foundation of what is more widely known as *the American System of political-economy*. The latter as associated with the names of Alexander Hamilton, Friedrich List, and Henry C. Carey. Most of the absurdities met among leading U.S. economists and their students today, are to be related to the fact that they are either simply ignorant of the American System of political-economy, or think of it as no more than an aberrant variety of the Anglo-Dutch Liberal model. The worst types of absurdities in the name of modern political-economy are the more or less radically monetarist varieties of Anglo-Dutch Liberal models, as Prescott typifies a relatively extreme type of sophistry in such matters.

The American System of political-economy is derived, by way of the influence of Gottfried Leibniz, from the combined effect of the founding of the anti-feudal, modern sovereign form of nation-state during the 15th-Century Renaissance and the founding of modern international law of nations by that 1648 peace Treaty of Westphalia which ended the 1511–1648 period of religious warfare in Europe. However, over the period of the wars of France's King Louis XIV and the subsequent "Seven Years' War," the waning former imperial power of Venice's ruling financier oligarchy, produced a situation in which Venice's financiers reincarnated themselves in the new role as an Anglo-Dutch financier oligarchy embedded in the maritime power of the India Company of the Netherlands and England.

The triumph of the British East India Company over its continental rivals, at the February 1763 Treaty of Paris, established the Anglo-Dutch Liberal model of financier oligarchy-controlled parliamentary systems, as the characteristic form of organization of international finance and political-economy up to the present day.

The American System of political-economy has exerted a powerful influence on the development of the best features of the European economies. However, except for the period of the vigorous revival of that American System under Presidents Abraham Lincoln and Franklin Roosevelt, the anti-American, Anglo-Dutch financier cartel, with its subversive tentacles, such as Felix Rohatyn, deeply rooted, still today, in the financier oligarchies of both the New York City financial center, powerful D.C. law firms, and elsewhere, has remained the dominant force in world finance to the present day.

The essential difference is, that, under the U.S. Constitution, it is the sovereignty of the nation-state and its government, which is the ruling power, above financial interest; in Europe, it is the financier oligarchy, operating still today through central banking systems, which triumphs over government.

The resulting difference between the inferior British, and superior American systems, is that the British system, which is essentially a monetarist system, relies on a gain in price; whereas, the American system emphasizes a gain in the productive powers of labor, per capita and per square kilometer. The Anglo-Dutch Liberal system reveals its genetic origins in the ultramontane practices of the Venetian financier oligarchy; the American system emphasizes rewarding activities by means of protectionist incentives which contribute to the increase of both the quality of goods and services produced, and the welfare of the population as a whole. Therefore, the name of profit occurs in private enterprise in both systems, but with a contrary moral significance.⁶

The recent forty years, especially the recent thirty years, of predators' triumph of the Anglo-Dutch "free trade" system, over President Franklin Roosevelt's American System, has been the root cause of the process of decadence, over the most recent four decades, leading into the great world crisis of today. The only alternative to a global economic breakdown crisis today, would be the re-establishment of the kind of monetary-financial system associated with the 1944 design of the original, Bretton Woods, fixed-exchange-rate, regulated world system.

In the usual study of crises erupting within Liberal and related economic systems, we are occupied with three types of crises. First, special cases of those crises which are caused by developments external to the implicit internal design of the particular economic system

⁶ President J.F. Kennedy's investment tax-credit, as opposed to the lunacy of a free-trade policy, is an example of this.

considered. Second, cyclical crises of a type on which British East India Company school-educated Karl Marx based his notion of periodic (e.g., “decennial”) crises, as built into the design of the system.⁷ Third, systemic crises, breakdowns of the system itself, which are caused by a failed design-factor in that system itself. What we are dealing with today is, principally, a *systemic*—i.e., *terminal*—breakdown of the existing variety of Anglo-Dutch Liberal quality of world monetary-financial system. In that sense, Prescott presents us with an example of a particular variety of contemporary terminal case.

The tragedy of the U.S. economy today—using “tragedy” in the specific sense the term is employed for Classical Greek tragedy or the relevant compositions of the exemplary Shakespeare and Friedrich Schiller, is that the reversal of those reforms, introduced over the 1933–1944 interval, by President Franklin Roosevelt, in favor of a return to the “free trade” dogmas which had caused the 1929–1934 world monetary-financial crisis, built the virtual inevitability of a general breakdown crisis—i.e., a systemic crisis—into the pro-monetarist restructuring of the U.S. and continental European economies (among others). A systemic crisis is not a crisis within the bounds of the system; the system itself is the disease.⁸

⁷ Karl Marx at Berlin was drawn under the influence of the pro-fascist economist Savigny, and the followers of Savigny’s accomplice, G.W.F. Hegel. Under those influences he fell, unwittingly, under the control of Britain’s Lord Palmerston, the latter the hand behind Giuseppe Mazzini’s Young Europe and Young America organizations. As a British Foreign Office-sponsored refugee in London, Marx fell, for more than a decade, under the direction of the British Foreign Office controller for Young Europe, Urquhart, at the British Library. It was chiefly under that direction, at the latter location, that Marx received his education in the doctrines of the British East India Company’s Haileybury School of Bentham, Malthus, Ricardo, *et al.* The oddity of the situation was Marx’s publication of an attack on his actual proprietor of the time, Palmerston, denouncing Palmerston as a “Russian spy,” a project to which he had probably been put up by Palmerston’s British rival, Urquhart! Under repeated hammerings by Britain’s Frederick Engels, Marx arbitrarily denounced the two greatest economists of his lifetime, Friedrich List and Henry C. Carey, as foolish economists. This British influence on Marxian and related thinking led to the “anti-voluntarist,” “objective,” dogma of Kautsky, Plekhanov, *et al.*, the dogma whose influence played a leading role in contributing to the self-inflicted 1980s economic collapse of the Soviet system. Essentially, Marx denied that “voluntary” function of the individual human mind on which scientific and economic creativity depends absolutely. Thus, as I proved, in an ironical way, in my February 1983 forecast of the collapse of the Soviet economy (“in about five years”), the Soviet military-science program was a work of genius, in contrast to the wretched performance of the civil economy.

⁸ The illiterate’s meaning of “tragic” in widespread use today, defines “tragedy” as a horrifying event. The literate meaning, corresponding to Classical Greek tragedy as seen by Plato, or by Shakespeare and Schiller, signifies a doom inhering as an axiomatic kind of flaw in the characteristic standards of behavior of the relevant leading institutions of the nation or its culture. As long as the victim(s) are unable to overthrow the power over them exerted by the generally accepted culture of which they are a part, doom recurs in various guises, as to the culture of the Iliad people and their descendants, as the latter are the most notable subject of Classical Greek culture. Ultimately, it is the Gods of Zeus’s Olympus which are the destructive factor of evil in that culture. So, it is with a systemic, as distinct from a merely cyclical economic crisis: the crisis is not something which occurs within the bounds of the system; the system itself is the crisis. Such is the present crisis of a planetary social system dominated by the “post-industrial” utopianism of the recent four decades.

The gradual degeneration of the economic system which had been developed under President Roosevelt, prior to his death, began, in fact, on the day after his death. A change from Roosevelt's policies which occurred then may have seemed only a slight change to many observers at that time, just as a deadly new disease may slip into a society virtually unnoticed, to explode with fury a decade or more later. The change may have appeared to be slight to many, but it proved to have been axiomatic.

On the day after the death of President Franklin Roosevelt, a long-term, sudden change of direction was introduced to U.S. policy-shaping, a turn led by those financier circles, such as those associated with the Dulles brothers, which had formerly supported, even financed Hitler's rise to power, and who played a leading role in assimilating large sections of the post-war Nazi apparatus and the financier oligarchy which had created and owned the international financier-oligarchical cartels of the Synarchist International behind Hitler, into what became the NATO system.

The deep significance of the specific changes in policy on that day, such as the shift to British imperial policy of reconquest of former colonies, was obscured from the general view of most at that moment; but, as the decades rolled on, the deep, axiomatic changes in our economic system of the recent forty years came to the surface with increasing force. The Bush Administration of today is an expression of that process of moral and economic decadence in the political-economic system of our own U.S.A., as in other parts of the world. The imperial impulse among utopian circles in the U.S. today is a product of that shift which occurred under Truman.

The task of the forecaster is to focus on those and other kinds of turning-points, as phase-shifts in the political-economic-cultural process, such as the death of President Franklin Roosevelt, which often set into motion the long-term waves of history which ensue over following years and decades.⁹

⁹ Leading examples of such virtually instantaneous about-faces against FDR's policies included: The change in command of OSS in Italy, to clear the way for Allen Dulles' bringing his Nazi SS assets there into what became the post-war NATO system; the suppression of the ongoing Vatican channel negotiation of the Emperor Hirohito for the surrender of Japan, thus clearing the way for Truman's useless nuclear bombing of an essentially defeated Japan's Hiroshima and Nagasaki that Summer; and the reversal of the post-war decolonization policies of FDR. These developments, under Truman, following FDR's death, marked the build-up of the post-war right-wing, "utopian" faction under Truman himself. The fight against Pope John XXIII, to prevent the succession to Paul VI, by the right wing in the Catholic hierarchy, was an echo of Allen Dulles' hostility to Msgr. Montini's (later Paul VI) role in that Vatican Extraordinary Affairs section through which the negotiations for Hirohito's surrender were being conducted during the last period of FDR's life. There is a correlation between that right wing in the Church and the "rat-line" used by Dulles' friends to conduit Nazis, via Spain, into locations such as Argentina. Those connections are still of a high strategic significance in world affairs today.

For example, the replacement of President Truman by President Eisenhower, placed a check on the pro-fascist, utopian forces which Eisenhower was to denounce as a “military-industrial complex,” but the 1962 missiles crisis, followed by the assassination of President Kennedy, created a situation of terror under which the utopian fanatics’ U.S. war in Indo-China was launched, and the late 1960s decadence of the U.S. political system unleashed.

Nonetheless, despite the growing, right-wing financier-oligarchical faction’s corruption of the system under President Truman, and later, the powerful inertial influence of Roosevelt’s reforms continued to dominate the prevalent long-term trends in the post-war economies of Japan, the Americas, and Europe until the second half of the 1960s, when a new young-adult generation introduced that countercultural factor of sex-focussed “post-industrial” ideologies, the which has transformed the U.S. over four decades, from the world’s leading producer nation, to today’s mimicry of the degeneration of Rome’s ancient Italy: from a producer economy to one of “bread and circuses,” a self-doomed, predatory parasite subsisting on the wealth sucked from subjugated nations and peoples. A return to the model of law-making and related practice associated with the proven success of President Franklin Roosevelt’s approach, is the image required to lead the U.S.A. and the world out of what will become otherwise a planet-wide plunge into a prolonged new dark age of humanity at large.

Do not permit yourselves, any among you, to be deluded in the view that Bush’s re-election had been statistically inevitable at any point, or, that the forces controlled by the financier oligarchy behind the Bush policies would necessarily come to enjoy an imperial triumph over years to come. There is no way in which the system which the current Bush Administration has been building could triumph in years to come. A U.S.A. so foolish as to accept what Bush represents, even now, would be plunged, very soon, into one of the prolonged, great dark ages of humanity, comparable to the New Dark Age which struck Fourteenth-Century Europe. A system under Bush would be a quickly doomed system now. What is being tested today, is nothing less than the moral fitness of our people to arise and stop the descent to Hell, while it is still possible to do so.

The general economic collapse of the U.S. dollar is virtually immediate at this time. The collapse of the U.S.A. over the immediate several years ahead, under a re-elected government expressing the “failed species” characteristics of “W” and sociopath Cheney, were one of those things which were virtually inevitable, for systemic reasons.

Capital Factors

The principal, functionally systemic difference in the management of the U.S.A. economy, prior to and after the shift toward a “post-industrial” utopia, during the middle to late 1960s, lies in the qualitative difference in behavior between the quality of management associated with the pre-1964 period, and the new management which rose to leading

positions in government and management from among those who entered the labor-force toward the close of the 1960s. The most obvious difference between those contrasted views of management philosophy, is typified by the currently reigning generation's emphasis on short-term gratification, and a matching virtual hostility to the reality of medium- to long-term physical capital factors.

If we assume a U.S.A. today which is attuned to its opportunities in a world affected by the rise of Asian populations, our nation's long-term survival depends upon making ourselves useful, even virtually indispensable to that larger world. This means that we must orient to a role as a science-driven, cutting-edge economy. We must muster the organic advantage of Classical European scientific-artistic culture to the utmost, to become again the leading nation-state producer of scientific and artistic ideas on this planet.¹⁰ This means, in turn, the required emergence of a higher than present standard of professional excellence for graduation from educational institutions at about the age of twenty-five years, with heavy emphasis on professionalism in physical science and Classical artistic culture: a direct repudiation of, and reversal of the ruinous existentialist irrationalism of the Congress for Cultural Freedom.

The fact that our national economy must thus be based on a quarter-century of investment in producing professionals of that quality, defines the basic physical capital cycle of our national economy as a quarter-century span. All other capital cycles must be measured against that quarter-century standard. This means, also, that longevity of the adult population must be promoted, not to waste the investment in developing our labor-force as a whole.

Among the most significant of our physical capital investments, are public investments in basic economic infrastructure. These include large-scale water-management and related environmental systems, power generation and distribution, mass transportation, health-care systems, educational systems, and so on. Currently, our principal water-management and power systems have a physical capital life-cycle of between forty and fifty years. This also includes capital development of the type of high-technology family farm which we have been driving out of existence during the recent nearly thirty years. It includes industrial enterprises, especially relatively high-technology closely held ones, which are the broad base and backbone of our industrial economy. All in all, the expenditure required to maintain basic economic infrastructure alone, requires an allocation of approximately half our real (physical) national income.

Since approximately 1971–1972, the U.S. (in particular) has been depleting its stock of productive capital, especially in the field of basic economic infrastructure. In other words, we

¹⁰ This fact will be made clear within the treatment of the efficient nature of creative mental processes, within the following, main body of this report.

have been living by eating our economy's legs for dinner. Now, forty years after that epidemic of autogestion was unleashed, we are running out of infrastructure. In a similar way, we have been depleting the lower eighty percentile of our family households, while concentrating relative incomes in the upper twenty percentile.

As a result, *the U.S. physical economy today is operating at a net loss on physical capital accounts.* The ultimate financial reckoning this implies, but not the physical reality to be measured, has been postponed, since the 1987 stock-market crash, by Federal Reserve Chairman Alan Greenspan's promotion of a form of "off-track betting" called financial derivatives. In this and other ways, we and our European partners, among other nations, have pyramided an accumulation of increasingly unpayable debt-burdens which we have treated as current income, seeking thus to entertain a population lulled into a sense of false security by reliance on a growing mountain of postponed debt-payments.

During the current Bush Administration, this process of combined moral, financial, and physical decay of the U.S. itself has reached beyond any sustainable limit.

Typical of the precarious state of affairs into which we and other nations have maneuvered ourselves, is the present outcome of a 1975 policy-direction indicated by former Secretary of State Henry Kissinger as NSSM-200. Kissinger proposed a radically physiocratic view of the future of our planet, based on managing populations in a way deemed advantageous to the powers investing in control of the world's raw materials. The genocidal treatment of Africa since that time, typifies the practice, of eliminating sovereign nation-states, and reducing their populations, for the advantage of those appropriating the continent's raw materials. This policy is now the prevalent policy of the leading powers of the world.

Presently, the world is dominated by a mad scramble for control of the principal raw materials of the world. In this scheme there are, presently, four principal powers: the U.S.A., western and central Europe, Russia, and China.¹¹ The former three are dominant factors in control of raw materials, while China is the chief bidder on the world market for such materials. The arrangement is, in fact, a cannibals' feast, a struggle to determine who, ultimately, eats whom.

Immediately, the monetary-financial systems of the world have virtually depleted all financial resources excepting the margins of nominal financial-derivatives' incomes based on speculation in raw materials involving those four powers. The profitability of the financial markets generally now depends on the spill-over, into financial markets, of the margins derived from hedge-fund speculation in raw materials markets.

¹¹ This includes the British Commonwealth as part of the western and central European component. Currently, the Anglo-Dutch Liberal financier-oligarchical interests steered from London are, for the moment, in increasing control over the relevant policies of the governments of the continentals.

For example, the rise in price of petroleum toward \$60 a barrel and higher, to as high as \$100, or, quite possibly, even higher, is not a reflection of shortages; there is a surplus of oil for purchase now. The price of petroleum is based upon the speculative effects of financial-derivatives operations in the great raw-materials game. Not only petroleum, but virtually all principal minerals are subject to soaring price-levels under conditions of collapse of the current levels of consumption. This present, virtually global, raw-materials speculation is the greatest of all John Law-style bubbles, the greatest folly which could be concocted in the pursuit of feckless greed.

The only possible remedy for such a global situation, is a comprehensive general reorganization-in-bankruptcy of the present world monetary-financial system. The only alternative to that measure would be the very early collapse of the planet as a whole into a new dark age, during which the world's population might be expected to fall below a billion living individuals.

Such is the wisdom of Alan Greenspan, and many others, whose foolishness has created this mess.

The only solution for this menacing situation is to employ the precedent of President Franklin Roosevelt's defense of the general welfare, as a progressive general reform of the system, a reform culminating in the 1944 Bretton Woods, fixed-exchange-rate system. The only alternative to that reform is a new dark age for the planet as a whole.

The driver for economic recovery under such monetary-financial reforms will be massive increases in employment in the U.S.A. and Europe through investment in basic economic infrastructure. The initial impetus for increase in employment, and therefore social stability, will come from employment in rebuilding lost public infrastructure, and using the stimulus of that public activity as the basis for a growing market in the private sectors.

To organize such urgently needed reforms, we must start from physical capital-cycles, rather than financial ones, and bring financial-capital cycles into conformity with standards set for improvement and maintenance of physical capital. This means, of course, obliging the present generation in management positions to change their ways of thinking, back to the kinds of thinking about capital cycles which prevailed in the U.S. prior to 1964.

The following three elements of the main body of this report will now develop the concepts which will indicate the way in which the role of physical-economic capital cycles should be understood, and treated for such various, complementary purposes as public education, analysis, and policy-planning.

1. Johnny the Robot

Whatever else happens during the coming weeks, the world is already overripe for a plunge into what threatens to be the deepest world monetary-financial collapse in history. Earlier this year, wildly desperate measures were taken, by a combination of governments and financier-oligarchical groups, world-wide, who agreed to postpone the inevitable collapse of the world's present monetary-financial system until some short time after the U.S. general election of November 2, 2004. Whether the additional consequence of that decision was intended, or not, the effect of actions to postpone the collapse was also a decision to heat the equivalent of the nitroglycerin of the collapse of the present world system, ensuring a far bigger explosion, after November 2, 2004, than might have occurred earlier.

In the meantime, many people wished to believe those wild lies, contrary to all evidence, of promised growth and recovery, of the Bush Administration. They believed only because they devoutly wished to believe in a consoling delusion, like the condemned man at the guillotine, who believes that the knife, magically, will not fall. Now, the temporarily postponed bill is being presented for payment.

Now, the possibilities for postponing the inevitable, have nearly run out. This time, the postponed payment will be made, at greatly increased carrying charges, upon someone, in one way or another. The general rate of growth of postponed debts now, is governed by the characteristics of a bubble of financial-derivatives charges being used to create the illusion of profitable growth in financial markets: the ballooning price of petroleum, and matching trends in other mineral speculation, is the marker of this presently hyperinflationary trend in the financial markets as a whole.

So, the presently existing world monetary-financial system is now hopelessly, immediately doomed. The immediate alternatives are either a probably very short-lived attempt at installing a Nazi-style fascism world-wide, or a sweeping reform based upon the constitutional precedent of President Franklin Roosevelt's leadership of the U.S. 1933–1945 economic recovery to emergence as virtually the only economic power on the planet at the time of his death. There are, virtually, no other alternatives now available.

Thus, in the extreme case, if the needed, revolutionary changes are not made in a rather prompt way, the probable result would be a rapid plunge into a planetary new dark, of at least several generations duration, during which we might expect the levels of world population to collapse significantly below one billion living human individuals. This would be the realization of H.G. Wells' wet dream in his "Things To Come," a dark age, yes, but with no happy utopian ending as in the Wells' film.

The leading role which the U.S. might play in dealing with this presently onrushing collapse is crucial. For various reasons, the U.S. is the only nation, which, organically, if under good leadership, rather than Bush and Cheney, could lead in organizing a world recovery from the presently onrushing world collapse. Without such action from the U.S.A. now, western and central Europe are doomed to early disintegration, both economically and politically. Unless the next U.S. government follows the precedents set by President Franklin Roosevelt during the period beginning March 1933, the world as a whole will be plunged in a deep world economic depression, from which few presently existing nations will ever re-emerge in recognizable form.

Let no part of the world be so foolish as to hope for comfort from that embarrassment of our U.S.A. Neither Europe, especially under depressing burden of its present European Union's composition, nor any part of the world outside the U.S., has presently the constitutional political character of its institutions which would be necessary to initiate the kinds of measures which would lead the world at large out of this presently onrushing cataclysm.

So, since 1944–45, both for better and for worse, the U.S.A. has been the apex of a world-wide economic, military, monetary-financial system. That is still the case today. If the U.S. goes down, the world's system goes with it; there exists no workable solution for the present world crisis, except a U.S. return to a role as the representative of a world system akin to President Franklin Roosevelt's design, and that under U.S. leadership as *primus inter pares*.

For example, if the value of the U.S. dollar sinks suddenly to the level of about \$2.00 to the Euro, and still falling, a few weeks or more after the November 2, 2004, election, what happens to the reserves and economy of the China which is presently the major bidder on world raw materials markets? What happens to China's exports, and so on, and so on. Where does the world price of petroleum go, then? So-called "supply and demand" enter a phase of discontinuity. Most of the banking systems of the world go into a tailspin, while the mortgage-based security markets of the U.S.A., the U.K., and many other places simply disintegrate.

Only the U.S.A., if it were to follow the precedents set by President Franklin Roosevelt, could lead effectively to bring international affairs into a controllable state of order. Europe could not replace the indispensable role which the U.S. must play. The reasons Europe were presently incompetent to provide competent leadership include the following. First, Europe is still corrupted by central banking systems which reflect the Anglo-Dutch Liberal System; it is that Liberal system which must be discontinued, if Europe is to be saved. Second, the aftermath of the conditions imposed upon Germany and other parts of Europe, by the U.K., Mitterrand's France, and the U.S.A., in the wake of 1989, have nearly destroyed Europe's ability to respond to crisis in an effective way. The discontinuation of the deutschemark, in

favor of the minestrone currency, the Euro, has been crucial kind of destructive factor in the present complex of crisis.

In sum, the same exceptional qualities of the U.S.A., which enabled Franklin Roosevelt's U.S.A. to ensure the margin of victory over fascism, and to rebuild the shattered post-war economies of Europe, are still a crucial marginal factor in defining the unique sort of leading role which must be played by the U.S.A. today, if the world is to escape a cataclysm.

It would be false to raise the objection that this would mean putting the world under the boot of "U.S. imperialism" in this matter. The U.S.A. has never been, and must never seek to become an empire, neither a U.S. empire, nor a part of a greater empire of the privileged of an English-speaking world. Despite the Liberal imperial influences of braggarts and wretches such as Teddy Roosevelt and Ku Klux Klan enthusiast Woodrow Wilson, it is not in the nature of the U.S. Only a common solution which maintains and strengthens a system of respectively sovereign nation-state republics, under the principle of international law established by the 1648 Treaty of Westphalia, will save any part of the world as a whole. We are unique only in the respect that only an American System of nation-state government, under our uniquely appropriate Federal Constitution, can provide the matrix on which a viable replacement for the present, hopelessly bankrupt Anglo-Dutch Liberal system can be presently founded.

So, the only possible, practicable solution for this crisis, is to invoke the relevant established precedents of the experience of our constitutional form of U.S. government, in a way rooted in the heritage of the Franklin Roosevelt Administration. Therefore, it would be impossible to overcome the global economic collapse in progress at this time, without adopting the precedent of the methods used by President Franklin Roosevelt to deal with the great depression of the 1930s. It is in that nature of the human mind, which sets mankind apart from, and above all other living beings, that renaissances must always be grounded in a launching-point adopted from a relevant place in the cultural development embodied within us from a relevant past.

However, those methods, by themselves, would not be sufficient. As I have written at the outset of this report, we must also go much deeper into the problem which confronts us today. We must also mine the deeper implications of the sources from which Benjamin Franklin and his associates crafted that original American System of political-economy as summed up by Alexander Hamilton. That indispensable practical attention to those deeper implications, is the subject of this report.

The inherent, characteristic severity of the presently onrushing world crisis, is such, especially after forty years of the U.S. and Britain leading the formerly industrialized nations into a virtually suicidal form of "post-industrial" madness, that it would be far worse than futile to

attempt to rebuild a viable world economy on the basis of presently conventional kinds of European monetary systems. The existentialist irrationalism of the so-called “anti-Communist” (but actually anarcho-fascist) Congress for Cultural Freedom, has destroyed the ability of presently reigning, essentially lunatic institutions of post-1964, “post-industrial” custom to revive the U.S. or European economy, without immediately uprooting the existentialist cultural paradigms of that Congress for Cultural Freedom.

Only a rapid, revolutionary return to a strictly “Hamiltonian” form of U.S. monetary system and economic policy, could enable the U.S. to lead itself and its principal international partners, out of the presently onrushing cataclysm. Only an explicit emphasis upon the Abraham Lincoln and Franklin Roosevelt precedents could mobilize, from within the cultural legacy of generations of our people, the sure-footed sense of direction which enables us to march together toward a hopeful common destiny.

My leading personal function in all this, is to present my government, and others, with an insight into the methods without which a necessary recovery of both the U.S. economy, in particular, and, also, the world system, could not occur.

Therefore, the special subject of this report is what I have indicated by the short term, “animations.” Unfortunately, prior to the moment of this report, very few among today’s university graduates, among many others, have the slightest inkling of the profound meaning of that term, “animations,” as I employ it here. That widespread ignorance, among modern university graduates, of what is one of the central principles of the history of European science since ancient Greece, is a crucial part of the story which must be summarily explained here. After that explanation is given, the essential role of what I designate by the short title of “animations” will be put within reach of the patient reader’s comprehension.

First, I must summarize the characteristics of the disease which has brought about the virtual destruction of what had been, forty years, the world’s greatest nation-state economy, our own. I explain the root of the infection which caused this catastrophe, and then present the heretofore little-known principles and methods on which a viable modern economy now depends. We begin with attention to a combination of special factors of the recent sixty years which have made the present threat to civilization more deadly than that associated with the preceding two world wars. We begin with the central role of Bertrand Russell’s influence.

1.1. Bertrand Russell As a Present Factor

The problem which makes today’s onrushing world depression a qualitatively worse threat than that of the 1930s, is the introduction of certain causes for this depression, causes whose effects now go deeper, and are more deadly than those immediately dominant during the 1930s crisis. In part, this is because these causes are more vicious in their effects; in part, it is

because the forty-year physical and intellectual degeneration of the U.S.A. has done far greater, more deep-going damage to the U.S. physical economy and productive capacity of its people than we faced in 1933; in part, the fact that nuclear weaponry and other developments have made the world relatively smaller, and qualitatively more dangerous than three quarters of a century before.

The most direct way of pointing to the identity of the most special such corrupting factor, is to turn attention to the work of several virtual clones of a man who was in fact the most evil man of the Twentieth Century, the same, late Bertrand Russell who concocted the utopian form of imperial strategic doctrine revived by former U.S. Secretary of Defense and 2001–2005 U.S. Vice-President, the beast-man and sociopath, Dick Cheney, of “world government through preventive nuclear warfare.”¹² The language has changed slightly since 1946; today, the preferred code-word for “world government” is not “imperialism,” but “globalization.” Russell is not the original cause of the problem, nor is the problem in any sense a unique product of his Mephistophelean mind; but focussing on his role leads us in the quickest way to locate the typical characteristics of the deeper and broader nature of the problem. The Russell syndrome best typifies the most influential causes for the lack of technical understanding of the most crucial principles of economic science among populations of university-trained economists and others today.

This brings us, now, to the matter of Bertrand Russell’s devotee Johnny the Robot, otherwise known as the late John von Neumann.¹³ Von Neumann typifies the worst of what is viciously wrong with taught and practiced academic economics doctrine today. Shortly, here, I shall explain why.

¹² In *The Bulletin of the Atomic Scientists*, September 1946, and other locations. The concept of using fission weapons for a war intended to bring about “world government” (e.g., world empire) was first proposed publicly by H.G. Wells in the introduction to a 1913 novel. At that time, Wells intended radium weapons. Later, after Wells and Russell declared their open alliance on the basis of Wells’ 1928 *The Open Conspiracy*, the idea of a utopia premised on a war which virtually destroyed civilization, as in Wells’ *The Shape of Things To Come*, provided the setting for Russell to exploit his network of relevant European scientists to push the U.S.A. into developing the nuclear-fission weapons intended to terrify the world into submitting to world government. Once the Soviet Union had gained priority in testing a deployable thermonuclear weapon, Russell dropped preventive war with fission weapons, and worked, with Soviet leader Khrushchev, the Pugwash group, and others, on the idea of using the mere threat of general thermonuclear warfare as the lever for forcing the nations to submit to world government.

¹³ As the reader will discover, below, the simplest demonstration of relevance for this report, is: attention to the practical implications of this relationship between Russell and his protégé von Neumann; the combined implications of von Neumann’s expulsion from Göttingen University by David Hilbert; and “smiling Johnny’s” hatred against Kurt Gödel over the issue of Gödel’s famous 1931 demolition of the central thesis of Russell’s *Principia Mathematica*, a thesis also central to all of the mathematical-theoretical work of von Neumann, including the central features of von Neumann’s and Morgenstern’s *Theory of Games and Economic Behavior*.

As I have just written, above, the presently onrushing doom of the world's current monetary-financial system threatens now to become a far worse calamity than the great depression of the 1930s. This difference is not one of mere degree; the difference is qualitative. The root of that difference lies in the role of a rabid ideology which is merely typified by von Neumann's and Morgenstern's *Theory of Games and Economic Behavior* and by Norbert Wiener's *Cybernetics* and *The Human Use of Human Beings*. Both of the sets of these devotees of cultural decadence were the intellectual spawn of that the true Mephistopheles of the Twentieth Century, Bertrand Russell. Typical of the decadence produced by Russell and his acolytes, such as Wiener and von Neumann, as spread during the second half of the just-closed century, is the work on so-called "artificial intelligence" at MIT's RLE by Russell's, Wiener's, and von Neumann's dupes Marvin Minsky and Noam Chomsky.

The doom of society implicit in the way the "artificial intelligence" dogma of von Neumann, Morgenstern, Wiener, Minsky, Chomsky, *et al.* has been spread during the past half-century, is to be summed up in the following terms.

Russell's *Principia Mathematica* carried to a radical extreme the absurd belief that all scientific knowledge could, and should be derived only from an arithmetic based upon a radically reductionist system of unreal, positivist, symbolic, axiomatic assumptions.¹⁴ As Russell himself emphasized in explicit, published statements to that effect,¹⁵ he was a pro-feudalist utopian, like his principal co-conspirator H.G. Wells.¹⁶ The schemes of this pair of Fabian liberal imperialist rogues, have been the principal source of inspiration and guidance for the evil done to the world, notably including the U.S.A. and Europe, since the death of Franklin Roosevelt. What is most notable for us here, is that, as we shall see, Russell's crude definition of sense-perception itself, is key to his greatest crimes against humanity, those crimes continued by Wiener, von Neumann, *et al.* The use of a crude, fraudulent definition of the nature of human sense-perception by Russell and his devotees, is key for recognizing the way in which he sought to eliminate competent science from the practice of modern nations. By that means, he serves the evil Zeus of the *Prometheus* trilogy, by ordering that man be denied that specific faculty of knowledge which sets man above the apes and other beasts.

¹⁴ Cf. Kurt Gödel, "On formally undecidable propositions of *Principia Mathematica* and related systems (1931)," *Kurt Gödel: Collected Works*, Vol I. (Oxford: Oxford University Press, 1986), pp.145–195. Although I am scarcely satisfied with Gödel's argument there, the fault there lies in his obligation to state his case in terms agreeable, as to form, with the audience addressed. Notable, for our purposes here, is the devastating attack on the dogmas of not only Russell, but also von Neumann. Those who would deal rigorously with physical-economic processes must treat with such matters, and that with a relevant competence respecting the deeper physical-geometric implications of mathematical thought.

¹⁵ Cf. Bertrand Russell, *The Impact of Science on Society* (New York: Simon & Schuster, 1953).

¹⁶ H.G. Wells, *The Open Conspiracy: Blue Prints for a World Revolution* (London: Victor Gollancz, 1928).

Russell, the aristocratic, Fabian author of the liberal imperialist doctrine of “preventive nuclear warfare,”¹⁷ states his motivating, systemic hatred of the very existence of the United States in his 1953 *The Impact of Science on Society*. There, as in other of his published locations, he foresaw, hopefully, a return to medieval, feudal conditions, when “the present urban and industrial centers will have become derelict, and their inhabitants, if still alive, will have reverted to the peasant hardships of their medieval ancestors.” Look at Ohio and Michigan, since as recently as 1990, to see the fruit of Russell’s stated desires. He was shameless in putting forth his motives: “As for public life, when I first became politically conscious Gladstone and Disraeli still confronted each other amid Victorian solidities, the British Empire seemed eternal, a threat to British naval supremacy was unthinkable, the country was aristocratic, rich, and growing richer... for an old man, with such a background, it is difficult to feel at home in a world of... American supremacy.”

Russell hated the U.S.A. and sought to destroy it by means of a vast conspiratorial network, including the circles of H.G. Wells’ followers, followers which have penetrated the U.S. higher educational institutions, such as the University of Chicago, and Russell’s nest of Hungarian-exile and other atom warriors around Princeton. More important, Russell hated the human species itself, and sought to induce his devotees recruited from among the ranks of science, to promote that intention.

After some indispensable observations on Russell’s explicitly political strategic motives, we shall focus upon the way in which Russell seeks to take the human out of man: the issue of *animations*.

Nonetheless, in spite of the obvious fact, that Russell played a crucial leading role in the subversive and related efforts to destroy the U.S.A., we must not allow that to distract our attention from the fact that it was the generality of the Liberal Imperialist crew of the Fabian Society, as typified by Prime Minister Tony Blair today, which has shared with Henry Kissinger’s former Harvard patron and Nashville Agrarian William Yandell Elliott, the intention to bring the U.S.A. into the role of a mere member of a new form of Anglo-American imperial power, a new version of an imperial, British monarchy-led Commonwealth.¹⁸

Underneath the adopted ivory-tower posturings, Russell was essentially a crude thug in practice. The archly affected elegance (and coordinate preciousness) of much of his language is largely subterfuge, the affected manner of the professed poisoner whose minions actually perform their slaughters with an axe. He used his Sophist’s feral knowledge of the custom of

¹⁷ *The Bulletin of the Atomic Scientists*, September 1946.

¹⁸ Cf. Henry Kissinger’s May 1982 London Chatham House address praising Winston Churchill’s triumph over the deceased Franklin Roosevelt.

academic circumlocution, to distract the simple-minded from the essential fact that Russell was a beast-man, like anti-semitic Grand Inquisitor Torquemada, not a creature of elegantly Classical, ironical nuances.

In this connection, we must not overstress the role of the British monarchy as such; it was the 1763 Treaty of Paris which established the British East India Company, not the British monarchy of that time, as a de facto world empire. This was the imperial triumph of a Venetian-style financier oligarchy; it was a triumph of an Anglo-Dutch Liberal system, whose powerful controlling interest was, and remains a cartel of financial oligarchical families roughly corresponding to the same Synarchist International which brought much of continental Europe into a Hitler-led system of fascist regimes over the interval 1922–1945. That system, like Russell, considered the American System of political-economy as the enemy to be destroyed, and to destroy it by induced self-corruption, as was done to Oscar Wilde's Dorian Grey, if the dirty deed could not be done by direct application of crushing force.

The American Revolution, which Russell and Wells hated so fiercely, had been a direct consequence of a reaction against the attempted destruction of the American colonies by the financier-oligarchical powers which had triumphed through that 1763 Treaty of Paris, the powers which had established the British East India Company as an empire. Not only American patriots, but the best minds of all Europe, including England, Scotland, and Ireland itself, rallied behind the internationally celebrated scientist and American statesman Benjamin Franklin against the evil effects of that 1763 treaty. They rallied so, for this purpose, behind the American cause. They rallied so, because they understood that the common defeat of the British and Habsburg empires in defense of the American Revolution, was the cause of freedom for all humanity.

Later, the combination of the victory of Abraham Lincoln's U.S.A. over Palmerston's and Napoleon III's treasonous, racist puppet, the Confederacy, and the surge which established the U.S.A. of the 1876 Philadelphia Centennial celebration as the world's leading and most progressive agro-industrial power, defeated Palmerston's aims at physical subjugation of the U.S. republic; but this victory thereby impelled Anglo-Dutch imperial Liberalism to choice of a repertoire of other means, chiefly subversion of the kind employed by the British Foreign Office's Aaron Burr and the lying Sir John Robison, earlier. Russell's methods of subversion were at the center of the Fabian Liberal Imperialist design against the U.S.A. for the Twentieth Century, and, still today, beyond.

It must be emphasized here, that what frightened the Anglo-Dutch Liberals about Lincoln's victory over Palmerston's plots, was not the physical power of the U.S.A., but the influence the U.S. model had, especially from 1876 on, in influencing the strategic economic policies of Germany, Italy, Russia, and Japan, and, soon Sun Yat-sen's China, too. Although the

Liberals later needed Roosevelt's U.S.A. to defeat Hitler and revive Europe, the idea that this would lead to the spread of Roosevelt's reforms as a world system. meant the threatened extinction of the Anglo-Dutch Liberal-Imperialist way of life. Russell, and kindred reactionary European sentiments, were fully prepared to bring down the pillars of the temple of world economy and its civilization, rather than embrace a successful economic model which, by implication, would lead to the extinction of the Anglo-Dutch Liberal system.

That was the significance of the role played by President Harry Truman and his pro-fascist right-wing "utopians," and was the significance of those anglophile utopians' determination to destroy the American System of political-economy, root and branch, as has been done rather successfully during the recent forty years. The influence of Russell *et al.* on such as Wiener and von Neumann, directs our attention to the inner core of the evil intent of the Anglo-Dutch Liberal program for reform and destruction of the U.S.A., in particular.

Russell's and H.G. Wells' commitment to "world government," eliminating all sovereign nation-states through some form of what is called "globalization" today, is but a new label on an old imperial bottle, another name for the Liberal Imperialism which has been the continuing goal of that Anglo-Dutch Liberal oligarchy since the days of Lord Shelburne. It was that oligarchy which continues to seek the destruction of the U.S.A., as Russell did, in order to remove the chief obstacle to a European financier oligarchy's wet dreams of permanent imperial rule over the planet. It is that oligarchy today which is working through its reach over the European Union to eradicate the sovereignties and dignities of the nations of continental Europe.

Why They Hate the Nation-State

What was the motive for this obsessive fanaticism of Russell and others in their determination to eradicate the existence of sovereign nation-states? As you shall see, Russell's role in science, as conveniently typified by his *Principia Mathematica*, was not merely hatred of the nation-state, but of the human species. In short, he was not merely some lunatic with a crazy utopian theory; he knew exactly what he was doing, as only a truly Satanic personality could have drafted such plans as his and H.G. Wells'.¹⁹

True, Russell broke temporarily with H.G. Wells on the plan to go to World War I. Russell did not abhor the destruction involved; he abhorred the notion of fighting for the advantage of any nation-state, even that of the U.K. His imperial nastiness is not to be mistaken for patriotism of any kind. Later, when Wells' *The Open Conspiracy* sealed Wells' commitment

¹⁹ Do not underestimate the significance of Wells' wicked influence inside U.S. official institutions today. Take the case of Madeleine Albright, her father, and her confederates. She has bragged publicly of her role as a conveyer of the evil of Wells into our diplomatic system. A similar conviction is expressed by Holbrooke, for example. The mess in the Balkans today is a source of relevant evidence on her influence.

to go directly to world government, Russell leaped to embrace this, with all the included horrors which Wells' prescriptions implied. Like the radical advocates of the European Union, these creatures are determined to exterminate the existence of the sovereign nation-state, especially that of Germany.

This commitment by Russell, Wells, *et al.*, had a deep history on which they, and their accomplices drew as strategic guides for the evil they are continuing to do currently. To understand them, look at them against the backdrop of the history of the development of the modern nation-state, against the backdrop of the European civilization founded in ancient Greece.

Despite such inspiring attempts at founding a true republic by Solon of Athens, Socrates, and Plato, in all known history prior to the Fifteenth-Century European Renaissance, the organization of mankind was a system of rule by minorities over majorities which were treated either as herded or hunted human cattle. From the beginning of Classical European culture, in Greece, the enemy of civilized forms of society has been the tragic model presented, against the evil of the Olympian Zeus's ruling oligarchy, by Aeschylus' *Prometheus* trilogy.²⁰

Typical of this factor of oligarchism to be seen in modern times, was the doctrine under which Portugal and Spain organized the African slave trade into the Americas, a slave trade later joined by Spain's and Portugal's financier creditors, the Dutch and British Liberals. The influence of the circles of the virulently anti-semitic forerunner of Adolf Hitler, Grand Inquisitor Tomás de Torquemada, is exemplary in this matter.²¹

²⁰ The principal reference is to the second section of that trilogy, *Prometheus Bound*. This reference will appear as a keystone of the discussion here of the challenge of the science of physical economy for the U.S.A. and other deeply troubled economies today.

²¹ The medieval roots of modern European civilization are to be found in the influence of the Augustinian opposition to Roman imperialism, a Christian legacy expressed by Charlemagne and the Augustinian tradition of Isidor of Seville and Irish monks represented typically by Alcuin. At about the time of the death of Charlemagne, the forces which sought to define Christianity from the pagan-Roman imperial standpoint of the fraudulent "Donation of Constantine," struck back. With the accession of the Emperor Otto III, the son of Empress Theophanu, a Byzantine princess, and the consequent resurgence of Venetian power, Venice, in the role of a financier oligarchy and a maritime power, worked to supersede the decadent Byzantine power. This goal was accomplished through that pact between the Venice oligarchy and the Norman chivalry, creating thus the anti-nation-state, ultramontane system made infamous by the Crusades, from the Albigensian Crusade and the crushing of the Saxon kingdom of England by the Norman invasion. The Venice-led ultramontane force's crushing of the Staufer Frederick II and the promotion of the house of Habsburg as its replacement for the Staufer, had left an important, if vulnerable residue of the tradition of Frederick in Spain, a tradition embodied in the family of Queen Isabella I. Thus, the ruthless takeover of Isabella's family, by deaths and forced marriages which brought the family's traditional adversary, the Habsburgs, into power, transformed what should have been an ecumenical Spain allied with France and England, into the most monstrous butcher of Europe during the course of the Sixteenth and early Seventeenth centuries. The Satanic figure of Grand Inquisitor Torquemada, the forerunner of Adolf Hitler's massacre of Jews, typifies issues of the period from the

The Spanish slave-traders argued, theologically, that since Africans were “only animals,” they could be hunted and selectively herded and bred as herded cattle held in a perpetual state of property, as John Locke’s dogma, and the treasonous slaveholder’s Confederacy’s constitutional Preamble, later prescribed. The result of Spain’s and Portugal’s initiating role in this, was a practice and scope of slavery not known in European civilization before then: even worse than the Roman Empire. A kindred view was taken of the indigenous population of Mexico, of whom it was said, that these are only semi-human, and therefore must be kept in the status of herded peons. The African slavery launched thus by the Iberian Peninsula has been the most monstrous example of this practice, a practice which is continued in principle, as de facto Anglo-Dutch Liberal Africa policy today; but, the reduction of the majority of humanity to hunted or herded cattle, is a characteristic feature of known societies as far back as records exist.

However, at that time, the principal target of Grand Inquisitor Torquemada and his like, was the ongoing emergence of the modern nation-state in France and England, a form of state which threatened to erupt in Isabella’s Spain. African slavery was used as an asset of the ultramontane dogma of Spain’s new Hapsburg dynasty. The application of the Spanish Inquisition in the closing decade of the Fifteenth Century, is of a piece with the launching of the later infamous wave of religious wars of the 1511–1648 interval, warfare which had been organized and was perpetuated in the effort to drown the emergent nation-state cultures of Europe in their own blood. These religious wars, like those launched earlier by the ultramontanists’ Thirteenth-Century Holy League, wars which led into the New Dark Age, had also been intended to crush the threatened emergence of sovereign nation-states dedicated to the promotion of the common good of all of the people.²²

late-Fifteenth through mid-Seventeenth centuries of modern European history. The Fifteenth-Century Renaissance is to be recognized as that birth of the modern sovereign nation-state republic which had been sought in western Europe since Charlemagne, and in Europe at large since Solon of Athens.

²² This dogma of the Spanish Inquisition has persisted as a principal cause of the right-wing cultural and political oppression of both U.S. citizens of African descent and Central and South Americans of pre-Columbian origins inside the Americas, including the U.S.A. itself, still today. As manifest by that legacy of the Confederacy so visibly alive in certain southern states and elsewhere, still today, the imposition of the Spanish doctrine, that Africans are animals to be culled for permanent status as “property,” is still unremedied to the present day. This was the basis for the dogma of the French-British-Spanish alliance which put the Habsburg butcher Maximilian on the re-created imperial throne of Mexico. This is key to a rational understanding of the issue of “reparations for slavery” under discussion inside the U.S. today. It is the unresolved cultural damage to those of African descent who did not succeed in freeing themselves, as Frederick Douglass did, which parallels a similar problem of continuing cultural injustice imposed upon a significant portion of U.S. and Mexican persons victimized by the Hispanic doctrinal legacy of peonage. Without enabling today’s victims of such a continuing atrocity by the radiated influence of bestial dogmas of principally Hispanic origin, no justice were ever done for crimes perpetrated by the Hispanic “right wing” and its Anglo-Dutch Liberal and other heirs down to the present day, centuries later.

Since the A.D. 1439 ecumenical Council of Florence, which, like France's Jeanne d'Arc, set forth the principles for liberating humanity from the implicitly Satanic evils of the medieval Norman-Venetian form of ultramontane tyranny, globally extended modern European civilization has been constantly threatened by the Romantic, ultramontane tradition of the Venetian financier oligarchy, as incarnate today chiefly in its current offspring, the Anglo-Dutch Liberal financier oligarchy and its lackeys. Over the centuries since 1439, to the present date, those characteristic features of the modern nation-state republic, such as the Winthrops' Massachusetts Bay Colony and our Federal Constitutional republic, have been the target of a consort of financier oligarchy which is determined to return the political order of the world to an approximation of the anti-Charlemagne, Norman-Venetian ultramontane system which persisted as triumphant during most of the period from approximately A.D. 1000 to 1400. In former times, until the 1648 Treaty of Westphalia, the Habsburg dynasty was the chief political instrument of that ultramontane form of imperialism. During the interval 1763–1848, as the Habsburg power became virtually a mere appendage of the new Anglo-Dutch Liberal system, the Anglo-Dutch Liberals' British Empire in its sundry, successive guises, has been the most efficient adversary of a principle of universal human freedom.

Here, in that history, we shall also find the pro-Satanic, oligarchical root of Bertrand Russell's hatred of the United States.

Russell's rightly notorious *Principia Mathematica* expresses the distilled essence of his virtually satanic political philosophy. Now, having made the essential introductory point about the history of the issue, let us situate the significance of Russell's relevant own role in modern political-economy.

The Masters and Their Slaves

The key to understanding the role of the Mephistophelean Russell is the following set of strategic policy precedents from history.

For as far back as we know a history which is both documentable, and that documentation validated by physical evidence, the condition of mankind on this planet was that of virtually a relatively few masters who ruled over many virtual slaves. The Grand Inquisitor was only one of the most notable such monsters in that modern history which begins for us with the Fifteenth-Century Italy-centered Renaissance, and the founding, in succession, of the first true modern nation-states as Louis XI's France, and Henry VII's England.

In brief: in each case of known ancient and medieval society, the ruling stratum of society was some form of oligarchy, as illustrated by the mythological, and thoroughly evil Olympian Zeus of Aeschylus' trilogy, under whom a retinue of relatively privileged mere

citizens herded a larger mass of population composed of those assigned to a life of human cattle, as serfs or slaves.²³

There were notable, but temporary exceptions. In the history of that European civilization whose birth was brought forth by help of the midwives of Egypt, the most notable, if brief success of the struggle for freedom in ancient society, the reform of Solon of Athens, has been the cynosure, for European history. It was a reform best known to us today in the form of a poem-letter by the aging Solon to his Athenians, warning them of the way they were wasting the fruits of their struggle for freedom. That image of Solon of Athens, together with the argument of his poem, rings down through millennia to appear in such expressions as the intention motivating the design of the U.S. Federal Constitution.

As you shall read on the history of the principle of animation, below, the foundation of the best of the entire sweep of the European tradition, is associated typically with the coincidence of the Pythagoreans, Thales, and Solon of Athens, and their most notable follower Plato. All four of these leading figures of ancient Greek history were, so to speak, conceived in the shadow of those astronomical instruments known as Egypt's Great Pyramids of Giza. The method of thought of the Pythagoreans and Plato, in particular, attained a level of scientific profundity which has yet to be fully revived in higher education today. Indeed on this account, the academic and related culture of the U.S.A. has degenerated greatly, especially during the recent four decades.

Otherwise, were our recent history not a history of our moral and intellectual degeneration, especially the recent four decades, a George W. Bush, Jr. could not have become President, by accident or otherwise. It is that recently popularized method of thought, which, when contrasted with the contrary, evil, premises of Russell, shows us the cause for the prevalent decadence of our political-economic systems during the recent four decades, most emphatically.

The focal point of the clinical study of the causes of the present world crisis, is fairly identified as "the Prometheus Principle." The short version of the relevant argument runs as follows.

The essential difference between man and beast, is that the human individual is endowed with the power of discovery and efficient application of what are termed universal physical principles, known to ancient Greeks as what modern English usage terms "powers." The entirety of the increase of the relative potential population-density of the human species,

²³ As passionately as some modern academic ideologues might seek to scandalize the Roman (Sicilian) chronicler Diodorus Siculus, his account of the origin of the gods of Zeus' Olympus is the one which rings true to the characteristics of both Aeschylus' *Prometheus* trilogy and other relevant evidence, such as that of Plato's *Timaeus*. The most important historical artefacts are those discoveries of principled ideas whose discovery is passed down to us today from known sources in historical times.

from the level of several millions possible for a species of higher ape, to more than six billion today, is the result of an accumulation and transmission of discoveries of this class. In theology, for example, this power is, factually, the elementary moral distinction of man from those beasts whose specific potential relative population-density is biologically delimited to a fixed relative ceiling.

In the history of mankind, most of the human population has been subjected to the relatively bestial status of herded or hunted human cattle. So, the lower eighty percentiles of the U.S. population are herded in their education, their popular entertainment, and their fate in life outside the HMO slaughterhouse door today. As in the instance of the Olympian Zeus of the *Prometheus* trilogy, the greatest offense against the Olympian oligarchy is to share knowledge of such discoverable universal physical principles (e.g., “fire”) with the captive herded or hunted categories of human cattle.

This same issue is posed by the Olympian Mephistopheles, Russell, in such locations as his *Principia Mathematica*. *Russell demands, categorically, that no system of mathematical form of thought be tolerated, which allows for the existence of the discovery of an actual universal physical principle.* Russell’s obsessive hatred against Leibniz, Gauss, Weber, and Riemann, like the same hatreds which had corrupted J. Clerk Maxwell’s work, is typical of the legacy borne by his academic followers to the present day. The mathematical life’s work of von Neumann and Wiener is a crime against humanity of exactly this form. The doctrines of “artificial intelligence” at the center of the life’s work of Minsky and Chomsky have the same, specifically anti-human characteristics.

Had the enemies of humanity not known this earlier, they learned it from study of the scientific and other intellectual progress of the populations of extended European civilization over the course of the Fifteenth through Twentieth centuries. A high incidence of development of knowledgeable forms of genuinely creative (i.e., *noëtic*) powers of the generality of individuals, threatens to establish a kind of political order in society which would no longer tolerate continued rule by a parasitical form of ruling class and its lackeys. This constitutes a threat to the continued power of an international financier-oligarchical class’s ability to ride saddle upon nations and their governments.

It is the effort to reduce the notion of human behavior, radically, to an empiricist’s confusion of mere sense-perception with knowledge, which is the means by which the modern positivist radical, such as Wiener, von Neumann, Minsky, and Chomsky, seeks to induce the victims, the people, to submit to the satanic role of Prometheus’ adversary, Zeus’ Olympian oligarchy, the oligarchy which Russell considered himself best qualified to represent.

An understanding of the essential elements of the history of this concept, since the time of Thales, Pythagoras, and Solon, is crucial for understanding the principle of animation presented in this report.

We have considered the evil to be resisted. Now, consider the remedy.

2. What Is Animation?

To understand competent European science in general, and also the other achievements of European culture as a whole:

We must, as I have already restated that point here, look back, as the first Jewish prophet Moses did, to the Great Pyramids of Egypt's Giza, to recognize the source from whence the Greek foundations of European science, such as those of Thales and the Pythagoreans, took the key, called "*sphaerics*," to the geometrical principles of competent physical science and music.²⁴

Admittedly, study of ancient solar-astronomical calendars shows the fruits of observations made by great transoceanic maritime cultures during a time, more than 20,000 years ago, when the world's oceans were still approximately 300–400 feet below their level today. Traces of known cycles of the regular migration of the Earth's magnetic pole, are included. Traces of calendars which can be determined to correspond to cycles dating back approximately 200,000 years, are included in this. However, Egyptian astronomy as reflected in the Great Pyramids from just under 5,000 years ago, points to special features of an Egyptian influence on the Greeks not matched by anything directly traceable from Mesopotamia, for example.

The most crucial of the implications of Egyptian science for the development of European Greek science, is that, as in the hands of Thales and the Pythagoreans, the Egyptian astronomer's physical-geometric method, of "*sphaerics*," provided the Classical Greece the foundations, in astronomy, for the strict definition of what are truly universal physical principles of scientific knowledge and practice. The result was knowledge of principles not only superior to, but explicitly contrary to reductionist mathematical methods such as those of our contemporary empiricists.

Unfortunately, this superior method, which was introduced to, and developed within ancient Greek knowledge of science, came quickly under savage attacks by Greek factions such as the

²⁴ There are three great Moses in known history of the Jews: Moses of Egypt, Moses Maimonides, and Moses (Dessau) Mendelssohn. The first could not have walked in and out of Pharaoh's presence, as he did this on notable occasions, had he not represented a great power, including the power of the Egyptian scientific intelligentsia, in which the arrogant Pharaoh stood in awe.

Eleatics, Sophists, and other reductionists. These reductionists attempted to eradicate the concept of what became the modern experimental science of the post-A.D. 1400, modern European civilization, the modern civilization of Nicholas of Cusa, Kepler, Leibniz, Gauss, Dirichlet, and Riemann, the science based on discovery efficient universal physical principles such as those of Kepler, Leibniz, Gauss, and Riemann. Nonetheless, despite that corruption by the Eleatics and other reductionists operating under the influence of lunatic religious cults such as that of the Olympian Zeus and the Apollo cult at Delphi, the heart of Greek science was known to and preserved by Plato, and was continued by the Platonic Academy, for the ultimate benefit of future humanity. The benefit for us today was created with some efficiency and fruitfulness, through the work of such followers of Plato among leading ancient minds as Aristarchus, Archimedes, and the great Eratosthenes.²⁵ This is the benefit modern civilization has inherited, despite the intervening collapse of culture associated both with the rise of the Roman Empire and medieval European ultramontaniam.

As you will come to know, in the course of the pages following this: the bitter fight between Plato and his, and Socrates' sundry varieties of Sophist and other reductionist opponents, can only be understood efficiently from the standpoint of recognizing what I have already emphasized here, as that inherent evil of the alleged gods of Zeus' Olympian oligarchy, the oligarchy whose role Aeschylus emphasized in the second, *Prometheus Bound*, section of his Prometheus trilogy.

You will come to know, that that fight is the pivotal issue, the standpoint from which the relevant principles of physical science must be understood, in opposition to all reductionists, today. This situates that method of *animations*, which I outline here, which reveals, and supplants the anti-scientific frauds of the reductionist propaganda popular on university campuses and their blackboards and textbooks today. Eliminating the dictatorship exerted by such reductionist propaganda, still today, is presently crucial for the economic recovery, and for the survival of both the U.S.A., and of civilization generally. We depend upon that now; that is the issue of survival nakedly before us now, as we live under the presently erupting conditions of global crisis.

Only the remedies to which I point in this report, could rescue you, perhaps personally, from the horror now descending upon us all.

²⁵ Aristarchus (of Samos), prior to 300 B.C., demonstrated that the Earth orbited the Sun. It was Aristarchus' observations which were misused, fraudulently by the Roman hoaxster Claudius Ptolemy, to argue for the incompetent, Ptolemaic doctrine of the universe orbiting the Earth. Archimedes of Syracuse was the correspondent of the Platonic Academy's great Eratosthenes, whose measurements of the (North-South) great circle diameter of the Earth provided the foundations for the map of the spherical Earth provided to guide Christopher Columbus' first successful transatlantic voyage.

As this onrushing horror confronts you, you should come to recognize now, that knowing how to use and manage the application of that science to economy, is key to the present survival of civilization from a presently onrushing, global crisis as devastating as that gripping globally extended European civilization, especially that menacing the U.S.A., today. The following introduction to the method of animations, is crafted and applied here for the specific purpose of providing the most efficient way in which to diagnose and prescribe the way in which the long-term partnership between science and economy must be, in effect, budgeted for optimal effect.

You will see more clearly than you had earlier, that from the other side of the matter, the side of civilization's leading enemies, that Bertrand Russell is the Twentieth-Century epitome of the kind of Mephistopheles an ancient evil Zeus would have deployed against the prisoner Prometheus. The methods of reductionism which Russell's *Principia Mathematica* merely typifies in the extreme, are the qualities of the pandemic intellectual disaster spreading infectious lunacy in both the scientific and other communities within globally extended European civilization, still today.

At this point in the present report, we are now prepared to touch the first of the crucial issues of this report explicitly. *What, contrary to the Olympian Zeus, is the quality of mankind which causes Zeus' oligarchy to hate and fear mankind so dreadfully?* What is the specific nature of the human mind which Zeus fears, and Russell hates so bitterly? What is the apparent secret, known to the Egyptians, on which the great scientific and other cultural achievements of the heirs of Thales, Pythagoras, Solon, Socrates, and Plato depended, and on which all successful forms of modern civilization also depend, crucially, today?

Begin that outlined excursion into knowledge with the subject of the fallacies of popular notions of sense-certainty.

2.1 Sense and Certainty

The comparison of the relationship between behavior and sense-certainty among species, even from our experience with the most familiar varieties among mammals, such as domesticated varieties of cats and dogs, should have warned us that, while sense-perception is a functionally indispensable tool, it is never a *direct* representation of the reality which is presumably sensed. *As the lady said, as she rushed her dog back home from the walk, into the shower: Seeing, or smelling, is not necessarily a preferred way of believing.* One variety of dog, my family's Great Pyrenees, does not recognize the image of a dog on a television screen; but, our West Highlands Terrier, will respond to that same TV screen image by flying into a rug-chewing fit, like President George W. Bush, at the flicker of a dog's, or a dog-like animal's image, on the TV screen. Sense-experience is our interpretation of the effect of an unseen universe which impinges upon our body's sense-perceptual organs.

What, then, is the truth which lies beyond the mere shadows, called sense-perception, which the unseen world casts upon our sense-organs? Think of the principle of agapē addressed in the Apostle Paul's *1 Corinthians* 13. We see as through "glass darkly;" or, as Plato expresses this in his *Republic*, the images we take as sense-perceptions are merely comparable to the shadows cast by dim firelight on the irregular surface of the walls of a cave.

For such reasons, we must avoid the ignorant temptation to assume that "seeing is believing." We seek what we know as truth, something which experimental methods enable us to know is the object of the mind, not the mere senses. What we must seek is the object whose active presence actually casts the shadows perceived by means of our merely animal-like powers of sense-perception.

This experimental proof of the existence of an effect which we know only as an efficient kind of object of our mind, enables us *to will* the employment of that principle to cause what were previously experimentally validated as kinds of changes in our universe, changes which could not have occurred except by our translating belief in that mental object into what the English translation of Kepler's 1609 *The New Astronomy* names gravitation, as *the Creator's intention: The Creator's Will*. When we, thus, both discover and adopt the Will of the Creator, we, as society, bring into ourselves the powers we have copied from the Creator's Will as our adopted intention. *Such is the essential empirical distinction of man from beast. This is also the standard of reference for defining a principle of truthfulness in general.*

For all competent varieties of modern science, this treatment of the principle of gravitation by Kepler, is a point of crucial distinction between competent science and empiricism. In empiricism, as defined for them by the legacy of Venice's Paolo Sarpi and Sarpi's most notable house-lackey, Galileo Galilei, motion is defined by the image of the childish game of connect-the-dots, connecting dots within a linear, Euclidean/Cartesian manifold of space, matter, and time. Bertrand Russell and his devotees carry that connect-the-dots childishness to an extreme. Thus, the Anglo-Dutch empiricists, such as Hooke, Locke, *et al.*, around Isaac Newton, imposed a hoax, of "Kepler's Three Laws" on their dupes' reading of Kepler. This hoax was intended to explain away Kepler's discoveries by degrading their interpretation to rules of connect-the-dots within a Cartesian domain.²⁶

²⁶ One of the most crucial figures in transforming a specialist in black magic, Isaac Newton, into a folk-hero of British empiricist ideology, was Abbé Antonio Conti, the Paris-based coordinator of a network of Europe-wide salons built up around figures such as Voltaire. It was Conti's circles in England, including, notably, the notorious theologian Dr. Samuel Clarke, who designed the Eighteenth-Century Anglo-French "Enlightenment's" cult-image of Newton. Voltaire was the most visible organizer of this network of salons, including the cult built up around Maupertuis, Euler, Lambert, and Lagrange, in Berlin. Once the Nemesis of Voltairism in Berlin, Moses Mendelssohn and Gotthold Lessing, were out of the way, empiricist fanatic Immanuel Kant, formerly the official German-language representative of the emotionally distraught David Hume, was employed to produce a scientifically illiterate kind of truth-free, Aristotle-Empiricist hybrid, a hybrid known as Kant's series of "Critiques." The specific fraud of the Newtonians on the subject of Kepler's

This which I have referred to by use of the term “intention,” is the central feature of all Kepler’s completed work in scientific discovery. *This, as I shall illustrate the argument in this portion of my report, is key for discovering the indispensable role of that notion of intention as defining the non-linear principle of animation which is indispensable to all competent treatment of the functional relationships between science and productivity in national economies treated as wholes.*

It was this discovery by Kepler, which led Leibniz to his uniquely original discovery of the actually infinitesimal calculus, and to the related genesis, by him, personally, of numerous entire fields of modern physical science.

This brings us to a review of the related implications of the use of the term “complex domain” in mathematical physics generally, and also in analysis of social processes more broadly defined.

Enter, the Complex Domain

In modern mathematical physics since Carl Gauss’ first, 1799, public attack on the follies of the empiricist fanatics d’Alembert, Euler, and Lagrange, on the subject of what today’s adopted convention identifies as The Fundamental Theorem of Algebra, what I have just said about the distinction between reality and sense-perception, is to be treated under the title of “the complex domain.”

However, actually, that notion of the complex domain was already a central feature of the work of the ancient Pythagoreans, as typified by the Pythagorean Archytas’ solution for geometric construction, for an exact doubling of the cube, which is still uniquely viable today. Archytas’ ancient solution for that, as known to his associate Plato, was a statement of the same principle of cubic roots which was the pivotal topic of Gauss’ attack on the ideologically motivated follies of d’Alembert, Euler, and Lagrange,²⁷ the same issue of cubic roots already posed by ancient Archytas’ solution for geometric construction of the doubling of the cube (see **Figure 1**). *See animation of Archytas’ construction of the doubled cube from a torus and a cylinder.*

These considerations just listed, lead to a consistently competent, proper, geometric understanding of the crucial significance of that concept of the complex domain which was

alleged “Laws,” was their effort to remove all knowledge of the crucial function of the notion of “intention” underlying not only all of the matured Kepler’s work, but also the Kepler-derived discovery of the calculus and the associated principle of universal least action by Gottfried Leibniz. The truth about mere science figurehead Newton, as a half-witted black magic specialist, was exposed during the last century, by John Maynard Keynes, who had been entrusted to open the famous chest of Isaac Newton’s scientific papers.

²⁷ Cf. Gauss (Doctoral Dissertation, 1799) *Gauss Werke*, Vol III. (Hildesheim: 1981), pp. 1–31, with fig. (Latin; German translations are extant).

already implicit in Archytas' referenced solution. It is that notion of the complex domain, so premised, which is the reality behind the notion of complex domain which came more and more into visible play, by name, in Nineteenth-Century physical science around such followers of Gottfried Leibniz's uniquely original conception of the infinitesimal calculus as Gauss, Abel, Dirichlet, and Riemann.²⁸ I shall now summarily describe the appropriate, ontological form of working notion of the complex domain, especially as it applies to my professional specialty, the science of physical economy. The understanding of this, and related connections pervading both ancient and modern European scientific experience, is indispensable for any competent study of the problems of national economic policy-shaping today. After I have outlined the matter, I shall then focus on crucial, included features of the concept. I begin with a discussion of the crucial notion, associated with the use of the German term *Geistesmasse* by the anti-Kantian educational philosopher Herbart, and, then, also by Riemann.

What I have just summarized, in these immediately preceding paragraphs, involves certain essential commonalities among a selected number of respectively ancient and modern developments in scientific method. The more obvious of the common features of these developments, is that all, like the physical conception of the mathematical-physical complex domain as such, involve an *intrinsically sense-invisible* array of mental objects, objects which are nonetheless the most efficient among the acting objects within the domain of experimental physical science as a whole.

These are objects to which Riemann himself refers on one occasion by a special functional meaning for the German term *Geistesmasse* for "mental object."²⁹ However, that specific conception of mental object permeates major works of Riemann, including his habilitation dissertation and his work on Abelian functions. This concept of *Geistesmasse* is, in fact, the pinnacle, subsuming concept of all European science, from Thales and the Pythagoreans, through Riemann and beyond. It corresponds, functionally, to Plato's rigorous definition of the concept of the *Idea*.

²⁸ The creation of the infinitesimal calculus was one of two leading projects which Johannes Kepler relegated to "future mathematicians." The first proper solution for that challenge was delivered to a Paris printer by Gottfried Leibniz, at the moment of his leaving Paris, for return to Germany, in 1676. The further development of that calculus came in the collaboration between Leibniz and Jean Bernoulli, as expressed in the form of the catenary-cued universal principle of physical least action, and Leibniz's related, original definition of the notion of natural logarithmic functions. Concepts in the direction of elaborating a general physical principle of the complex domain were current among French and German followers of Leibniz, such as the circles of Monge, Legendre, and Carnot in France, and Gauss *et al.* in Germany. The relevant connections among German science and the French adversaries of Lagrange, Laplace, and Cauchy, were maintained chiefly through Alexander von Humboldt. Gauss, Abel, Dirichlet, and Riemann, together with experimental physicist Wilhelm Weber, are crucial for the higher form of the complex domain developed by Bernhard Riemann.

²⁹ *Werke*, pp.509–538.

To assist the reader being first introduced to this array of conceptions, I begin the elementary introduction of this notion of unseen, but fully efficient mental objects by comparing a selection of such mental objects: 1) the functionally decisive, but unseen aspect of Archytas' unique solution for the Delian problem (**Figure 1**); 2) Kepler's conception of gravitation (**Figures 2a–b**); and then, 3) Gauss' method in his discovery of the orbits of key asteroids (**Figure 3**); and, finally, 4.) Leibniz's cohering concept of the monad, as coordinate with a universal principle of universal physical least-action. [*See animations of these mental objects of Kepler and Gauss.*] In each of these and comparable instances, the mental object referenced is not susceptible of direct observation by the senses, but its existence as an efficient object, actually controlling those relevant shadows what our senses might perceive, is beyond strictly reasonable scientific doubt.

In known human experience, there are two general classes of mental objects. The first class, on which our attention is focussed at this moment, are those ideas (i.e., *Geistesmassen*) which are located within the bounds of the individual man's conceptual relationship to nature directly, as typified by physical science. The second class pertains to the principles (also *Geistesmassen*) by which a mind is capable of comprehending those principles of interaction, among groups of people in society, which pertain to the equivalent of a mission-orientation respecting society's beneficial controlling action on the physical domain around them. Ideas of this second class belong entirely to the realm of *principles* of Classical modes and standards for artistic composition. The role of irony in Classical poetry, rarely known among university graduates of the recent two generations, is an example of the functional role of principles of Classical artistic composition (*that role of irony must be taught anew*).

These objects, which exist only for God and the human mind, are made knowable for us by a means which animal psychologists would associate with the problem of naive purblindness. Wolfgang Köhler's study of functional features of what he defines as the mentality of apes, is a useful standpoint for making relevant comparisons. That is to emphasize, that newborn infants develop the ability to sort out the processes of perception of a jumble of individual sense-perceptions and their affective correlatives, such that a terribly confusing sensory world around them becomes perceptually comprehensible in a functional way. A similar mental development occurs in the scientist's image of a discovered universal physical principle as a distinct mental object: *this time, not as an object of the senses, but an object of the mind.*³⁰

Pause for a moment to consider an idea which may help you to avoid a commonplace blunder of students in discussing these and related matters. The effect of introducing a

³⁰ There is a famous case from World War II experience which helps to make the point clearer. In the earlier phases of that war, aircraft spotters were rehearsed in identifying the plane by taking into account the images of wing, engine, fuselage, and tail (WEFT). This proved very inefficient and otherwise unreliable. The spotters were then encouraged to catalog a single distinct quality of variable perceptible image (e.g., a *Gestalt*), after which the performance was greatly improved.

previously overlooked principle, is to present one with a kind of discontinuity in your attempts at a regular mathematical extrapolation of what you had previously considered as the relevant principles to be taken into account. That encounter confronts you, from a mathematician's standpoint, with a kind of functional discontinuity in what you had previously, mistakenly, considered an adequate notion.

That is always the effect of encountering what is in effect, for you, a new universal physical principle. Now, as stubborn, reductionist mathematicians will insist, you can always find a mathematical approximation, that confined within the assumed bounds of the ordinary sense-perceptual domain, seeming to nearly bridge the gap the added principle has generated. That mathematician tends to commit the blunder of assuming that close approximation is sufficient excuse for overlooking the principle actually at issue. Fanatics such as the late John von Neumann's circles would tend to do that. *Despite the apparent success of that mathematical illusion, the functional result reminds one of the case of the mathematician who married a plastic dummy because her dimensions were so marvelously close an approximation of a particular real young woman.*

Therefore, the term "complex domain" should be understood as referring to a relationship, which appears within scientific work, between the evidence of mere sense-perception and those mental objects, known as efficient universal physical principles, whose effects are cast on our sense-organs in the distorted form of shadows of those unseen mental objects which are to be recognized as physical principles.

Unfortunately, that kind of mathematical formalist's mistaken notion (*as of the plastic dummy*) of the character of a universal physical principle (the integral principle, the *Geistesmasse*) is often accepted, even among those presumably educated in scientific work. So, those whose miseducation, or simply lack of scientific development so far, has left them functionally crippled in a significant degree, do not think in terms of *a mental object of principle* as something in which a governing efficient intention inheres; rather, they prefer a mathematical formulation which is used as *a substitute for a clear idea of a mental object*. They do not know what principles are; they adopt a substitute, by assigning the name of the principle to a mathematical formulation looked up in a textbook or other variety of cookbook.

In connection with the causes of that widespread confusion over the practical meaning of "principle," Riemann's treatment of Abelian functions has a deeper meaning often overlooked among relevant students. The division of physical-functional space examined there, is often thought of wrongly, less in terms of distinct mental objects viewed positively, than in terms of empirically (e.g., mathematically) calculable boundary conditions. This is illustrated by the foolish criticism, made by the reductionist Clausius, of Riemann's famous

paper on electrodynamics.³¹ A blunder, by J. Clerk Maxwell, for similar, reductionist reasons, was defended by Maxwell, as by the reductionists Clausius, Grassmann, Kelvin, Helmholtz, *et al.*, as his refusal to acknowledge science's profound debts to the experimental discoveries of Maxwell's greatest predecessors in that field, Gauss, H. Weber, and Riemann. As Maxwell confessed in a letter acknowledging his sophistry, his hoax was motivated by a compulsion not to acknowledge "any geometries but our own," the Cartesian-Newtonian scheme.³²

The matter is relatively simpler for the innocent student who has simply relived the act of discovery of a principle by some ancient or other original thinker. That student relives the act of discovery, in the specific sense that the actuality of a crucial element of the mental processes of the original discovery is brought back fully to life in the living tissue of the student's brain. That image of his own mental act of discovery, especially if this personal experience is socialized as in a Socratic dialogue, becomes the mental object which he, or she, then knows from personal experience: *knows as an object of its own internal integrity* (i.e., *Geistesmasse*). The personal name, and circumstances of that original discoverer are not only important to the student, but the experience of the discovery in question has the kind of distinct personality (no mathematician's simulation of a plastic bride) we would associate with cognizing the image of the fact.³³

For the case of objects of Abelian functions, each bounded concept has, not a *symbolic*, but a *species-quality* of integrity, a quality which inheres in the function as a whole, rather than as something within a boundary. Kepler's unique conception of gravitation, as an integral intention, is to be seen mentally in this way.

In all of these cases of the formation of mental objects, whether as corresponding to objects of sense-perception, or as efficient principles not themselves susceptible of direct perception, the development of the mind of the individual enables the individual to, seemingly automatically, form definite *species-images* from any of the manifold views of the subject to which the mind is exposed: either as an implicit sense-perceptual object within perceived physical space-time, or as an experimentally validated mental object beyond direct access by sense-perception.

³¹ *Riemann's Werke*, pp. 288–293.

³² The Ampère-Weber discovery in electrodynamics, as developed by Gauss, Wilhelm Weber, and Riemann, is readily demonstrated by an elementary experimental demonstration, which has often been made by the Fusion Energy Foundation and its successors. The argument was first made to me, during the 1970s, by the distinguished Professor Robert Moon. It has continuing relevance in pointing to another discovery, defined by Moon at the time, in the matter of freeing the Mendeleev periodic table from the paradox of "magic numbers," a crucially important work left uncompleted by the intervention of Professor Moon's 1989 death. The two matters of scientific principle may appear, on the surface, as distinct; but both rest on a common elementary principle of experimental scientific method.

³³ The image of the mathematician's plastic bride is better understood when she is considered in her real-life role as chief mourner at a grammarian's funeral.

Now that I have stated the argument for the distinction between what are merely mathematical cookbook recipes and the actuality, and integrity of an experimentally validated universal physical principle, let us illustrate the functional significance of that distinction in terms of the four types of cases I have listed above.

2.2. 'Anti-Euclidean Geometry'

My use of the term *species*, as excluding the mathematician-Romantic's notion of *symbolic meanings* for defining the specific identity of the experimentally validated discovery of a universal physical principle, requires me to guide the student into the domain of an anti-Euclidean geometry, as the term, "anti-Euclidean" is typified, in fact, by both relevant ancient authorities such as the Pythagoreans and Plato, or modern authorities such as, most notably, Cardinal Nicholas of Cusa, Leonardo da Vinci, Kepler, Leibniz, and Riemann.

As my argument, as stated up to this point, emphasizes an inherent "naturalness" in the Pythagorean standpoint of *sphaerics*, as opposed to the unnatural, perverted state of mind represented by Euclidean or Cartesian reductionism, we must attack that latter, currently pandemic mental disease represented by reductionism, by recognizing the inherent falseness, the fraud which underlies induced toleration for the pathetic state of mind which the reductionist represents. In short, we must pin-point the fraud on which the whole fabric of reductionist belief depends; and, thus, by exposing the fraud to light, allow the imprisoned truth of the matter to escape from the cage of such cruel, inhuman hoaxsters as the Olympian Zeus.

To pinpoint the relevant factor of evil, we put the point in the following frame of pedagogical reference.

The simplest recipe for brainwashing a victim, is to add a set of false assumptions, "A," to what the victim actually, rightly knows, if only in approximation, as knowledge "B" and "C." That is to say, as the artist Fyodor Dostoevsky crafts the relevant imagery: *Satan, like many false "fundamentalist" priests, clad in the robes of the Grand Inquisitor, induces the dupes to believe that the Grand Inquisitor is the agent of Christ, persecutes Christ, and leads the foolish people, such as the current associates of Fernando Quijano, to worship Satan in the name of Christ.* The most important type of the set of assumptions of Type A in the European history of theories of knowledge, is the so-called "Euclidean" model which has served as the counterfeited, Cartesian image of physical space, time, and matter underlying all empiricist and related forms of intellectual corruption down to the present time.

In other writings, I have identified this role of the arbitrary false belief, "A," as the key to identifying and understanding what I have termed, in other published locations, as a "fishbowl syndrome."

Challenged, the victim of such “A, B, C” conditioning will tend to seem to react rationally to discussion of matters belonging under the headings of either “B” or “C;” but, he will insist in interpreting “B” and “C” in a way which is consistent with the off-key set of definitions, axioms, and postulates collected under heading “A.” In any formal educational course of instruction, the infallible warning that such a fraud of fallacy of composition is about to be perpetrated on the students or the like, are words uttered by the academic or populist hoaxster to the effect: “To begin with, it is self-evident that ...”³⁴

I recall vividly, still today how I reacted instantly, as if with a knee-jerk warning, to the effort to sell me that introduction to secondary-school geometry. I have since reflected often on the difference in world-outlook between the relative majority of secondary and university graduates which swallowed such an “A” conditioning, and the more fortunate, tiny minority which reacted, or came to react as I had done.

See the poor fellows going to the blackboard, one after the other, to define a mathematical proposition in terms of Cartesian coordinates: *Pity them, for they know not what they do!* Take, for example, the extensive brainwashing in the cultish, anti-scientific principles of the astronomy of Claudius Ptolemy, even as late as the work of Copernicus and Tycho Brahe. Admittedly Copernicus did come around to approximating the discovery by Aristarchus 1,800 years earlier, Copernicus’ method was still locked within the old Euclidean trap.

The motive for the resistance, still today, to scientific method, as Kepler typifies sanity in science, forces our attention back to the issue of Aeschylus’ *Prometheus Bound*. Whereas, the evil Zeus directly menaces Prometheus, Zeus also threatens, that mankind must not be allowed to know those powers, such as fire, which belong only to the gods. So, the priest of Delphi, or the like, uses a cowardly sophistry in the attempt to accomplish the same net effect. The latter priest tells the humble believer, you must not imagine that you are anything more than a helpless victim of the will of the gods. Witness the Roman imperial expression of that literally Olympian Ptolemaic dogma: the instruction of the wicked priest, that we can admire, and hope to imitate the apparent motions of the heavens, but we must not think of knowing the mysterious power which governs those motions. (*Is a Christian, such as poor doubting Thomas, to be forbidden to recognize Christ? What kind of pagan Roman superstition is that decree?*)

A typical example of this is shown by the practical problem of social policy which the Olympian hoax of Claudius Ptolemy poses. The Olympian insists, that in a society which depends upon mankind’s willful use of fire and other universal physical principles, we must prevent those users from discovering that their power to use those principles shows that

³⁴ So, that lowly *boll weevil* lately metamorphosed as ex-Senator Phil Gramm, argued that there is nothing essential in economics which could not be agreed upon among ignorant men meeting for foolish populists’ gossiping in Gramm’s kitchen.

ordinary men and women have been fashioned in the image of the Creator. That is where hoax “A” comes in.

In effect, under the reign of the doctrine of hoax “A,” in the special case of modern, technologically progressive forms of society, you are mercifully permitted to know “B” and “C.” However, you must first both submit without doubting to hoax “A,” and also interpret what you know of “B” and “C” as nothing different than confirmations of the absolute, higher truth of “A.” That is the significance of the hoax within which Euclidean, or Cartesian geometry is taught as doctrine. It is a hoax which has a special relevance in the context of modern European civilization.

With the rise of modern European civilization, in which the power of nations and others depended upon the development of relatively modern technology, a practice of technological progress, which must be allowed for such as military and related strategic purposes, must be kept relatively harmless in the eyes of the gods of Olympus, by prohibiting the people’s actual knowledge of the nature of that power of the individual human mind which renders scientific-technological progress a willful choice of the ordinary mind. Hence, we have the modern use of Euclid’s, or kindred sets of definitions, axioms, and postulates, such as those of the present-day positivists, as virtually a religious dogma of type “A,” and the derivation, from the Euclidean model of the so-called Cartesian, cook-book model of space, time, and matter. Bertrand Russell’s hoax, as in his *Principia Mathematica*, is a radicalized variant of the Euclidean hoax.

Riemann’s Anti-Euclidean Geometry

The alternative to the hoax of Euclid, is what is typified by Riemann’s 1854 habilitation dissertation. The origin of Riemann’s discovery is as follows.

Modern European scientific developments since Cusa, Leonardo, and Kepler, began to call Cartesian or kindred models into question in a practical way. This was typified by the work of Desargues, Fermat, Pascal, and Christiaan Huygens, much of which echoed the earlier work of Nicholas of Cusa’s influence on Luca Pacioli and Leonardo da Vinci.

During the Eighteenth Century, the leading historian of mathematics of that century, who was also a figure of some direct importance in organizing what became the American Revolution, Germany’s anti-Lockean Abraham Kästner, introduced the notion of the existence of an anti-Euclidean (or, ante-Euclidean, or pre-Euclidean) geometry, a concept which was reflected in a significant way in the first published scientific paper of his student, Carl Gauss, the 1799 paper attacking the incompetence of the Cartesian model of mathematics by the anti-Leibniz, empiricist fanatics d’Alembert, Euler, Lagrange, *et al.*

Later, a poor approximation of an anti-Euclidean geometry, called “non-Euclidean geometry,” was presented by Lobachevsky, János Bolyai, and others, as a genuine step forward from the intellectual sterility of then contemporary Euclidean and Cartesian dogmas. The full intention of Carl Gauss in this matter was not made obvious until the collaboration between Lejeune Dirichlet and Gauss’ student Bernhard Riemann. Riemann’s 1854 habilitation dissertation became, thus, the first modern formal, and bold announcement of a truly anti-Euclidean geometry, and Riemann’s addition of his treatment of Abelian functions to that, has served since as the essential foundations of a modern form of organization of the conceptions of a mathematical physics.

The distinction here is the following. A non-Euclidean geometry accepts the Euclidean scheme in broad terms, but proposes the axiomatic correction of certain obvious errors in it. Hence: “non-Euclidean.” Typical of the failure of the non-Euclidean’s standpoint is the case of Hermann Minkowski’s celebrated lecture on matter, space, and time. He was fully correct in the ringing tones with which he uttered his call for the replacement of matter, space, and time by physical space-time, but his simplified, linearized version of that non-Euclidean geometry led him back into a modified version of the same old trap from which he had proposed that science escape.

Now, that said and taken into account, let us look at the concept of the complex domain once again; for this purpose, let us focus on Archytas’ solution for the geometric construction (*generation!*) of a cube exactly doubling another cube.

Start with sense-experience as we know it from both our own personal experience with the world impinging upon our living body, and as our understanding of that experience has been shaped within us by our experience of historical experience transmitted to us, directly and indirectly. There is no *tabula rasa* (the mind as a “blank slate” from birth)! History is never written freshly on a blank slate. Read the solution to that celebrated Delian problem, by Archytas, the friend of Plato, accordingly, as follows; *thus, let mankind enter the complex domain intellectually, so, during the first half of the Fourth Century B.C.*

In Archytas’ solution (Figure 1), the exact doubling of a given cube occurs only as a process of continuing action, starting from the initial cube, and proceeding in a perfectly continuous manner of action to the point that a cube precisely double the volume of the first has been constructed.³⁵ The process starts with a visible object, and ends with the existence of a mirrored object exactly twice the volume of the first. *This is an example of animation in mathematical physics.*

³⁵ The victim of a reductionist indoctrination seeks to “connect the dots” among discrete steps of construction, rather than conceptualizing an integrated, continuing physically efficient action.

The crucial knowable feature of that process, which enables the action to reach its conclusion, is two distinct forms of action, neither of which is visible to the sensation of the cube. The values, on which the success of the construction depends, are comprehensible to the mind, but are not actions which occur in the sense-perceptual domain of the cubes themselves. This, as the Sixteenth-Century Cardano and the Eighteenth-Century followers of his work, such as d'Alembert, Euler, Lagrange, *et al.*, were to puzzle themselves, takes us into what nitty-gritty Leibniz-hater and empiricist Euler names, and abhors as “the imaginary.”

What prompted both d'Alembert and Euler to commit their frauds (of the “imaginary”) in this matter, was their hysterical reaction against the intervening work of Leibniz, Leibniz's perfection of his earlier (1676) original discovery of Kepler's proposed calculus by work, in collaboration with Jean Bernoulli, on the need to supplant the inferior cycloid notion of a principle of isochronicity (*brachistochrone*), by Christiaan Huygens, by the catenary form of the perfectly infinitesimal calculus of a principle of universal physical least action³⁶ and a corresponding notion of natural logarithms. The ablest of the mathematical empiricists of that time, Euler, attempted to copy Leibniz's calculus by substituting a fraudulent version of his own, and by presenting a case for natural logarithms derived from Leibniz's earlier work, but implicitly denying the fact of Leibniz's then well-known discovery. Leibniz's discovery of his universal physical principle of least action, had already located the real universe within the complex domain, as I have identified that above at various points thus far in this report.

Euler *et al.* committed that fraud in service of their adopted mission, as implicitly mere lackeys of the Olympian Zeus, of preventing even the notion of the possible means for transmission of knowledge of a principle of fire to mortal man beyond some foolish recipe such as “rub two very desiccated empiricists against one another, vigorously.”

Nonetheless, there is no direct leap from Archytas to Leibniz in this matter. Leibniz was a post-1648 representative of the late-Seventeenth-Century moral and scientific renaissance which resumed the continuation of the launching of modern experimental science by Nicholas of Cusa,³⁷ and by Cusa's avowed students and followers such as Luca Pacioli, Leonardo da Vinci, and Kepler. Kepler's discovery of the principle of universal gravitation, is one of the relevant direct successors of Archytas' solution for the construction of the doubling of the cube.

³⁶ This famous discovery by Leibniz was the target of a foolish satire by the monstrously decadent Voltaire, in Voltaire's novel *Candide*. Both Voltaire and d'Alembert, like Jacques Necker, were associates of a London-steered freemasonic cult known as the Martinists, who prepared and steered both the French Terror and the tyranny of Napoleon Bonaparte in the interest of London's Lord Shelburne and Shelburne's Jeremy Bentham-headed London “secret committee,” which trained and deployed Danton and Marat, among others. In the matter of the attacks on Leibniz, we are not encountering wretched old academics, but hate-brimmed right-wing revolutionaries!

³⁷ *De Docta Ignorantia*, etc.

Kepler also brings in the complex domain for his concept of universal gravitation. The heart of his argument is as follows.

Gravitation, Animation, and Ceres

Kepler emphasizes the ironical juxtaposition of three considerations (**Figures 2a–b**; *see also animations*). First, that the relevant planetary orbits are elliptical. Second, that the rate of motion of the planet along its predestined orbital pathway does not express a constant velocity. Third, that the velocity of the planet in its orbital pathway, is determined by a relationship of the planetary motion to the Sun’s position at one of the two centers of the ellipse, such that the area subtended by the planet’s motion describes a function of equal (sectoral) areas, in equal times. The ironies of that observed character of the planet’s orbit are chiefly of two forms: first, the need for an infinitesimal calculus, which can define the relationship between an infinitesimal interval of action along the orbital pathway and the generation of the orbit as a whole; second, the need for a deep study of the physical implications of elliptical functions.

This, it must be emphasized at this point, is typical of the challenges posed by a science of physical economy. The following explanation of that statement will suffice for the moment, before we return to discussion of Gauss’ discovery of the orbit of the asteroid Ceres.³⁸

The deeper implications of Kepler’s original discovery of universal gravitation were forced to the surface by Gauss’ unique success in discovery of the orbit of the asteroid Ceres.³⁹ The crucial feature of this complement to Kepler’s own work, was the development of the infinitesimal calculus by Leibniz, specifically the later refinement of that calculus as the principle of universal physical least action. It must be noted, however, that it had been Kepler who had forecast the existence of the remains of an exploded planet in an orbit lying between that of Mars and Jupiter, an orbit of the Keplerian harmonic characteristics converging with remarkable approximation on the discovered values for the orbits of the major asteroids Ceres and Pallas. Gauss’ methods of statistical investigation in this matter, and later in geodesy, are subject-matters in themselves; but the essential point for our attention here, is that the ability of Gauss to generate an accurate conception of an entire orbit of Ceres from 41 days of incidence of observations by the astronomer Piazzi, is a complement to Kepler’s call to “future mathematicians” for development of both an infinitesimal calculus and a general theory of elliptical functions.

³⁸ Cf. Jonathan Tennenbaum and Bruce Director, “How Gauss Determined the Orbit of Ceres,” *Fidelio*, Summer 1998.

³⁹ The core of Gauss’ reports on this work is available in Volume VII of the *Gauss Werke*, including the original *Theoria Motus Corporum Coelestium*. Also see the Gauss-Olbers correspondence in Vols. I and II of the volumes of appended correspondence included as part of the *Gauss Werke*.

This example of Ceres illustrates the way in which a universal physical principle is expressed in competent mathematical physics. It is expressed in a way which is, in retrospect, fully consistent with Leibniz's principle of universal physical least-action, as situated within the concept of a Riemannian physical geometry.

Simply described, the empiricists, such as Galileo and his followers, situate a trajectory as the effect of an impulse to move an object under a field such as gravity. This notion was thrown into a quandary by Christiaan Huygens' demonstration of the physical-geometric reign of "quickest time" over the process. This work of Huygens was already a first-approximation conception of physical space-time, as opposed to a Euclidean-Cartesian scheme (see **Figure 4**). The error built into Huygens' otherwise brilliant work on both moving bodies and light, was the use of the assumption that the isochronic principle cohered with primary circular motion in the universe, a *cycloid principle* cohering with elementary trigonometric functions. The collaboration of Leibniz-Bernoulli, defining the catenary correctly,⁴⁰ overturned the dependency on the cycloid. The catenary was shown to be the principled representative of the way in which universal physical least-action is ordered.

The study of Leibniz's physical definition of the catenary function, thus situated the acting principle of universal physical least action within a domain cohering with the characteristics of that function (see **Figures 5a–d**, **Figure 6**, and **Figure 7**).⁴¹

The point to be stressed now, is that the set of interrelated cases just arrayed, points to the fact, that the motion of the planet Earth along the pre-existing orbital pathway, is not governed by a continuing or percussive force. The motion is continuous action of a universal physical principle, as expressed by Kepler's constructive-geometric definition of universal gravitation within a Solar System which, itself, has a determined harmonic structure among its orbiting objects. This continuing cause, which the English translation of Kepler terms God's *intention*, is primary.⁴²

In sum, we live in an animated Solar System, an animated universe. It is to the degree that society discovers and applies the notion of animation, as Kepler's standpoint in astrophysics illustrates that principle, that man willfully transforms Earth from a planet which could have

⁴⁰ Overturning Galileo's clumsy folly.

⁴¹ See Animated Graphics for Lyndon LaRouche's "Our Economics Policy: Animation and Economics."

⁴² This use of "intentions" coheres with Christian theology's use of the term as the *intention* of prayer conveyed to God from the person of the communicant. Intention, in this case, as relevant to God's Will: "Pray, let it become God's intention." This notion of *intention* also appears in the matter of the doctrine of the Eucharist, "that this bread be of Christ's body." Intention is an expression of the Will of the Creator, to which man has access by virtue of man's uniquely divine nature to share this power in the universe through human cognitive reason.

sustained no more than several million members of an ape-like human species, to one of more than six billion persons today.

It is to the degree that we discover and master universal physical principles as the principles of animation they are in fact, that mankind is able to maintain and increase that potential relative population-density on which maintenance of even present levels of our population depends.

This is precisely the notion of intention which I have stressed in this report thus far, which is to be recognized in the application of a science of physical economy to the ordering of the physical recovery of that U.S. economy which we, ourselves, as a nation, have willfully ruined over the course of the recent four decades. This means eliminating current reductionist notions of financial accounting and related dogmas of taught economic theory of practice from our nation's practice. It means subordinating financial accounting to a science of physical economy. It means understanding, and applying the principles of scientific progress to revive our presently dying U.S. national physical economy by coming to understand how to reanimate our presently dying national economy.

3. What Is Practical Economics?

By the standards of the present world system, the U.S.A. under President George W. Bush, Jr., is bankrupt. Under his fanatically stubborn policies, it is hopelessly bankrupt, and will be plunged into the relevant deep, global, chain-reaction collapse very soon. There will soon be widespread grave doubts, even among U.S. "fundamentalists," that the voice which that President has said he has been hearing, is that of The Creator.⁴³

⁴³ The specific type of religious madness, whose range of varieties of expression is typified equally by the cases of both the followers of Jonathan Edwards and Spain's forerunner of Adolf Hitler's persecution of Jews, Grand Inquisitor Tomás de Torquemada, is part of the American historical experience. When we recall those periods of madness in our political past, we are helped in our reflections upon the damage done by those comparable types who make up the hard core of mass manipulator Karl Rove's base of support for President George W. Bush, Jr. We recall the Scopes Monkey Trial and its complement, the founding of the Ku Klux Klan tradition's Nashville Agrarians. It is important, today, to recall how the Hoover Depression of October 1929-February 1933 brought the right-wing religious mania of the 1920s toward its close. Real Christianity, for example, as opposed to these pathetic aberrations, is spiritually a force in the real world for the redemption of that mankind which is the most precious part of the universe in the eyes of the Creator. Christianity, in particular, is a theology of love for all mankind, by us, as by Jesus Christ. Religious manias such as that associated with Karl Rove's manipulations of the susceptible mind, are fostered in times when great masses of humanity are estranged from the real world, poor, deranged people, who flee from reality, and the principle of Christian love, into a form of practice of pagan magic, a corrupt and hate-filled faith, like that of the followers of the Grand Inquisitor, which may be adorned with the counterfeit trappings and symbols of Christianity, Judaism, or Islam. Thus, if you must have prophecy, I prophesy, that if the presently imperilled U.S.A., rotted-out by the Mammon-worshipping rituals of "faith-based initiative," is to be saved, the grip of lunatic religion in the Jonathan Edwards tradition will have largely ended, as several years of ruin under President Herbert Hoover worked to similar effect. Had this rescue under Franklin Roosevelt not occurred, religious fervor in a

Therefore, President George W. Bush might soon have very painful reasons to wish he had not been elected. The next President of the U.S. may absolutely rely on the rapid arrival of a virtually bankrupt U.S. government, and no signs of a let-up in the tidal waves of troubles he never thought were possible, hitting Washington, D.C., from all around the world, and within the U.S.A. as well.

As I have emphasized, repeatedly, since the start of this report, the present world monetary-financial system is now entering *a terminal phase of general, global collapse, from which it will never recover in its present form*. The desperate attempt to maintain that system beyond the point of its onrushing early date of demise, would plunge the world as a whole into a new dark age of mankind for one or more generations to come. The alternative, to prevent what presently seems to be the self-doomed, fixed opinion of the current Bush Administration, is now summarized here as the proposed mode of corrective action to avoid that doom. That is the mission of the following pages of this report, where I propose what represents the only existing practical approach to reforming national and world economic systems: the only approach which might be accepted by literate and actually sane adult men and women.

The general remedies required for this onrushing monetary-financial catastrophe, if they were adopted, would be viewed by contemporary historians as a return to the remedies tried by President Franklin D. Roosevelt. However, as I have already indicated earlier here, the solution will not be quite that simple. As I have warned: what threatens us now, is an immediate general crisis far worse than the world crisis of 1929–1933; the levels of destruction to which the economies of Europe and the Americas have been subjected, during the recent four decades, vastly exceed, in relative degree of destructiveness, anything experienced during the period of the U.S. Herbert Hoover Presidency.

The remedies required do include putting the present world monetary-financial system, including the U.S. Federal Reserve System, into government receivership for reorganization-in-bankruptcy. But, however necessary that action shall be, it is not, in itself, a solution for the problem. Rather, *receivership-in-bankruptcy-reorganization must be considered as merely the appropriate legal form of action by which our Constitutional system of government brings the mess under sufficiently efficient administrative control to permit the taking of the other measures, measures of animation which will actually generate the economic recovery on which the continued existence of our form of government now depends*.

To state the required quality of crucial difference in approach as succinctly as possible:

Instead of attempting to manage a recovery of the physical economy through reforms of the monetary-financial system, we must recreate a new, 1944-style, new “Bretton Woods”

non-Roosevelt 1930s would have had a consequence similar to that witnessed at Hitler’s Nuremberg rallies.

national monetary-financial system, through what are, constitutionally, “typically American dirigist” measures in the domain of physical-economic policies.⁴⁴ An insightful wit who has read the preceding sections of this report, might say: “Our job is to reanimate the U.S. physical economy.” I mean that term, “reanimate,” literally, as I shall clarify that point in this concluding section of this report. If we take the right approach to that task, at home, here in the U.S.A., we will be providing the matrix for our participating role in leadership in rescuing the world as a whole.

The objection will be, that beginning with the first day of the Truman Administration, the U.S. had drifted, at an overall accelerating rate, into not merely a post-Franklin Roosevelt mode, but an increasingly, often hysterical anti-Roosevelt mode, in which the flight from alleged “socialism” carried many so far in their zeal, as to become like today’s so-called “neo-conservatives,” who are, plainly and simply, outright fascists. The popular folly has become, “You can’t put the toothpaste back into the tube.” The truth is, that any intelligent and sane adult knows how to put the toothpaste back into the tube, if only when that is necessary. The choice for the U.S. today, is to correct, rather than repeat the mistakes, especially the popular mistakes of the past forty years, especially those made under trends launched by the Nixon Administration.

Cease the diversionary squabbling about socialism versus fascism. Try Americanism, as President Franklin Roosevelt did, while you still can.

Go American, instead of the Anglo-Dutch Liberalism turning fascist again today. Roosevelt’s actions are a correct reading of the U.S. constitutional law defined in the language of the 1776 Declaration of Independence and the Federal Constitution of 1787–1789, as this language was understood by the first President, George Washington, and his principal collaborator in that administration, U.S. Treasury Secretary Alexander Hamilton. Recall that the American System of political-economy, as associated with the names, among notable others, of Franklin, Hamilton, the Careys, Frederick List, Henry Clay, President and Secretary of State John Quincy Adams, Lincoln, McKinley, and Franklin Roosevelt, has proven itself the most powerful, most successful form of national political-economy which this planet has ever known. Why settle for the “Brand X” of so-called “fiscal conservatism” of Herbert Hoover, and many others, which has now, once again, ruined the once-great U.S. economy of today?

To set the stage for the technicalities which must be presented, a certain amount of preliminary butt-kicking is needed in opening this part of our report. Considering the case of Enron, Halliburton, the financial-derivatives bubbles, and the like, the matter of what has

⁴⁴ Not, as some wags might wish to say, through the methods of the Texas Loan-Arrangers.

become for many an all-too-subtle difference between freedom of the seas and piracy, must be clarified afresh.

3.1 Get Rid of the 'Flea Trade' System!

As I have already emphasized, earlier in this report:

To understand how, and why we, as a nation, have behaved ourselves at various relatively distinct phases of our emergence and development as a nation, we must study our history in its sometimes seemingly kaleidoscopic sort of evolutionary development as a system, as I have summarily defined the appropriate, scientific use of the term “system,” above. For that mission, we have sufficient known evidence of the evolutionary character of the unfolding of today’s more or less globally extended European civilization, since the rise of ancient Greece, that we can view Europe’s civilization, to date, as a long-ranging process of cultural evolution, of which the emergence and history of our own U.S.A. is a special phase.

From time to time, we must see ourselves, as individuals, as like fish in a cultural fishbowl. Our behavior as inhabitants of that confining fishbowl of that time, was dominated by certain trends in transmission and acquisition of habits, habits of discernible groupings within society, and otherwise characterized by conflicts and special conditions arising in that context.

So, from that vantage-point, as I have emphasized repeatedly, both earlier in this report, as on many earlier locations, we can understand ourselves better, more objectively, by seeing our nation, ourselves, as swimming with and against the currents—the cultural fishbowl—of the Anglo-Dutch Liberal system of international finance. Those currents which still dominate our world today, are chiefly—characteristically—a continuation of the imperialistic (i.e., ultramontane) system of international piracy which was developed as the medieval partnership of Venice’s piratical, slave-trading financier oligarchy and the predatory Norman chivalry of Crusades’ notoriety. To understand the presently bankrupt world monetary-financial system, we must peek into a past of about 1,100 years duration, when that partnership in usurious evil first emerged as the clear replacement for the then-waning hegemony of the decadent Byzantine power.

In viewing that history of the Venetian system in its larger context of ancient through modern European history, we can, and should recognize elements of the origins of the Venice system in interaction among the maritime powers of the Mediterranean, during the centuries preceding the emergence of what became imperial Rome, as a dominating power during centuries of a time following the close of the Second Punic War.⁴⁵ From the parapet

⁴⁵ From about the Seventh Century B.C., a reviving Egypt enlisted Ionian seafarers against the menace of Tyre, in the eastern Mediterranean, and the Etruscans in the western part. The role of the cult of Delphi was a crucial

of that historical vantage-point, we witness the rise and fall of Rome, and its first and Byzantine Empire, that over the interval from about B.C. 200 through approximately A.D. 1000. From that origin, the maritime power of Venice's financier oligarchy emerges as a rebirth of the earlier role of the Delphi-pivotted usurious power in the Mediterranean, a Delphi which shaped the context in which the phenomenon of the power of Rome itself had come into being. Some have wisely compared this longer wave of developments, from ancient Greece to the present, to the cycles of a slime-mold.

We, today, are still gripped by the systemic influence of that horrid legacy. As we begin to understand that that is the form of the trap within which our civilization is gripped now, once again, we find the prospect from which to view, and to understand the long-ranging pattern of systemic changes which have swept us today, like survivors of a shipwreck, on the turbulent shores of what is, for most of you today, the future history of an unknown territory. It is time we grew up, and learned to cease to be flotsam on the tides of long-wave historical cycles. It is time we assumed truly adult responsibility for actually choosing our history.

As I have pointed out in these, and other, earlier reviews of this matter, the outgrowth of the Venice-Norman partnership in ultramontanism, divides that interval of the A.D. 1000–2104 history of Europe into three rather well defined, relatively distinct periods and systems.

- The first of these extends from the rise of the Normans in France and England, through the Crusades, into that usurious system's self-inflicted New Dark Age of Fourteenth-Century Europe.
- The second extended from the resurgence of Venice with the Ottoman conquest of Constantinople, through the waning of Venice's attempt at resurgent power as an imperial maritime state, and its virtually biological reincarnation as the Anglo-Dutch Liberal System, following Venice's defeat by the 1648 Treaty of Westphalia.
- The reincarnation of Venice's system, in a third disguise, emerged as what was widely known, inside and outside the United Kingdom, as the Anglo-Dutch Liberal version of the "Venetian Party" of the Eighteenth Century, which has continued up through the presently bankrupt, "floating-exchange-rate" form of monetary-financial system.

There were important shadings of internal ideological shifts within that system during each of these three stages:

- In the first period, ultramontanism was predominantly Aristotelean in its attempted rationalization for its own imperial existence in the tradition of the Olympian

part in both orchestrating the internal ruin of Greece which culminated in the Peloponnesian War, and in the subsequent rise of pagan imperial Rome to become the "Whore of Babylon."

- oligarchy of Zeus, now under the conditions posed by an emerging system of European nation-states.
- In the second phase, with the reactionary, Venice-directed, Habsburg dynasty's takeover of Spain, there was an anti-Renaissance transition, as marked by the rise of a Venetian neo-Aristotelianism of English King Henry VIII's Venetian marriage-counsellor Francesco Zorzi, a neo-Aristotelianism which had been summoned as an ideological weapon of the Romanticism of Michelangelo, Reni, Caravaggio, *et al.*, against the Classical, Platonic Christianity of the Fifteenth-Century Renaissance of Brunelleschi, Cardinal Nicholas of Cusa, Leonardo da Vinci, and Raphael Sanzio.
 - This was followed by a third, Liberal phase of the Venetian system, during the course of the Seventeenth Century. That latter is the present philosophical incarnation, as expressed as the triumph of the new reductionist philosophy of empiricism, which had been launched by Paolo Sarpi and his household lackey Galileo Galilei, toward the close of the Sixteenth and the beginning of the Seventeenth centuries.⁴⁶ The developments over the interval from the Anglo-Dutch Liberals' triumph, during the so-called Seven Years War, through the signal 1848–1849 triumph of the Liberal party over, and assimilation of the Habsburg legacy, left a situation, in 1945, in which the U.S.A.'s tradition, the anti-free-trade, American System of political-economy, led by Franklin Roosevelt, was, for that moment, the only significant challenger to the long legacy of neo-Venetian forms of Liberal financier-oligarchical power.

We are now living in the aftermath of the self-inflicted, post-FDR, systemic corruption and ruin of the once mighty American System of political-economy. There are self-inflicted, post-FDR, erosive processes, processes which emerged in the internal corruption of the system over 1946–1964, and, later. This corruption led into the subsequent, decades-long plunge into cumulative decadence and increasing moral and physical ruin, which has been the dominant trend within the presently triumphant, but doomed Anglo-Dutch Liberal system, as characteristic of the interval 1964–2004, overall, to date.

We are at a point at which the most populous nations of Asia, led by China and India, appear, to superficial observers, to be the early oncoming world powers. Yet, looking closer at

⁴⁶ Giovanni Botero is a notable late-Sixteenth-Century figure in shaping the “pro-Malthusian” theories of the state, up through that 1790s work which the Haileybury school's plagiarist Thomas Malthus, crafted for William Pitt the Younger, by boldly plagiarizing the just previously first published original English-language edition of a work on population by Giannaria Ortes. So much for that tradition of British originality which crudely plagiarized a Newton claim to discovery of the calculus, out of reading a previous, 1676 edition of the first, Paris publication of the discovery by Leibniz.

the relative weight of the very power of Asia, we place less emphasis on their present outward signs of relative power, than on the great internal peril waiting to threaten them once the hegemonic present world monetary-financial system collapses upon them, as also upon us. The power of these great Asian nations depends for its short-term appearance and longer-term reality, on the very European-centered, planetary system on which the existence of the stability and power of those great Asian nations now depends (**Figure 8**). It is the reformed version of that new world system, which we must now launch, on which the survival of Asian nations, as much as European, now depends, more or less absolutely.

So, consider the Liberal system as a system which is in large degree an outgrowth of a world-process dominated, for more than 1,000 years, by the evolution of the Venetian system of financier-oligarchism. Focus, now, on the relevant characteristics of the Anglo-Dutch Liberal form of the evolved Venetian-Party system which established its imperial foothold in the February 1763 Treaty of Paris. Look at the so-called “free trade” *system*, which has been the frequent characteristic of the Liberal imperialist system since then, to the present time.

The Coming Doom of the Liberal System

The launching of the 1648 Treaty of Westphalia, under the leadership of Jules Cardinal Mazarin who had been the Papacy’s leading peace negotiator of that time, unleashed a great surge of revival of optimism, and of scientific and other progress, in continental centers such as Russia, Germany, and, above all, Jean-Baptiste Colbert’s France. The interval of France’s history, from the great 1648 Treaty, until the decadence of France under the “Sun King” Louis XIV later aped by the Gallican Emperor Napoleon Bonaparte, was a great interval of revival and progress of scientific and artistic culture, as only typified at its best by the work of Leibniz and J.S. Bach.

The campaign to suppress the scientific leadership of the most prolific scientific mind of all modern European history, Leibniz, and, then, also, the effort to obliterate the influence of the founder of the greatest revolution in Classical musical artistry, Bach, pinpoint the Europe of the 1714 emergence of the Venetian Party’s captive British monarchy and the February 1763 Treaty of Paris, as the emergence of the imperial power of that Venetian Liberal Party, then also known as “the Enlightenment.” This fervently anti-Classical Enlightenment is the great tragedy which has menaced the world’s efforts for progress, from then, to the present day.

Now, whatever else might happen, that Liberal system as we have known it since 1763, has reached the point that it is immediately foredoomed to early extinction, in one way or another. The question is, whether it will be superseded by something better, or very much worse. Look at the Liberal doctrine of “free trade” as a characteristic, epidemic pestilence of

that Liberal system, from the time of its birth, delivered by the hands of Venetian mid-wives, until the present moment at which the U.S. economy is crashing around the ears of a deluded President George W. Bush, Jr.'s foolish dynastic ambitions.

The intellectual expression of the *anti-Colbertiste*, French part of that same Eighteenth-Century “Venetian Party” was typified by the pro-feudalist Physiocratic dogma of Dr. François Quesnay, Voltaire, d’Alembert, Philippe Egalité, and the Swiss Jacques Necker; on the Anglo-Dutch side by the monster William of Orange and the pro-Satanist Bernard Mandeville; the English side by the tradition of John Locke, by the Walpole Liberals generally, and by Lord Shelburne’s lackeys Adam Smith, Jeremy Bentham, and Edward Gibbon; and, the Swiss side, again, by Euler and Lagrange. The cases of Quesnay, Mandeville, and Adam Smith are notable for their part in expressing the economic dogmas of the Venetian Party Liberals as a whole during the Eighteenth Century. The work of the latter three, as based on the philosophical ground defined by Locke’s *An Essay Concerning Human Understanding*, is explicitly notable for pin-pointing the issue being examined immediately here at this point in the report.⁴⁷

The root of the Eighteenth-Century and later Venetian Party social theory from which the British monetarist school of Mandeville, Smith, Bentham, Malthus, Ricardo, *et al.*, sprang, was crafted as a curious epistemological parody of the *post hoc, ergo propter hoc* tactic of Aristotelians such as the ancient Roman hoaxster, Claudius Ptolemy and his modern followers.⁴⁸ *Post hoc, ergo propter hoc* was translated into “it is a mystery which we could never solve,” an opinion which cloaked all sorts of official and academic lunacies, such as “free trade,” under the protective cloak of, “after all, it is all a mystery, isn’t it?” The empiricist school, of which Quesnay and the British Venetian Party are typical, assumed that the mind of the human individual came into existence more or less as Locke did, as a blank slate, like a digital computer fresh from the production line, but a computer with certain susceptibilities to be “pre-programmed” with built-in “mysteries” such as the dogma of “free trade.” Hence, Minsky and Chomsky later. Hence, the ruinous lunacy of “free trade” then, and in the self-ruined U.S.A. of the past forty years, still today.

Despite what was claimed to be that bare-bones view of the individual mind’s original content, these empiricist sociologues managed to pack that mind’s allegedly natural,

⁴⁷ After Locke’s death, Gottfried Leibniz apparently put a lower priority on publication of his general refutation of Locke’s published work. So, Leibniz’s reply, *New Essays on Human Understanding* came into English-speaking circulation through the mid-Eighteenth-Century influence of Gauss’ later teacher Abraham Kästner; it was through Kästner and his circles that Leibniz’s work reached Benjamin Franklin, and, thus, through Franklin that Leibniz’s anti-Locke concept of “the pursuit of happiness” became the central principled constitutional feature of the 1776 U.S. Declaration of Independence.

⁴⁸ Professor Milton Friedman, for example. See Joan Robinson, *Economic Heresies* (New York: Basic Books, 1971), pp. 86–88.

pre-natal propensities, its “blank slate,”⁴⁹ with a generous supply of what they attributed to pre-programmed ideology. Take the case of Liberal professional pickpocket Adam Smith’s “Invisible Hand.” This concoction by the Smith whose 1776 anti-American *Wealth of Nations*, on political-economy, was otherwise largely pilfered, in gobs, from the French Physiocrats Quesnay, Turgot, *et al.* The core of Shelburne lackey Smith’s argument for “free trade” was premised on two sources: Quesnay’s explicitly feudalist doctrine of “*laissez-faire*,” and Mandeville’s notorious paean to devilish licentiousness, *The Fable of the Bees*.

All three of these sources, Smith himself, and also Quesnay and Mandeville, relied entirely on an essentially interchangeable argument featured, prior to Smith’s 1763–1776 work on *The Wealth of Nations*, in Smith’s own David Hume-aping, 1759 *The Theory of Moral Sentiments*. I have customarily referred to their concoction as the Liberal’s alleged principle of “the little green men casting dice under the floorboards of the real universe.” Hence, Smith’s “Invisible Hand”: what contemporary lunatics sometimes call “The magic of the marketplace”—the charlatan’s marketplace. “*Abracadabra, anyone? How about an economy where growth comes, allegedly, from taking in one another’s laundry, growth through gambling?*”

In the instance of Quesnay, the relevant tell-tale sophistry is the argument, that, since the serfs on the landlord’s estate are essentially merely herded cattle, the profit from the estate must be nothing other than the miraculous attribute, a mysterious, *post hoc, ergo propter hoc* epiphenomenon of the landlord’s duly attested title to the property. Since that pirate was rich, it must be assumed, as self-evident, that either he must have been very lovable, or, if not, enjoyed the magical power of good luck.

Mandeville, who insisted that private evil brought forth public good, does give us better insight into the principles of abundantly licentious “free trade” than Quesnay’s magical potency of the parchment of a landlord’s property-title, or Adam Smith’s implied reliance on little green men making some fools undeservedly rich, by casting crooked dice in the beneficiary’s favor from under the floorboards of the real universe. Since Enron, who, but a fool, could still believe Adam Smith?

I now restate the same point, in effect, as I have emphasized this, in the matter of capital cycles, in the closing portion of the preface of this report.

The benefits of capital formation to any society as a whole, such as a national economy, or region of that economy, arise from the net increase in the rate of generation of physical wealth, per capita and per square kilometer, from the causal impact of the functioning existence of that *physical* capital.⁵⁰ The benefits so generated are either increases in the

⁴⁹ Compare “blank slate” to the “self-evident” presumptions of Russell’s *Principia Mathematica* and of the von Neumann-Morgenstern *Theory of Games*.

⁵⁰ I.e., increase of potential relative population-density, per capita and per square kilometer.

productive powers of labor through the improvements in employed skills and means of production, or through a more favorable environment, as typified by the “environmental” effects of President Franklin Roosevelt’s Rural Electrification program upon the otherwise little changed, or even unchanged productive skills of the relevant farmers. Contrary to usurers and the superstitious gulls who believe them, the benefit which might be associated with an amount of accounted financial capital involved, is never the result of the financial capital as such, but the benefit from the physical capital which represents the true social value of the financial claims.

So, in general, the American System of political-economy, opposite to the Liberal doctrine of the British System, emphasizes the proper notion of profit to be the expression of improvements in the productive powers of labor, per capita and per square kilometer of area. The application of the individual human will to this connection is of crucial importance, but the other considerations just emphasized, such as environmental ones, delimit the individual will’s capability for generating growth through capital investment.

Thus, in any economy which is operating as a virtually zero-technological-growth system, profit comes not from actual net physical growth in the real economy, but from a kind of auto-cannibalism, in which some people, in effect, become richer by eating other people, up to the hypothetical point that the relatively rich find themselves eating one another, as throughout Europe and the Americas today. The Liberal system, like the earlier forms of the Venetian financier-oligarchical system, was essentially a system of cannibalism through, chiefly, usury, pillage, and sundry approximations of slavery or quasi-slavery of populations maintained as virtually herded human cattle. The predator walks past the scene of his crimes, expressing his indifference with a shrug of his shoulder, “Don’t ask me why,” gesturing to his abandoned victim by the roadside. “Obviously, God, for his own mysterious reasons, willed it to be that way.” So goes the social theory of Mandeville, Quesnay, and Smith.

3.2 The Economics of the Noösphere⁵¹

Russia’s great polymath, Vladimir I. Vernadsky, writing in his role as the founder of the branch of physical science known as biogeochemistry, made a point of clarification of the progress in geology which, among its other uses, greatly simplifies the effort needed to present the rudiments of a modern applied science of physical economy. The related, special merit of Vernadsky’s work in this connection, is that he rightly resuscitates the elementary principles of Classical, pre-Aristotelean Greek scientific thought, which he does by his division of geology among three distinct, but multiply-connected qualities of universal physical principles: the *abiotic*, *life*, and *cognitive (noësis)*.⁵²

⁵¹ Lyndon H. LaRouche, Jr., *The Economics of the Noösphere* (Washington, D.C.: EIR News Service, 2001).

⁵² *Ibid.* pp. 275–318.

Vernadsky elaborates the distinctions from the standpoint of experimental methods developed for proof-of-principle of scientific hypotheses.

- There is, first, the class of principles which can be demonstrated without assuming a principle of life, or of human cognition; these we, like the qualified experimentalist, consider *abiotic*.
- There is, second, a class which includes fossils produced by the action of life, such as our oceans and atmosphere, in addition to the relevant great strata of solid stratification with which our planet is encrusted as a result of *the actions of living processes*, actions not found among non-living processes.
- There is a second class of fossils, of accumulated changes in the composition of our planet Earth which are not merely products of activity by human beings, but are *products of specifically human mental-creative activity*, products which exist only as their coming into existence is typified by the use of discovered universal physical principles by human beings.

Following Vernadsky, we are obliged to classify each of these relics *according to the principle which has actually caused the generation of that effect*, as we distinguish basalt and granite from fossil stratification.⁵³ Furthermore, we find that the ratio of fossils generated by living processes is an increasing percentile of the total mass of our planet, and that, especially since Europe's Fifteenth-Century Renaissance, the ratio of fossils of strictly human activity to other fossils is increasing—in other words, the long-range tendency is for an increase of ratio of the generation of fossil products of (*intentional*) noëtic activity, relative to the generation of fossil products of merely living processes. In that sense, the planet Earth is becoming more and more a fossil of life, but, at the same time, also a fossil of the creative (*noëtic*) processes of human minds, the noëtic processes responsible for man's discovery of universal physical principles, including the principles of Classical artistic composition and its effects.⁵⁴

So, we think of our initially very inhospitable planet Earth as evolving into an increasingly suitable host for life, and the subsequent development of the Biosphere, naturally or through man's intervention to promote its development, as creating the preconditions for the existence and proliferation of human life. There is no naturally fixed state of development of the planet Earth, or of the Solar System as a whole; there is, rather, the challenge of securing an “unnaturally” improved planet Earth, thus richer in the effective (for humans)

⁵³ For example, coal from mining is a fossil; but, is petroleum not a product of an abiotic process occurring under appropriate abiotic conditions of temperature, catalysts, and so on, a process which does not require action by living processes?

⁵⁴ In other words, as Philo made the relevant argument against a fixed Creation which now imprisons the Creator, God is not a product of the created universe, but the original and continuing Creator of that universe. As some rabbis would say, the Messiah will come when God chooses, not on a train or bus schedule.

development of the Biosphere, and more suited to the promotion of both the number and conditions of life of human beings.

In each of these three, multiply-connected phases of the existence of our planet, *a prudent science classifies objects not by their condition as found, but by the process which generates them in their found condition*, as we distinguish an object produced as a product of the creative powers developed by a human being, from an otherwise similar object which has been generated in another way. So, as Vernadsky insisted, we follow Pasteur in defining the distinction among those chemical processes which are products of life, from relevant others.⁵⁵ This rigorous point of distinctions, is key to the concept of *animation* in economic science.

Plato's Riemann-Vernadsky Complex Domain

Now, join me in summarily rephrasing the crucial point of what I have just written so far.

We are back to the subject of the physical meaning of the complex domain: those ideas which correspond to experimentally validatable discoveries of those universal physical principles which lie beyond the direct reach of unaided, simple sense-certainty.

Those ideas include the principles of social processes which are the subject of Classical principles of artistic composition, as distinct from such other, anti-Classical modes in artistry, such as the anti-Classical modes of Romanticism, modernism, and so on. Just as the principle of universal gravitation, as originally discovered by Kepler, *animates* the motion of the planets of the Solar System along the predetermined course of their orbits, so the mind of man discovers experimentally provable principles, such as the (anti-Hobbes) principle of Classical irony, whose intentions actually move the development of the physical economy through physical science and the inspiring fruits of Classical artistry.

For example, this points to what is provable to be the fatal internal, “anti-intellectual flaw” of the Soviet system, and the socialist movements generally. Whereas, the mission-oriented Soviet military-scientific system was a stunning success, relative to its possibilities, the “civilian” sector was a tragedy, chiefly due to that taught obsession with faith in the so-called “objective” view of history of Marx, Engels, the social-democrats Kautsky and Bernstein, Plekhanov, and the majority of Bolshevik Party leaders outside impassioned “voluntarist” V.I. Lenin himself.⁵⁶ It is the individual leader, as typified by the fertile mind of the scientific

⁵⁵ See relevant reference, below.

⁵⁶ L.D. Trotsky's flashes of brilliance aside, he was, as a one-time follower of the notorious Parvus, and as he himself otherwise emphasized, a follower of Jeremy Bentham with a notorious inclination toward anarcho-synarchist rushes, and thus generally, a truly tragic figure of Romanticism. Romantics are not always wrong, but, at best, merely tragic Hamlets, as Trotsky was, always unreliable victims of their lurking, irrationalist impulses. The attribution of leadership, as by Britain's Engels, to “the horny hand of labor,” reminds us that cotton magnate Engels was also known by Marx, and others, for his “horny hand.”

discoverer, such as my late friend, and sometime Gulag resident and impassioned patriot, Pobisk Kuznetsov, or the comparable quality of individual mind in Classical art, or other applications, who is the spark of progress which ignites the creative passions among his, or her otherwise mentally blocked slaves of tradition. Marx's flaw was his adoption, as a follower of Lord Palmerston's New Europe puppet, Mazzini, of the typical British empiricist's failed conception of the nature of man. This has been the leading source of failures of social-democratic and related movements to the present day. It is also a principal source of the characteristic incompetence and moral mediocrity of intellect among leaders in corporate business and related life of the Americas and Europe today.

The crucial irony in this arrangement of national affairs, is that the discovery of, or the individual's re-enacted discovery of a true, universal physical principle (*Geistesmasse*), occurs only within the impenetrable sovereignty of the individual human mind, a sovereignty whose principle is impenetrable from the lower standpoint of the mere Biosphere. It is that act of discovery, as *intention*, which effects those changes in human practice which transform the state of an economic process from the relatively inferior convention of yesterday's usage, to, hopefully, the more powerful form of action today. The fault of Marx, as of Noam Chomsky today, is to seek to define creative processes of a sublime being, the human individual, within the Cartesian, life-hating, implicitly abiotic clockwork of evil Bertrand Russell's radically empiricist mind.

It is the sovereign creative act of the individual human mind, as my discussion of the notion of *Geistesmassen* typifies that act, which defines the power of *intention* through which the productive powers of labor of the typical member of a society, and, thus, of the human species, are increased. This view of *intention*, as located within the thus defined Kepler-Vernadsky view of the Solar System inhabited by man, is the core principle of *animation* in a science of physical economy.

As the cases of Archytas, Plato, Eratosthenes, Archimedes, Cusa, Leonardo, Kepler, and Leibniz typify this role of intention, it is remarkable that close examination of the interior process of the greatest discoveries of principle show the greatest part of human progress to be largely the result of the socially radiated influence of shockingly very few individual persons. In the same connection, we must consider the social conditions which tend to foster the influence of such extraordinary, creative individual minds, including the crucial fostering role of varying degrees of political freedom, when combined with respect for Classical culture and other forms of promotion of the general welfare: their role in enabling the society as a whole to assimilate the knowledge radiated through the creative work of truly exceptional, sovereign, individual minds.

This view, which I have just summarized, of the creative human mind's place in the universe, shows us that the inner, real core of the physical complex domain, the core beyond the direct reach of sense-perception, is a three-fold multiply-connected process, in principle. There is the ordinary phase-space of the complex domain, of non-living principles, as I have already described this, summarily, here. There is the second phase-space, of the principles whose attributable intention generates the Biosphere in a way which subsumes the development of the abiotic domain. There is a third phase-space, whose attributable quality of intention generates man's astrophysical domain, the Noösphere.

Therefore, the science of physical economy must be a fourth domain, which subsumes the historical process of the discovery, development, and application of an expandable manifold of discoveries of all universal physical principles, including in that the principle of that fourth domain itself. *So, to be competent economists, we must, like the Plato of his **Timaeus**, hypothesize the higher hypothesis. Not as a formula, but according to the nature of Geistesmassen.* Such are the implications of Vernadsky's definition of the Noösphere, when that Noösphere is viewed from the standpoint in physical economy which I represent here.

3.2 How to Measure Animation

Now, let us be practical, but in the ironically good sense of that term.

For the case of the U.S.A., the crafting of a competent national body of analysis of the economy begins, as Cardinal Nicholas of Cusa's friend Toscanelli advised his correspondent Christopher Columbus, with a map (**Figure 9**) of the territory (e.g., the nation, and then the world) as a whole. That map presents us with physical and economic geography of the entire territory. It divides the U.S. (for example) among states and counties, and cross-grids those areas with cities and towns. It measures everything to be measured in grids of hundreds of persons per standard number of square kilometers (or miles). These measurements go back as far in time as feasible, with the intended purpose of crafting a geometrical portrait of the patterns of historical changes of overall characteristics of the economy and its functions.

The object is the improvement of the condition of mankind, and the improvement of each part and all of the territory he occupies, for the benefit of man and the glory of the Creator of man: for fulfillment of the mission of promotion of the general welfare, which is the mission of the national sovereign state, and the highest law under the U.S. 1776 Declaration of Independence and our Federal Constitution.⁵⁷ All other law must bend in awe before that law of the sovereign commitment to the promotion of the general welfare of the people and their posterity.

⁵⁷ The incorporation of Leibniz's anti-Locke affirmation of "the pursuit of happiness," has, as I have explained here earlier, the exact same intention as the supreme law, the Preamble, of both the U.S. Federal Constitution and all institutions of government under that Constitution.

The singular feature of the *animated* image of these changes in the economy as a process, is emphasis on those singularities of an intrinsically non-linear nature, which identify the efficient functional relationship among seemingly disparate factors within the economic process considered as an integrated whole. While “wipes” of charts are useful pedagogical tools, they also tend to be misleading, in that they do not make clear the difference between competent practice of economic science and its forecasting, and mere connect-the-dots methods employed by the usual “brand X” varieties of statisticians. The secret of the principled characteristics of real economic processes lies in those singularities (e.g., physical-geometrical discontinuities), akin to Riemannian shock-wave fronts, which become apparent in attempts to optimize the seemingly contrary relationships among assorted long-term and short-term physical-capital movements which are internal, and functionally integral to the economic process as a whole.

The general approach so required was already made clear in U.S. Treasury Secretary Alexander Hamilton’s 1791 *Report to the U.S. Congress on the Subject of Manufactures*. In that report, a portrait was crafted, showing certain then-present and future patterns of progress in the functionally beneficial interaction among rural and urban regions, basic economic infrastructure, agriculture, and manufactures.

The historical prospect-point to adopt for this study, is: how the American pro-colonial wilderness was transformed into the preconditions for the Eighteenth-Century emergence of the U.S. economy of Alexander Hamilton’s time and later. H. Graham Lowry’s *How the Nation Was Won*,⁵⁸ presents the concept of development which became embedded in the U.S. republic from the time of the adoption of its 1776 Declaration of Independence through the drafting of the 1789 U.S. Federal Constitution, with the latter’s most remarkably wonderful deeply embedded higher authority in constitutional law, as its Preamble.

One example of studies to such effect, was a modern study, assembled by a former associate of mine two decades ago, which showed with commendable exactness the impact of the replacement of belt-driven transmission of power to machines, by individual electrical motors. Another example: the role of efficient mass-transit systems, as opposed to excessive reliance on streets and highways, in producing economical conditions of life in urban areas and in urban-suburban relationships. How should we organize cities as a design for work and living? The significance of power supplied per capita, is typical. What is the relationship between capital-intensity of investment in productive processes per capita, and rate of increase of physical productivity?

⁵⁸ *How the Nation Was Won: America’s Untold Story* Vol. 1 (Washington, D.C.: Executive Intelligence Review, 1987), 2nd Printing, 2004.

These kinds of measurements are made primarily in physical units, not monetary units. The measurements to be made have a profound coherence with the mission adopted by Kepler, as by such as Leibniz, Gauss, and Riemann after him. The physical economist of today, must be inspired to his work by reflection on the sheer mass of measurement applied by Kepler and Gauss to their work, as for Kepler on astronomy, and Gauss on astronomy, the principles of physical curvature in general, and in geodesy. This work of those great minds should inspire the persons engaged in compiling and studying the great mass of relevant statistical information which must be considered, if we are to develop efficiently crafted policies of principle for the successful reconstruction of, in particular, today's presently shattered U.S. economy.

Once we have mapped a relevant view of the past and desired future transformations of the physical economic process as a whole, we must design a system of regulation of credit, finance, and monetary system which will react, as if by "feed-back" mechanisms, to prompt the build-up of useful forms of capital accumulation where they will be less taxed *after* they have performed a desirable good, and will be treated more favorably, for receipt of credit, on the basis of evidence of a competent and useful intention. Such are the relevant principles of making and administering law which must be ruled by the complex of principles of natural law for a sovereign Presidential form of republic set forth in the Preamble of the U.S. Federal Constitution.⁵⁹

Let us define the practice, and measurement of animation accordingly.

'Non-Linear Optimization'

In the standard classroom and related instruction in the rudiments of physical economy, which I provided in sundry locations during the 1966–1973 interval, I employed certain pedagogical devices for which I became rather famous, in locations within the U.S.A. and abroad, during that time, and later. I summarize that pedagogical approach here, now.

I started with the population as a whole, as situated in a territory as a whole. My intention was to convey to the students a sense of how growth of the potential relative population-density of a society, and the necessary increase of life-expectancy was expressed in

⁵⁹ There are four notable features of Twentieth-Century European political-economic history which should be identified as a matter of fairness toward European efforts to break free of the superimposed evils of a type of parliamentary system dominated by the lurking power of Liberal central-banking systems. The clearest examples are President Charles de Gaulle's pre-1964, economically dirigist leadership of France's Fifth Republic, the stellar performance of the Federal Republic of Germany under the *Wiederaufbau* credit-system, the efforts associated with the murdered Mattei in Italy, and the best "voluntarist" impulses adducible from among reflections on the Soviet System. The yearning of the peoples of European civilization toward a true system of a community of principle among respectively sovereign, Presidential forms of nation-state republics, is a current which must be nurtured for the building of a future order, in keeping with the 1648 Treaty of Westphalia, for the role and impact of European civilization's contribution to life on our planet as a whole.

terms of the composition and allocation of that population's labor-force. To that end, I relied on simple bar-diagrams, to show the variable relationships among total populations and the effective labor-force of those populations, on the one side, and those factors of change (e.g., increase) of physical output which resulted in a potential for increase of the potential relative population-density. I focussed attention on the role of technological progress as typified by the outgrowth of discovery of universal physical principles, defining science in terms of the more obvious offshoots of astronomy. I showed the normalized form of desired result in terms of an increase of the physical capital-intensity of production and infrastructural development, as this change is reflected in such forms as population fertility, higher levels of age for entering the labor-force, and technological quality of the changes in composition of the division of labor in standards for employment.

I included society's development of land-areas, such as transformation of desert land into fertile land, as an associated feature of the development process.

I emphasized that my "models," as they appeared on blackboards and similarly, corresponded only to modern European society's Fifteenth-Century development of the beginnings of the modern nation-state, the nation-state form which first appeared under France's Louis XI and England's Henry VII (implicitly Thomas More's and Shakespeare's England), under which the government was functionally accountable for the protection and improvement of the general welfare of the present population and its posterity.

These became since approximately 1993–94, well known in Russia's relevant professional circles, as my original contribution to the founding of a science of physical economy. Those of my earlier, 1966–1973 simpler classroom pedagogy in the at-the-blackboard pedagogical exercises of approximately forty to thirty years ago, have a certain essential pedagogical validity still today. However, over the intervening years, since 1973, I have had the opportunity to lead in initiating many kinds of refinements, many of which, and more, will be reflected in the new mass-educational and related programs in the science of physical economy being launched since the closing months of the recent U.S. general election campaign.

It had been my intention, since the late 1970s, to bring my knowledge of the nature of physical-economic processes into relevant forms of applications for computer systems. The legacy of those continuing efforts has been the launching-pad now employed for what is for me, an unfortunately belated, but fortunately feasible undertaking in the public interest at this time.

The special emphasis on which I have insisted among my immediate associates during the past ten years or so, especially since 1975–1976, has been the task of affording the student and others, a sensuous grasp of those instances in which the significance of motion from one

point in physical-space-time to another can not be adequately grasped by the viewer's mind until we have presented that motion in appropriate forms of visual animation. The paradigm I, and my relevant collaborators, have used to illustrate that point, has been what I emphasized near the beginning of this report, as the essentially non-algebraic, physical-geometric character of the lawful motion of the Earth and Mars along their respective, predetermined, assigned Solar orbits.

The paradigm which I adopted for this purpose years ago, beginning the late 1970s, was the imagery of the Riemann shock-wave. Show the viewer the actuality of an aircraft approaching the sonic boundary, passing through it, and past it. Discuss the change in controls this involves. Make clear the crucial role of a Riemannian design, as discovered by Prandtl *et al.*, which made possible the first successful experimental flight using the principle, by the post-war U.S.A. Then produce a video-based experience of the real-time actuality of these transitions. That audio-visual model, with appropriate effects of shaking and thudding included in the viewer's experience, conveys a real-life sense of a phase-shift in Riemannian physical space-time, the kind of phase-shift which is actually expressed implicitly by a qualitative type of technology up-shift (or, downshift) in a national economy considered as a whole.

That considered, now take the issues of technology as I have taught that, in various degrees of pedagogical refinement, over the recent four decades, and put the component physical-capital elements of the operational U.S. physical economy over that same time into the relevant form of expressed interaction among the apparently linearizable elements of a non-linear process, the real economy and its qualitative changes, over four decades, or longer. The attempt to construct such a representation, introduces a confrontation with the essentially "non-linear" character of the economy which is the result of the interaction among these combined elements.

The object of animations is to make the sensation of what actually happens, to such effect, in an economy, a sensation of the real. We accomplish this by using the same methods associated with lapsed-time photography, to compact the functional relationships actually experienced over decades such as the (horrifying, dizzying) effect of experiencing the collapse of the physical economy of the state of Ohio over the interval 1990–1994 as within a minute or less of each repeated illustration. This use of the method borrowed from lapsed-time photography to illustrate the physical-geometrical discontinuities shown by putting several participating factors into an integrated single image, should become now the standard way of visualizing and discussing the long-term basis for competent standards of short-term investment, employment, and related decisions.