EIR Feature

Why the Academicians Have Usually Failed in Economics

by Lyndon H. LaRouche, Jr.

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There is rising consternation stirring within the international press, in leading circles of governments from the U.S.A., in western and central Europe, in Russia, in China, and from around the world generally. Reluctantly, it now dawns upon these circles, that virtually nothing which is essentially crucial has occurred in those patterns in the world's economy generally, which I had not forecast in my international webcast of July 25th, 2007.

Among the powers of evil which still appear to control some of the governing powers in the world, there is now a creeping sense that if it were possible they might destroy the prophet, but, then, be destroyed, themselves, by the prophecy.

What I had forecast, on July 25, 2007, was a general breakdown-crisis, which I had warned, was to unfold by about the close of that July. Three days after that webcast, the actual breakdown of the world's present monetary system began exactly as I had warned it would. Since then, the tocsin of a spreading, global tragedy of the nations of this planet, were heard here, then there, and then beyond, louder and louder, with a growing resonance, a resonance taking the planet as whole into its grip.

From that moment on, the ongoing, global, general, physical breakdown-crisis of the entire world's present monetary-financial system, has never ceased to worsen. It grows uglier and uglier, wider, deeper and deeper, and, for those who had deemed themselves the reigning powers of our planet, seemingly more hopeless, than what it had been a bare moment before.

There has been nothing like this, as I had repeatedly forewarned, since the U.S.A.'s 2000 Presidential primary campaign. There has been nothing comparable to this in the history of European civilization since the outbreak of medieval Europe's mid-Fourteenth-Century collapse of the House of Bardi into a Europe-wide "new dark age." It comes on as a planetary tragedy. As I had repeatedly forewarned since that time, what has been oncoming, is a general breakdown-crisis of the presently doomed financial-monetary system of every part of this planet as a whole.

One senses an approaching moment, like that silence heard by those either in the life-boats, or swimming in the chilling Atlantic ocean waters, in that moment when the *S.S. Titanic* had vanished under the waves.

So, since July 25, 2007, almost as soon as leading circles in any nation's government, in the Americas, Europe, Asia, and elsewhere, attempted to deny the possibility of a condition against which I had warned, exactly that kind of sign of an oncoming general, planetary breakdown-crisis had erupted. Essentially, not only have events around the world proceeded accord-

Francisco Goya, Los Caprichos, "Might not the pupil know more?" (1799)

ing to the pattern which I detailed in that webcast, but each such development had erupted seemingly moments after fresh, emphatic denials, by leading governments in the world, and others, denials that such a development as I had forecast had been possible.

So, now, in the oncoming, January 20 inauguration of a new U.S. Presidency, the crisis accelerates, building up like a rising, terrible storm. Yet, for a moment, there is an awful stillness, while this legendary *Titanic* is sinking into the deep, where it would lie under all the waters of the world.

Yet, ironically, at the same time, still today, even after the clear accumulation of proof of the accuracy of my July 25, 2007 warning, leading opinion often responds with a curious kind of effort at stubborn denial. In a moment when the virtual *Titanic* of today is already sinking. Yet, as absurd as it is for them to say, leading press and governmental circles attempt, again, to deny what is happening, by reassuring one another, that I am not a certified product of the economics department of virtually any university.

I can proudly confirm their view that I refuse to associate myself with anything as provably silly as that which passes for academic qualifications in economics among the usual academics of today. Meanwhile, they, each time, hearing their own voices on this subject, appear to be much more frightened, this time, by hearing the reverberations of their own attempted denials, than when they had uttered them a moment or so before.

Suddenly, in these moments, the threats to me from my would-be critics, appear as less ominous than tragically silly. This is a coming moment in my world, not a triumphant moment, but a moment like that experienced by a Noah floating on a vast, silent sea. So, the ominous, oncoming global tragedy, has now overtaken the world—for those who are willing to hear, and act accordingly.

I am no wizard. There is no uncanny miracle involved in my repeated, uniquely exceptional record of successes as a long-range forecaster. There is only science. As I had already emphasized back during the last four months of 1971, what had been taught as economics in most of the known universities, even then, was simply the result of the increasing rates of incompetence in what has been usually taught as economics at leading universities, since Harry S Truman was inaugurated as President.

Look back to the time and place at which the presently unfolding tragedy actually began.

My Experience

The tragedy began in that moment that the right-wing Wall Street choice for Vice-President, Harry S Truman, would seize the opportunity of President Franklin Roosevelt's death, to sabotage Roosevelt's Hamiltonian, post-war intentions. What Truman would introduce, instead of Secretary Hamilton's American System of political economy, is the intrinsic incompe-

tence of sometime pro-Nazi economist John Maynard Keynes.[1] The widely practiced methods of statistical forecasting today, are the worst existing on this account up to the present date. Otherwise, generally, the incompetence of my academic rivals' failure as forecasters, lies presently in the way in which they define the subject itself. They have employed a method of forecasting which might be compared to the zeal of a passenger searching to upgrade his stateroom assignment on a sinking ship.[2]

This downward trend in quality of thinking about economies, a downwardness against which I have warned, as a forecaster, over the interval of two generations past, has been the principal source of the failure of the leading academic economists, and also leaders of corporate finance more or less world-wide, today. This has been a trend to be seen more clearly, more ominously, since the ousters of the last great post-World War II leaders of Europe's post-war resurrection, such as President Charles de Gaulle and Chancellor Konrad Adenauer.

This subject of widespread academic incompetence in the teaching of economics has been a recurring issue of my memorable, 1971 and later debates with spokesmen for leading academic economists. It came up yet once more, in a press conference which I held at Strasbourg this past Wednesday, (Dec. 17, 2008) In a press report on that subject, by ***Corriere della Sera*** during the same and the following day, notably, ***Corriere*** wrote: "LaRouche goes back to the XVIII century and to the [first] Secretary of the Treasury, Alexander Hamilton," as, in fact, did U.S. President Franklin D. Roosevelt. ***Corriere*** was correct on precisely this point.

Looking back toward the fateful inauguration of President Harry Truman, we must recognize that the U.S. government's fiscal year 1967-1968, is notable as the point in the history of the post-President Franklin Roosevelt U.S. economy, at which the U.S. economy reached a net down-turn in physical, as distinct from merely monetary output per capita and per square kilometer, a downturn which has not merely persisted, but accelerated, from that time to the present day. An earlier, but less severe decline had been characteristic of the post-Franklin Roosevelt U.S.A., a decline *in rate of growth* caused by the policies under Presidents Harry S Truman and Dwight Eisenhower, as reflected in what I had forecast, in Summer-Autumn 1956, as an oncoming deep recession to hit approximately February 1957.

Later, there had been a partial, even promising resurgence of the economy under President John F. Kennedy, a resurgence which ended with the assassination of that President, and the consequent, fraudulent decision to send the U.S.A. to a war in the region of Indo-China. However, although the long, useless, wasting warfare in Indo-China, did contribute significantly to the ruin of the U.S. economy, it was not the actual cause of that collapse of the U.S. economy which has continued up to the present point of a global, general, chain-reaction mode of physical breakdown-crisis which brings the world as a whole to the brink of a threatened, prolonged, planet-wide "new dark age" now.

During most of my adult lifetime's experience since what is called World War II, there has been a dwindling, now tiny fraction of professed economists who have been competent; but, in each such latter case, the competence was gained despite, not because of the teaching of that subject for which graduates in economics from leading universities of the post-Franklin Roosevelt decades had been awarded their professional titles.

This crisis is not a U.S. failure, but a global one, despite those exceptional, known, or little known figures who have been of relevance for understanding the unfolding character of our presently looming global tragedy. For example, the incompetence which the Soviet and other Marxists have shared with their academic and

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1. Keynes' affinities for Nazi economics were identified by him in his German-language, 1937 edition of his ***General Theory***. The same issue was a crucial feature of my exposing the pro-fascist character of Keynes' doctrine in my celebrated, 1971 Queens College debate with Professor Abba Lerner. Keynes' competence has lain essentially in the accuracy of Keynes' demonstration of the British origins of Nazi economics dogma, as under Adolf Hitler then, or the President George W. Bush, Jr. whose grandfather, Prescott Bush, had funded Adolf Hitler's rise to the German Chancellorship. There is no coincidence between the constitutional principles of the U.S. Federal Constitution and the intrinsically imperialist monetary doctrine expressed by Keynes. There have been competent economists who admired Keynes, but this has been only to the degree that they have failed to take into account the inherently supranational implications of Keynes' system.

2. This is not new. My role as a forecaster of developments in the economy as a whole, began in 1956, in my foreseeing a February 1957 outbreak of the most severe U.S. recession of the post-war period. At the beginning of September 1971, I challenged all of the academic economists to respond to my charge that the failure of all of them to foresee the break-up of the Bretton Woods system, which had just occurred under U.S. President Nixon, showed the leading academic economists to have been a pack of "quackademics." Finally, those academics chose a champion, Keynesian spokesman, Professor Abba Lerner, who proved his incompetence in his debate against me. Most forecasting encountered from among academics since that time has been no better from a scientific standpoint than Lerner's.

political rivals in Europe and the Americas, is a direct outcome of the influence on scientific thinking of the foolish followers of the Seventeenth Century's Rene Descartes, and the Eighteenth Century's radical reductionists David Hume, Abraham de Moivre, Jean le Rond D'Alembert, and Leonhard Euler, et al. This was the characteristic incompetence of such followers of the British East India Company's Haileybury school as the

Economists, Bankers Wail: 'Why Weren't We Warned?'

A chronological sampling of the wails of despair—and denial—emanating from those who should have been listening to LaRouche, but preferred their own delusions.

Dec. 29, 2008, economist Robert J. Samuelson, "Humbled by Our Ignorance," *Washington Post:* "The great lesson of the past year is how little we understand and can control the economy.... Go back to the onset of the crisis in mid-2007. Who then thought that the federal government would rescue Citigroup or the insurance giant AIG; or that the Federal Reserve, striving to prevent a financial collapse, would pump out more than $1 trillion in new credit; or that Congress would allocate $700 billion to the Treasury for the same purpose; or that General Motors would flirt with bankruptcy? In 2008, much conventional wisdom crashed."

Dec. 27, 2008, Nobel Prize winner Paul Krugman to CBS's "Face the Nation": "You know, if we were as ignorant as we were in the 1930s, I think we would be facing a second Great Depression."

Dec. 16, 2008, Mario Draghi, governor of the Bank of Italy and chairman of the Financial Stability Forum, speech in Hong Kong: "One striking aspect of the crisis is precisely how its unfolding has continued to catch both policymakers and private sector players by surprise. It started with defaults in a marginal segment of the financial services industry, then quickly spread to virtually all assets. From being a U.S.-only event, it has become global.... None of these steps had been anticipated in a timely way by the relevant actors."

Nov. 18, 2008: "Paulson, Bernanke Defend $700 Billion Bailout," Associated Press: Treasury Secretary Henry Paulson said that the U.S. has "turned a corner" in averting a financial collapse.

Nov. 13, 2008, Paulson, National Public Radio: "I believe the banking system has been stabilized. No one is asking themselves anymore, is there some major institution that might fail and that we would not be able to do anything about it?"

Oct. 23, 2008, former Federal Reserve chairman Alan Greenspan, Congressional testimony: "Those of us who have looked to the self-interest of lending institutions to protect shareholder's equity—myself especially—are in a state of shocked disbelief." Referring to his free-market ideology: "I have found a flaw. I don't know how significant or permanent it is, but I have been very distressed by that fact." Rep. Henry Waxman (D-Calif.) asked, "In other words, you found that your view of the world, your ideology, was not right, it was not working?" "Absolutely, precisely," Greenspan replied. "You know, that's precisely the reason I was shocked, because I have been going for 40 years or more with very considerable evidence that it was working exceptionally well."

Sept. 14, 2008, Donald Luskin, *Washington Post:* "Anyone who says we're in a recession, or heading into one—especially the worst one since the Great Depression—is making up his own private definition of 'recession.'"

July 20, 2008, "Paulson 'Very Optimistic' on Freddie, Fannie Rescue," Bloomberg: Paulson said the banking system is "sound" and regulators are being "vigilant."

Aug. 20, 2007, Paulson, testimony to House Financial Services Committee: "U.S. economic fundamentals are healthy: unemployment is low, wages are rising, and core inflation is contained. Although the recent reappraisal of risk, coupled with weakness in the housing sector, may well result in a penalty, the fundamentals point to continued U.S. economic growth."

Aug. 1, 2007, "Paulson Sees Subprime Woes Contained," Reuters: "Paulson said the repricing of credit risk was hitting financial markets, but U.S. subprime mortgage fallout remained largely contained due to the strongest global economy in decades...."

plagiarist of A.R.J. Turgot, Adam Smith, as of Smith's avowed follower Karl Marx, or as the standpoint of Immanuel Kant who dared not publish his famous ***Critiques*** until the great Moses Mendelssohn was, from Kant's standpoint, safely dead.[3]

The world did not fail us. The examples of competent heroes, variously prominent or little recognized, are evidence of the contrary, willful sources of our presently looming threat of a planetary tragedy.

Economics As Science

What might have been taught as a competent approach to the subject of economy, would be essentially a branch of physical science, specifically the viewpoint of physical science from the vantage-point of the discoveries of Gottfried Leibniz and Bernhard Riemann, or, a refined view of that work of Leibniz and Riemann provided by considering the discovery of the concepts of Biosphere and Noösphere by Academician V.I. Vernadsky.

To wit: There is nothing mysterious in this bit of irony. The only science of economy which has existed in any part of modern European civilization, is that which was introduced by Gottfried Leibniz, which was an explicitly anti-Cartesian science of the dynamics of *physical economy* (rather than monetarist varieties of economy). Thus, simply said, the incompetence prevailing among most of the nations' so-called "economics experts" today, is a product of that on which they, and misguided governments, have premised their stated academic claims to competence in this field.

Despite the numerous, important, and even great achievements within the work of physical science generally, these individual achievements have become, more and more, notable exceptions to the more general trend launched by the replacement of such leaders of France's Ecole Polytechnique as Gaspard Monge and Lazare Carnot, by the British-appointed charlatans Laplace and Cauchy. Despite the circles of Alexander von Humboldt, Carl F. Gauss, Lejeune Dirichlet, Bernhard Riemann, Max Planck, and Albert Einstein, the Twentieth Century's science emerged as dominated, as a current trend, by a succession of hoaxsters typified by, first, the mechanistic nonsense of Ernst Mach and, soon after that, the psychotic numerology of the evil Bertrand Russell and such among his typical dupes as Professor Norbert Wiener, John von Neumann, and the Russellite Cambridge school of systems analysis.[4]

The marker of this long trend in corruption of the teaching of Anglophile "science" has been that cult of the practitioner of black magic, Isaac Newton (who, probably, to his credit, actually discovered nothing), but who has been credited with the discovery of the mathematical expression for gravitation which was known, on published record, and in massive detail, by Johannes Kepler from whom Newton's boosters pilfered that mathematical formulation.

Competent instruction in economics will reappear in universities and kindred institutions, only if, or when what passes currently for competence in such institutions, today, has been suitably replaced.

I explain the nature of the widespread incompetence of the economic departments of universities and kindred institutions. My emphasis is upon economics; but, it can not be competently overlooked, especially after considering the wreckage of the world's economy now, that competent economics is a branch of physical science, not the childish witchcraft of mere monetary and related statistics.

Let us therefore resolve to learn this lesson before it comes too late to rescue the planet from the present lurch at the brink of a planetary new dark age.

I. Prince Philip: Man or Beast?

The current trend in substitutes for competent economic models, is typified by the Nazi-like, pro-genocidal policies of Britain's Prince Philip's and the late Prince Bernhard's World Wildlife Fund (WWF), policies which are a lawful outcome of the views which they share with Prince Philip's lackey, the silly, but nasty former U.S. Vice-President, Al Gore.

Notably, prior to his marriage to a Dutch princess, Bernhard had been a member of the Nazi Waffen-SS, from which he had resigned, with a salutary "Heil

3. Leading 18th-Century scientist and mentor of young Gotthold Lessing. Lessing and his friend Moses Mendelssohn had been the central figures in the launching of the middle to late Eighteenth-Century cultural renaissance in Europe, until the French Revolution's Reign of Terror.

4. The positivists Ernst Mach and Bertrand Russell represent successive states of intellectual and moral decadence in the direction set by such expressions of de-constructionism as Russell's essentially fraudulent ***Principia Mathematica***, his sponsorship of Cambridge systems analysis, and such among his offshoots as the debased Professor Norbert Wiener and the even more radical John von Neumann. The practice of digital recording in subjects of Classical musical composition is typical of the reductionism of both Mach and Russell.

National Archives

President Harry Truman and Mrs. Truman (on left) with Prince Bernhard and Queen Juliana of the Netherlands, 1952. Bernhard was a youthful member of the Nazi Waffen-SS; his letter of resignation was signed with the flourish, "Heil Hitler!" The letter is on file in the U.S. National Archives.

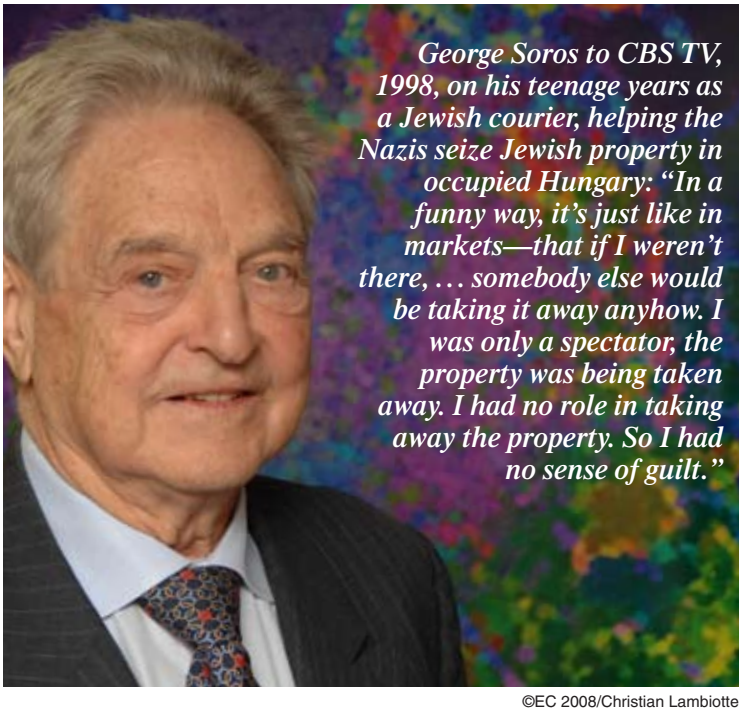
Hitler!"on the day of that wedding. Prince Philip, for his part in the world-wildlife duo of Princes Philip and Bernhard, has speckled the literary record with references to related affinities in his own family background. No matter how much some of this pair's professed admirers attempt disclaimers of their pro-Nazi connections, the essential fact remains, that the population policies of the World Wildlife Fund are an echo of the beliefs and practices which the pair share, axiomatically, as the tradition of their predecessor, Adolf Hitler.

Thus, similarly, when we look back with opened eyes to the relevant U.S. anglophiles of the 1920s and 1930s, we can not ignore the systemic implications, then, and for today, of the record of the history of homicidal race and population dogmas of the family of the same Averell Harriman whose firm, Brown Brothers Harriman, played a crucial role, together with the Bank of England's Montagu Norman, in putting Adolf Hitler into power in Germany.[5]

To get inside the morally deranged mind of a Prince Philip or his virtual spotted clown, the former U.S. Vice-President Al "Bozo" Gore, today, we must come to grips with the essential point of principle underlying these connections: that Soros, Prince Philip, and Al Gore, as judged by pattern of the effects of their practice, regard ordinary people not as actually human, but as cattle who might be drugged by the likes of George Soros, slaughtered, or simply starved to death, on the whim of the feudal ownership over a mass of people treated as a virtual form of human cattle. Since these modern oligarchs deny the efficiently principled distinction between man and beast, despite being men themselves, they behave toward mankind as predatory beasts do, and proclaim their behavior properly ethical because they have "the bully pulpit" from which to say so.

Unfortunately for mankind, the evil which a Prince Philip, Prince Charles, Prince Bernhard, or Gore typify, is not unusual in history. Look beyond the case of the

5. The truth is not told adequately until we take into account the role of certain nominally Jewish banking houses which openly backed Hitler up to a certain stage of the evolution of the Hitler regime itself. When we consider the Nazis' overt anti-semitic practices up to the point of *Kristallnacht*, this fact beggars most powers of comprehension, until we take into account a related matter of the personal history of British agent George Soros. The point to be emphasized the most, is not the isolated fact of Soros' role as a teen-age errand-boy for the Nazi processing of Jews into death camps, but the fact that this moral defect in his personal history has emerged as his qualification for selection for the role in moral degeneracy which he expresses with his financial and drug-trafficking policies in service of the British Crown today.



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Roman Empire's treatment of gladiators or targeted ethnic groups. Take the case of the Pantheonic depravity of that Julian the Apostate whom Lord Shelburne selected as his model for the role of the British Empire. This is a model which has been kept up to date in British practices against Africa's Sudan, Zimbabwe, Congo, and so forth. Look back to the 1790s, to the cases of the British Empire's, and the New England followers of the British East India Company's Judge Lowell, in the matter of opium policy, from that time to the role of the depraved British imperial asset and dope-pusher George Soros today. Take the case of the British agents who served as leaders of the Confederate States of America, or the British use of the Nineteenth-Century Spanish monarchy to run the African slave-trade in the interest, and under the protection of the British monarchy.

These issues, thus posed summarily, are more often seen as moral issues, rather than scientific ones. It follows that the idea of a sovereign freedom of choice in defining governmental power, prompts the credulous to degrade the discussion of the apparent moral issue to the sophistry of a "legitimate" debate over ethics among differing cultures, rather than an absolute matter of difference between what are properly seen, scientifically, as universal scientific standards, rather than a merely "differences in tastes among the chosen cultures of a pluralist world."

Vernadsky & Leibniz's Dynamics

A certain question is thus posed by my immediately preceding remarks: *is there a strictly scientific standard of truthfulness to be applied to these cases?* Examine that question from the vantage-point to which I shall return repeatedly in this report, that of Academician V.I. Vernadsky's distinction of the *dynamics* of the animal ecology of the *Biosphere,* from those of the *Noösphere*. The immediate suggestion is, that we might begin that examination by contrasting the animal ecological potentials of the higher apes generally with those of human populations generally.

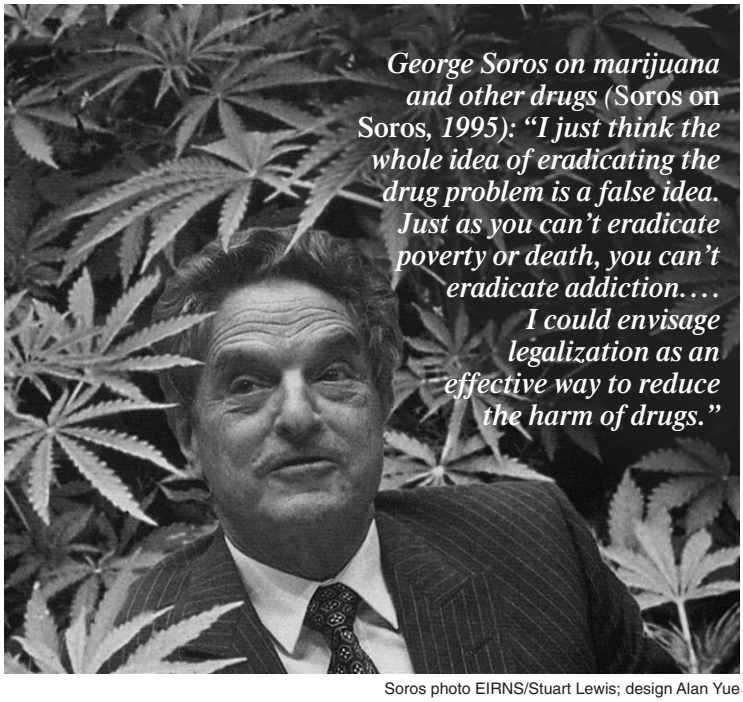
Therefore, let us follow the trail of implications posed as a challenge to us, by what had been the experience of the emergence of modern European civilization from a Fourteenth-Century "new dark age." This had been a Renaissance pivoted on the great ecumenical Council of Florence and the related launching of all competent modern science from the work of Cardinal Nicholas of Cusa's ***De Docta Ignorantia.*** Examine the consequences of Cusa's own part in this work, as traced through the discovery of universal gravitation by a follower of Cusa, Johannes Kepler, that in a process leading to, and through the defining of the Biosphere and Noösphere by Academician V. I. Vernadsky.

Conduct this exploration from the pivotal standpoint of Gottfried Leibniz's revival of the principles of the ancient Classical *dynamis* of the Pythagoreans and Plato in their expression as modern *dynamics*. The essential difference between the two ancient and modern, but, otherwise, equivalent notions, lies in the actual revival of the concept of *dynamis* in works founding modern science by Nicholas of Cusa, starting from his ***De Docta Ignorantia***, but with the difference, as expressed by Leibniz's work from the 1690s onward, which was based on Kepler's uniquely original discovery of the universal principle of gravitation, as in Kepler's ***The Harmonies of the World.*** The significance of Kepler's uniquely original discovery of universal gravitation, as Albert Einstein emphasized this connection, is the first experimental demonstration of the self-enclosure of the universe by a discovered universal physical principle, Leibniz's revival of the Classical Greek notion of *dynamis* as modern *dynamics*.

The principal obstacle to recognizing the importance of Cusa's, Kepler's, Leibniz's, Riemann's, and

Einstein's work on this account, has been the utterly fraudulent efforts by the followers of both the Aristoteleans and Paolo Sarpi's empiricists, to deny the existence of such a discovery as that by Kepler.

This poses the question. Since a detailed account of the relevant process of discovery of universal gravitation, by Johannes Kepler, is fully on record, why did the lackeys of Paolo Sarpi, such as Galileo, take such a hearty risk as they did, in their efforts to falsify one of the greatest, and most clearly elaborated cases of a discovery of a universal physical principle? What existential interest could have driven the followers of Sarpi to take the risk inhering in the fraud of attributing the discovery of gravitation to a silly wretch like Isaac Newton? Why do men and women who are otherwise credible scientists today, still defend the fraud of attributing the discovery of gravitation to silly, "black magic" specialist Isaac Newton?



Soros photo EIRNS/Stuart Lewis; design Alan Yue

Once the clearly, original, proven proof of principle in Kepler's work is acknowledged, the essential nature of the fraud perpetrated against modern science by the Newtonians and their positivist followers, becomes clear. Since no truly rational proof against Kepler's discovery is possible, all empiricism and its positivist or Aristotelean corollaries have resorted to what have been simply outright lies, to supply the basis for their general arguments. Why did they take that risk, for which I, for one, am quite eager to hold them to account? If one understands Paolo Sarpi and his legacy, the answer to this question is elementary.

II. Liberalism: the Case of Paolo Sarpi

Given such contributions to modern science as Filippo Brunelleschi's discovery of that principle of the catenary which he employed for crafting the cupola of Florence's ***Santa Maria del Fiori***, the principled establishment of modern physical science was the accomplishment of a series of works by Cardinal Nicholas of Cusa beginning his ***De Docta Ignorantia.*** Cusa, who inspired Christopher Columbus' voyage to discover lands and people on the other side of the Atlantic, encountered strong, continuing, Venetian financier resistance to the launching of both physical science and the modern sovereign form of nation-state, a resistance focused in the role of the Habsburg oligarchy's grab of imperial power in both Austro-Hungary and the Spanish monarchy. The religious warfare launched in the form of the Spanish Inquisition, opened up successive waves of religious warfare, launched by that Inquisition, which continued through Europe and beyond, until the 1648 Peace of Westphalia. This continuing warfare reached a critical turning-point in a combination of developments during the span of the reign of England's Henry VIII through the conclusion of the religious Council of Trent.

The significance of this turning point, is best defined by examining the crucial roles of two Venetian gentlemen: first, Francesco Zorzi (a.k.a. Giorgi), and, later, Paolo Sarpi. Those who remain ignorant of that crucial role of these two gentlemen, in all modern history to date, deny themselves any effective comprehension of the most characteristic features of all modern world history up through the experience of the global crisis of the present day.

Zorzi has two principal claims to continuing fame. On the one account, he launched an attack on Nicholas of Cusa's ***De Docta Ignorantia*** which has continued to serve as the model attack on the fundamental principles of modern science to the present day. On the second account, Zorzi, ranking as virtually the chief of the Venetian intelligence service at that time, also appeared in

Royal Academy of San Fernando, Madrid

Francisco Goya, "The Procession," c. 1816. Flagellants during the Spanish Inquisition. The Inquisition launched waves of warfare throughout Europe, stopped only in 1648 with the Peace of Westphalia.

England in the adopted, fateful role as marriage-counsellor to King Henry VIII. Zorzi, working with such Venetian-controlled scoundrels as Plantagenet heir Cardinal Pole and Thomas Cromwell, orchestrated the onset of the series of Henry VIII's bloody divorces which caused the breaking of what had been the relatively peaceful relations of the Spanish, French, and English monarchies. Thus, Zorzi, through his conversion of Henry VIII, defined the continuing direction of the protracted warfare of northern, Atlantic-based, Protestant, forces, against the Mediterranean-based, nominally Catholic, European peoples. This was a period of warfare which continued until it was ended by that 1648 Peace of Westphalia which was orchestrated by the Cardinal Mazarin who had been deployed into France, as an intended successor to Richelieu, by his own sponsor, the Pope.

In the meantime, following the Council of Trent, a new Venetian master-mind, Paolo Sarpi, emerged to rally a leading section of Venetian financier interests into the northern Protestant Europe which had been united by Francesco Zorzi's manipulation of England's Henry VIII. Hence, Sarpi played a key role in pre-orchestrating a successor, the so-called Thirty Years War, to that phase of the continuing religious warfare which had been organized around the marriages of England's Henry VIII. The Sarpi who virtually pre-orchestrated that Thirty Years War, was actually continuing the strategic mission of Francesco Zorzi, but under slightly altered pre-conditions. So, sometimes in history, as from 1492 until 1648, the more things change, the more they remain the same.

But, then, suddenly, a long-reaching new phase of history emerges, a new phase reaching out as if to encompass the planet as a whole.

For an adequate appreciation of what had been the 1492-1648 religious warfare considered as a whole, we must look ahead from those developments of the Sixteenth and Seventeenth centuries' tradition of Zorzi and Sarpi, to the contrasting shift of power to the British monarchy of Britain's George I, but, more emphatically, to the February 1763 emergence of a private, Anglo-Dutch Liberal financier's empire, the British empire, which established a long period of history, to the present day, one launched under the leading direction of the British East India Company's Lord Shelburne. Between the folly of France's Louis XIV and the launching of the so-called Seven Years War, a new long wave in world history had begun.

Dupes of contrary opinions aside, the only actually existing world empire today, is still what is known, nominally, as the British empire, an empire ruled by financial speculators gathered around international financier interests, including speculative U.S. Wall Street interests. This is an empire centered in London, based presently on those Anglo-Dutch and Saudi oligarchies which have come to dominate the world at large since the assassination of U.S. President John F. Kennedy

and, more obviously, the set of international financial and social crises of 1968-1973 leading into the imperial role of what became the central axis of international terrorism today, the Anglo-Dutch-Saudi petroleum "spot market" and its traditionally Anglo-Dutch Liberal drug-trafficking of Britain's leading world drug trafficker of today, the consummately evil drug-pusher, George Soros.

Why Paolo Sarpi?

I see no essential difference between the intentions of Francesco Zorzi and his most notable successor Paolo Sarpi. The intention of the two was broadly the same. It was the issues of the Council of Trent which prompted the appearance of an essentially merely apparent, circumstantial difference in intention between the two. To grasp this aspect of the matter, one must turn attention to the impact of Niccolo Macchiavelli's founding of what became modern military strategy.

Two great documents authored by Nicholas of Cusa, his ***Concordancia Catholica*** (the ecumenical concept of the modern sovereign form of nation-state) and his later founding of modern science, ***De Docta Ignorantia***, had led into such relatively durable outcomes as the establishment of the French monarchy under Louis XI, and the great English reform inspired by Louis XI's reforms, under England's Henry VII. The combined effect of the work of Brunelleschi, Cusa, and such among their followers as Luca Pacioli, Leonardo da Vinci, and Raphael Sanzio, had set into motion a great revolution in science, economy, and Classical artistic composition, a set of achievements whose outcomes had been greatly enhanced in the political, social, and economic reforms expressed in Louis XI's France and England under Henry VII. Macchiavelli, who had been a secondary leading figure in the republic of Florence associated with the influence of Leonardo da Vinci, emerged, under "house arrest," as the prophetic historian who, in fact, launched modern military science. It was the implications of Macchiavelli's founding of modern military science, which define what provoked the Venetian faction of Paolo Sarpi to react with its break with Aristotle. It was on this break, that modern, imperial, Anglo-Dutch Liberalism has been founded, by Sarpi and his followers, up through the present moment.[6]

The unifying principle among the oligarchical opposition to Cusa and to the great ecumenical Council of Florence, had been the oligarchical principle centered in the controlling role of Venice-centered international financier interests. The Council of Florence, which had been influenced by Nicholas of Cusa's conception of an ecumenical community among modern sovereign nation-states, was an anathema to the oligarchical factions in general, and to that Venetian usurers' interest which had not only dominated feudal Europe with the decline of Byzantine power, but whose practice of usury had plunged all of Europe into the mid-Fourteenth-Century "new dark age" which had reduced the population of Europe by about one-third.

The Fifteenth-Century Renaissance's increase of the productive powers of labor, which had been set into motion by the work of such as Brunelleschi (A.D. 1377-1446), Cusa (A.D. 1401-1464), et al., and Louis XI's reforms, had transformed the characteristics of the urban populations, moving society in a systemically Promethean direction of scientific and technological progress. The included effect of this was a change in the conditions of warfare and economy within Europe.

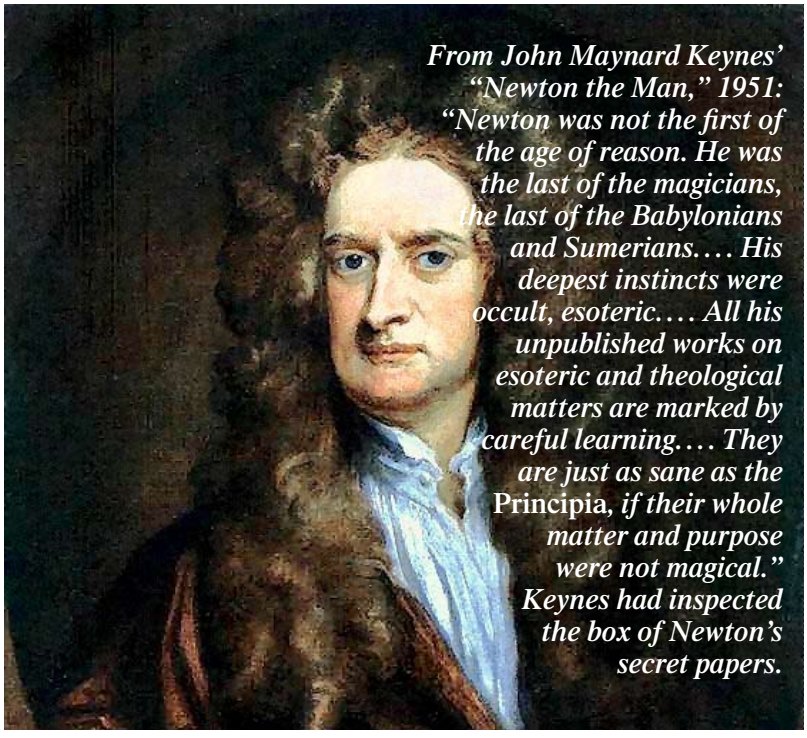
This change in social relations in Europe, created a new kind of difficulty for the pro-feudal traditions in their attempts to revive the use of medieval forms of warfare waged against the new sentiments among the people generally, especially in the emerging developments in and around the cities. The revolutionary economic reforms in Louis XI's France and Henry VII's England, are typical. The depraved Spanish Habsburgs never recovered from the ruin they inflicted upon themselves, and the relative power of the Austrian Habsburgs proved unable to breach the Eighteenth-Century defenses of a France which had been developed as a heritage of Mazarin and his protégé Jean-Baptiste Colbert.[7] The uniquely original discovery of the principle of Solar-systemic gravitation, by Johannes Kepler, was a persisting, central feature of this continued revolution

6. Foolish so-called historians, locate the roots of empires in nations; all empires since the turn called the Peloponnesian War, have been defined by a supranational, rather than a national principle, as Lord Shelburne adopted the model of Julian the Apostate, to define what he defined as the British Empire. Thus, the British Empire is not an empire of the United Kingdom, but is an Anglo-Dutch-Saudi Liberal imperialism, like that of Julian the Apostate, as today.

7. For example, the defenses at locations such as Belfort and Neuf Breisach. The terrible difficulty which the Prussian forces under Helmuth von Moltke faced in Belfort during the Franco-Prussian War, is indicative. The essentially intact fortifications which were still visible at Neuf Breisach when I last visited there nearly a decade ago, are impressive, in principle, and help to make the relevant point.

in science and economy. Macchiavelli had defined the nature of this challenge to modern European strategic practice.

It was against this new political-economic strategic factor of progressively changing scientific and related progress, that Paolo Sarpi, a true heir of Francesco Zorzi, mobilized his revolutionary doctrine of Liberalism. It was the action by Sarpi's faction, to allow some innovation, but deny the existence of any actual principle of the universe, which was the motive, launched by agents of Sarpi's faction such as Galileo, against acknowledging the well-documented discovery of gravitation by Kepler. Hence, the political birth of the myth of Isaac "science for dummies" Newton.



From John Maynard Keynes' "Newton the Man," 1951: "Newton was not the first of the age of reason. He was the last of the magicians, the last of the Babylonians and Sumerians.... His deepest instincts were occult, esoteric.... All his unpublished works on esoteric and theological matters are marked by careful learning.... They are just as sane as the Principia*, if their whole matter and purpose were not magical." Keynes had inspected the box of Newton's secret papers.*

If we are to grasp the underlying, axiomatic presumptions on which the creation of the Anglo-Dutch-Saudi financier empire of today has been built, we must grasp the lesson taught by Aeschylus' Prometheus Bound, and read that against the background of the ***Iliad***. To build and maintain an empire, it is essential to stupefy the great mass of the subject populations in a certain way. The essential thing is to degrade the mass of the population by what pass for certain religious, or anti-religious beliefs, as in the pantheonic model of the Byzantine Julian the Apostate, on which the actual British empire has been premised, from its outset under Lord Shelburne, Jeremy Bentham, et al. The anti-nuclear-energy ideology of the relevant, virtually mentally deranged unfortunates of today, is typical of the way in which weird, pagan superstitions have been used to lead the nation of a once-great people into bestializing themselves. The essential principle of all empires has been the aim to suppress scientific and comparable development of the human mind in the manner which Aeschylus exposed in his ***Prometheus Bound***.

Thus, from such a reading of ***Prometheus Bound***, we must recognize the way in which that form of moral degeneracy which became post-Charlemagne feudalism, had led itself into the Fourteenth Century's ruinous "New Dark Age." This new degeneracy had been revived against the influence of the great ecumenical Council of Florence, as revived under Venice's direction of the conquest of Constantinople, in an effort to ruin the revolutionary accomplishment associated with the role of Nicholas of Cusa, this as expressed by Cusa's role in the continuing, great ecumenical Council of Florence. This was an echo of a long wave in the history of European civilization, one dated since the aftermath of the Peloponnesian war, a very long wave of struggle between the oligarchical principle of the cult of Delphi, and the contrary, humanist impulses associated with the legacy of the Pythagoreans and Plato.

Thus, the European oligarchy typified by the case of the alleged whisperings of the evil gods and demi-gods of the Homeric ***Iliad*** and the subsequent Classical Greek tragedies of the pro-Satanic, Apollo-Dionysian cult-traditions, has been situated in a kind of see-saw conflict between European culture's oligarchical and humanist traditions. In these conflicts, the oligarchy has always come to understand that its most deadly adversary is those creative powers of individual human reason which are expressed in the practiced discoveries of universal principles of physical-scientific and Classical-artistic progress. These are the principles which define mankind, as in ***Genesis*** 1, as unique among living species, as an implicitly sacred species distinct from all forms of animal life.

The tradition of oligarchism has always been the forceful suppression of the creative powers of discovery of higher principles, discovery which is expressed typically in such forms as fundamental scientific prog-

ress. This suppression of the creative powers of the members of society, is usually expressed in the mode of the popularized cultural backwardness of what might be misnamed "human nature," against the contrary, allegedly "aggressive" impulses of human scientific or Classical artistic creativity. *The foe which Satan fears the most, is the Promethean soul which sets the human individual apart from, and above that bestiality which fools call "human nature."*

Thus, the Fourteenth Century "New Dark Age," was brought on by the predatory practice of usury by that Venetian interest behind the Lombard bankers of that time, which, like the pro-Satanic usurers of the financial-derivatives swindles of today, have always been the typical expressions of the witting, man-eats-mankind, adversaries of the most essential interests and characteristics of our human species, that within us, which sets us, categorically, apart from the beasts.

Culture & Human Immortality

However, this reality of human, as distinct from animal nature, becomes difficult for some people to grasp, as long as they cling to the delusion that the meaning of human life begins with the individual's birth, and ends with that individual's death. The truth of the matter lies in evidence bearing upon that uniqueness of human progress, as distinct from all other living creatures, progress through a process embodied, as if in principle, in a meaningful succession of generations, from distant ancestor to distant generations to come. *The distinction of mankind from beast lies, essentially, in those creative powers of the human mind which are not manifest in any form of animal life, creative powers typified by Johannes Kepler's uniquely original discovery of the principle of a universe self-encompassed by a universal principle of gravitation, and other, discoverable principles of that ontological significance.*

For the moment, in this present chapter, it is sufficient to emphasize that crucial point, that our ability to replicate the experience of progress as defined in terms of valid discoveries of new universal principles, expresses a quality of human immortality which does not exist among beasts.

There is nothing essentially novel in my outlook on this point, if, and when matters are considered from the standpoint of the history of ancient through modern astronomy and science generally.

The issues of physical-scientific principle posed here are to be located as on two levels:

> *First, more immediately, the view of the physical domain of our experience from the standpoint of the products of experimental physics as such, as our subject of investigation.*
>
> *Second, the reverse view of the distinctively human powers; this time, we are focused on discovering the nature of the creative powers of the mind of the human individual in society, themselves, that from the standpoint of discovering the provable principles of discovery of the human mind, as such, as these powers have been presented to us, as a subject themselves, as by the evidence of the practical achievements of experimental physics.*

The first challenge is that which is more readily understood by the development of the mind for scientific work generally. The second, more profound, most important challenge, is the unique significance of the individual human mind's creative potential, as this becomes discoverable knowledge, through which the work of that mind is illuminated by attention to the creative powers of the human mind which are made known to us only through considering not only the human mind's role in the act of discovery of such principles, but the discovery of such principles as itself dependent upon what appears to us as the spiritual vantage-point—continuing development accomplished across successive generations—of the sovereign individual human mind's power for successive discovery, a continuing process across generations, of higher outcomes in the generation of such physical principles.

III. Kepler's Principle, and Mine

There are two crucial comments which have been supplied by me, which must be now stated again, and also emphasized, if we are to grasp the deeper implications of that which Albert Einstein recognized, and expressed in his retrospective view of Kepler's discovery.

In that view, Einstein emphasized that all competent modern physical science must be located in the implications, from the standpoint of Bernhard Riemann's method, of Kepler's uniquely original discovery of the principle of universal gravitation. These implications are, *first*, his comment that the physical space-time implicitly defined by Kepler's discovery, is implicitly

NASA

The abiotic world, the Biosphere, and the Noösphere, at one glance. A camera on board a spacecraft (the product of man's creative mentation) captures the beautiful image of the biotic Earth and its Moon. Kepler's discovery provides insight into the categorical distinction among the three domains, as developed later by V.I. Vernadsky.

Riemannian, and, *second*, the comment, that this view of Kepler's discovery of that principle of universal gravitation specific to the organization of the Solar System as a whole, is that, which, when considered from the vantage-point of Riemann's discoveries, defines the universe as, in first approximation, a self-bounded unit, without any external limits but those contained within, and expressed by the universe's own, intrinsically anti-entropic, universal physical space-time.

The intersection of these heretofore almost unknown implications, is the indispensable foundation for any thorough identification of that feature of human behavior which is uniquely human, the principle of the Noösphere as such, and thus locates the essential principle of any competently scientific view of economy.

I develop the needed elaboration of that argument in the following successive steps.

To begin: the crucial feature of Kepler's own uniquely original discovery of the Solar system's universal principle of gravitation, was Kepler's locating the experience of that principle's existence, outside the perception of sight or sound as such. That is to say, that Kepler departed from the popular, but foolish assumption, that reality is located in the kind of sense-certainty attributable to the a-priori presumptions of a Euclid or Aristotle. In place of sense-certainty, Kepler treated the human senses as, in practice, comparable to the inherently imperfect scientific instruments crafted for the purpose of adducing the significance of a phenomenon located experimentally beyond an astronomical or a microscopic, or sub-microscopic scale.

Restate that just-stated crucial point as follows.

Treat the human sense-perceptions as presenting us with virtual shadows, shadows cast upon the sense-perceptual medium, by an action which, itself, is not actually seen directly. As I have stated this in earlier locations, this means, that we should take the case of Helen Keller, who was blind and deaf, but, who developed a powerful social insight into the world, that of the humanity which she could neither see or hear. What the senses provide the human mind, is merely shadows; the mind must, then, craft, and test, experimentally, an image of the actual process which casts those shadows which we know as sense-perceptions. *So, in the case of Kepler's discovery of the composition of the Solar orbits, the image of sight, and the image of harmonically ordered hearing, were both contrasted and combined, by Kepler, to enable the experienced, but unseen, unheard mind, to adduce the physical reality of the "unseen" evidence as that which had cast the sense-perceptual shadows.*

To sum up this point thus far: What Kepler's discovery of gravitation proved, is that what our senses induce us to perceive, are not the substance of reality, but the shadows which reality casts in the form of sense-perceptions. *What unsensed, Leibnizian, "ontologically infinitesimal" object, then, generated those shadows known as such perceptions? That is the crucial ontological question, on which all competent modern science depends.* Albert Einstein, using Bernhard Riemann's discovery as a pivotal point of reference, makes those matters clear, as follows.

This view of Kepler's work by Einstein, holds up, as we trace the pathway of discoveries from Cusa's ***De***

Docta Ignorantia, through those of Kepler, Fermat, Leibniz, and the Nineteenth-Century treatments of the subject of elliptical functions, and through the added, crucial, original discoveries by Riemann.

The most significant type of such effects of reading of the sense-perceptual shadows, is the experimental proof of principle of the efficient existence of a concept, which, while proven as a matter of experimental principle, actually exists for the human mind, but, whose existence is merely reflected in the shadows cast as sense-perceptions. These experimentally proven, merely adumbrated existences of principles, are expressed as the attributable, ontologically, rather than sensory, existences of those *Leibnizian* infinitesimals which correspond to the presence of efficiently universal physical principles.

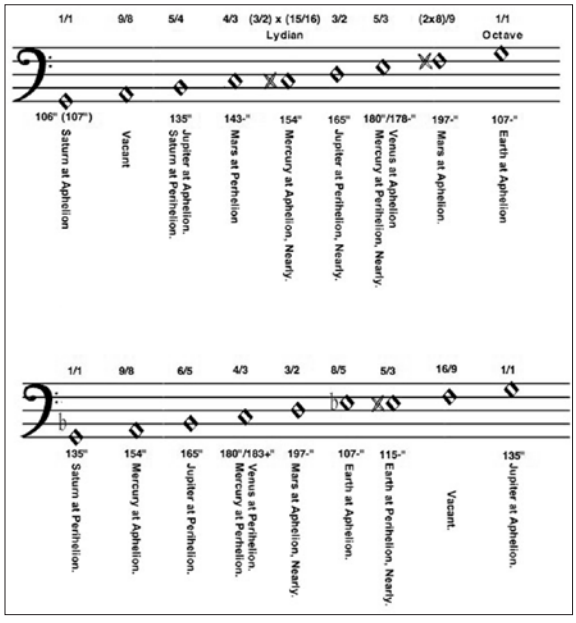
These existences whose presence is reflected as such kinds of shadows, such as the infinitesimal of Kepler's elliptical function for gravitation in the planetary orbit, as in his ***The New Astronomy***, are not *mathematically*, but only *ontologically* infinitesimal; they are not a quantity of space, but the location of an ontologically infinitesimal moment of *a universal principle of action in space-time*, an infinitesimal *place* which corresponds to the immediate shadow cast by a universal principle of action expressed in its efficient existence as what is apparently the infinitesimally small.[8]

The relevant experiment is presented in the LaRouche Youth Movement's (LYM) web-site account of the unique choice of successful method through which Kepler defined what is reflected as his general formulation for the harmonic ordering of the composition of the Solar planetary system, as the discovery-process is elaborated in his ***The Harmonies of the World.***

wlym.com/~animations

Johannes Kepler (1571-1630) gave modern science its first practicable, scientific conception of the astronomical universe. The illustrations here are from the LaRouche Youth Movement's "Basement" project on Kepler's Harmony of the World*; the LYM explicates this monumental work through the use of animated graphics and musical examples (www.wlym.com/~animations).*

The drawing is from Kepler's frontispiece to his 1627 Rudolphine Tables. *It shows Copernicus and Tycho Brahe at the center, while Hipparchus and Ptolemy look on. On the base, the panel to the left shows Kepler himself, laboring by candlelight.*



The musical scales shown here are taken from Kepler's Harmony, *and show the "tonalities" of the harmonic orbits of the planets (these can be heard on the website). Above is the major scale; below is the minor scale.*

8. The present-day doctrines of philosophical reductionism circulated in the name of physical science, were introduced as a suggestion by de Moivre to D'Alembert, that these apparent discontinuities ("singularities") must be regarded as imaginary. Their follower, Leonhard Euler, codified that suggestion in a famous, but intrinsically incompetent attack on Leibniz, which prepared the pathway for the frauds by Laplace and Cauchy.

However, the first giant step in that direction, is that which Kepler took in his ***The New Astronomy***. Once he had recognized the elliptical character of the Earth's orbit, and also the significance of that elliptical form of physical function, that from the standpoint of equal-sectors/equal times, Kepler had already, thus, discovered the kernel of the concept of *an ontologically, rather than mathematically infinitesimal,* as characteristic of the elliptical orbit.[9]

This proved crucial when Kepler turned to the composition of the Solar System as such, as in ***The Harmonies***. So, he proceeded, pedagogically, from an early emphasis on the Pythagorean-Platonic concept of a lawful progress in the universe, to an harmonic principle of action underlying the Platonic form of effect among the determined relationships as stated, in first approximation, in an ironical juxtaposition of sight and harmonically ordered sound. Thus, we have Einstein considering the matter of the Kepler-Riemann relationship from the standpoint which Einstein shared with Max Planck, in common with their case against the positivist reductionists who appeared in the wake of the moral depravities of the quantum "mechanics" of the followers of Ernst Mach and Bertrand Russell.

It is the role of harmonics in that experimental configuration, which prompts the banshee-howls of protest from reductionists such as the empiricists generally, or the positivists such as the Machians and dupes of Bertrand Russell. Like the fundamentalist parson who wrote in his Bible, "Text unclear, shout like Hell!," the physicist who is a dupe of empiricism or its like, does not argue rationally, but, as I have frequently observed this directly, simply screams like a banshee, when the discussion turns to subjects comparable to Kepler's actual discovery of universal gravitation.

However, my principal subject here is not the apparent physics of Kepler; I reference Kepler's discovery, to indicate the relevant insight this contributes to recognition of the essential nature of the creative powers inherent in the distinction of the human individual from the beasts: the categorical distinction of Noösphere from Biosphere. The urgent problem which I am considering in this report, is not the human being looking at a physical subject-matter, but, instead, seeing into the nature of that within that nature of the human individual which enables that individual to muster the processes through which such discoveries of physical principle are actually made.

In the case of Kepler's discovery of the general principle of Solar gravitation, it is the harmonic "wave function," as opposed to particle function, which, when expressed in the quality of an ontological, rather than a merely mathematical infinitesimal, expresses the distinction between perception and knowledge. We do not sense such infinitesimals as being known as particles; we know them as the efficient causes which cast those shadows which universal physical principles express in respect to the truly universal principles by which the experienced universe is ruled. Here lies the essential distinction between mechanics, as by the followers of Ernst Mach or Bertrand Russell, and physical scientific principles. Here, there is no science without morality, and no morality without this view of the mission of science.

The nature and importance of this distinction is made clear through comparison of such experiences from the domain of physical science to those of truly Classical artistic composition. In my own experience, this became clear to me from my reflections on the concluding paragraph of Percy B. Shelley's ***In Defence of Poetry***, a reflection which I was aided in clarifying, by looking at Shelley's work (for example) from the vantage-point of applying Shelley's argument there to the domain of the type of empirical materials presented to me in 1947, in the second edition of William Empson's ***Seven Types of Ambiguity***. The implicit content of Shelley's work, as the point is summarized in his ***In Defence of Poetry***, is implicitly way beyond Empson, but the application of Shelley's argument to the domain of irony as presented by Empson, aids us in grasping, as in Shelley's argument, the principle of humanity which subsumes the creative side of both scientific discovery and man's mastery of the social processes of human progress effected through the aid of what we know as the fundamentals of physical-scientific progress. Scientific truth, is, in this way, that which guides us to fulfilling the moral purpose of mankind's existence in service of his Creator.

At this juncture, all valid Classical artistic composition leaps upon the stage of the mind. Shelley's principle of Classical artistic composition, as summarized in the concluding paragraph of his ***In Defence of Poetry***, points to the key to all expressed forms of great Classical artistic composition on stage, whether poetry, drama, or music, or simply human creativity in general.

9. The references to Nicholas of Cusa in Kepler's reports, often have crucial evidentiary significance, as in the case of this element in Kepler's ***The New Astronomy***. The first modern source for what Kepler argued on the character of the planetary orbit as such was Cusa's discovery that Archimedes had erred in proposing that the generation of the circular pathway could be attributed to construction by quadrature.

This brings us, in Academician Vernadsky's terms, to the principled nature of the fundamental distinction between man and beast, between Biosphere and Noösphere.

The Meaning of 'Physical Principle'

At this point in the account, let us now proceed directly to the crucial issue here. The "spiritual" implications of the systemic form of existential distinction of mankind from all lower forms of life. The nagging question still to be more fully clarified here, is, is mankind a form of animal life, or rather an entirely different quality of existence which is delivered as "packaged" in the apparent form of a higher type of animal life? Is there, in other words, an absolute, physical-scientific distinction of all animal species from the characteristic of the human species? If so, how do we demonstrate that distinction categorically, as presented for our consideration by such relevant figures as Academician Vernadsky?

The essential, experimental form of categorical distinction of the animal kingdom (which Vernadsky locates in the *Biosphere*) and humanity (which Vernadsky locates in the *Noösphere*) is to be made from the vantage-point of the dynamics appropriate to the subject-matter of animal ecology. I signify *dynamics* as defined, repeatedly, against Descartes, by Leibniz during the 1690s, and as elaborated further from the standpoint of Leibniz's follower on this account, Bernhard Riemann.

Now, before proceeding further in that direction, let us pause to make clear what I am saying, by means of putting emphasis on what I am not saying.

Lying Galileo & Silly Descartes

In the method of the follower of Sarpi and Galileo, Rene Descartes, there are no principles, but only either mathematical formulas, or something like that, as this is illustrated in essential respects by Leibniz's exposure of the fraud of Descartes' neo-Euclidean method. These Cartesian, or comparable formulations are characteristically Sarpian; they are mathematical, or mathematical-like substitutes for identifying what is purported to be an actual physical, or comparable to physical principle. They represent, at their least worst, the shadow which might have been cast as a shadow on the screen of the ontologically imaginary mathematical domain. There is no physics in the work of Descartes, but, as for whatever passed for Isaac Newton, only mathematics. Implicitly, all Cartesian and related method, locates action within a form of space which, as such, is, axiomatically, in itself, *a priori*, perfectly empty, Euclidean space-time.

In competent physical science, the Cartesian, or similar method, mere mathematics, is swept aside by physical considerations, as by Cusa and Leibniz. The real universe is presented to us, experimentally, as a set of overlapping/interacting, physical phase-spaces, each defined experimentally as action expressed among a set of principles. Each such phase-space is defined, ontologically, as a certain combination of not geometries as such, but physical geometries, as Leibniz makes that argument in his 1690s papers on the subject of *dynamics,* and as his collaboration with Jean Bernouilli defines the notion of a universal *physical* principle of least action. Thus, each such subject-matter is defined by its characteristic, distinctive boundaries, rather than by merely pair-wise, or kindred, mathematical interactions. These functional boundaries are the expression, in a science of physical economy, of the relevant physical principles.

That much said, now compare the dynamical characteristics of the Biosphere (non-human ecology) with those of the Noösphere (human ecology). Look at the result from the vantage-point of Vernadsky.

The phase-space presently known to us as being represented by the Earth as a whole, is composed of three principal dynamics: a.) The abiotic domain; b.) The Biosphere; c.) The Noösphere. Consider the relevant changes in the total relative mass of each. That is, putting to one side, for the moment, the addition or lessening of the total mass of planet Earth, positive evolution involves a transfer of mass from the abiotic domain, to the Biosphere, and, comparably, transfer of mass from the Biosphere to the Noösphere. This is complicated by the fact, that the only way in which the Biosphere of the planet is increased, is through the action of a principle, life, absent in the abiotic domain, in converting abiotic material to material which is either living, or has the inhering quality of being a product of a living process. Similarly, the increase of the mass of the Noösphere occurs through a mode of action not otherwise found in merely living material, but only through the transformation of the quality of the substance of the Biosphere, which transforms living material into human cognitive being and its products.

This is complicated by the fact that the increase of the Noösphere requires a broader foundation in the development of the Biosphere. This proceeds in a direction, such that the entirety of the mass of the planet,

even, ultimately, the Solar system, is *ostensibly* being assimilated into the Noösphere, through the development of the Noösphere itself, to a higher degree of development per unit of (anti-entropic) measurement.

Against that broadly defined background, now focus on the distinction between the Biosphere and Noösphere.

Animal Ecology

In any competent approximation of an animal ecology, it is the dynamic interaction among the subsumed living processes of which that ecology as a whole is composed, which defines the relative, ecological, potential magnitude of the populations. Thus, compare the ecology of pre-British Australia, which was significantly marsupial-based, with the superior ecology of mammalia. The way in which the rabbit-population spread itself when introduced into Australia, illustrates this point. Australia had been largely cut off from the development of mammal populations, and was, thus, largely a domain of a pre-mammalian evolution, which poorly rivaled the dynamic range of the mammalian species as a whole.

The more significant point, is the relevant distinction between the human species and all other living species. It is not the individual species within a habitat which is crucial; but, rather, what is crucial is the dynamics of the set of those species composing the habitat as a whole. What becomes interesting, therefore, is the effect of the addition to, or subtraction of a species or variety of species from the common habitat.

Thus, the emergence of the human species and its progressive development, redefines the ecology of the animal species, greatly increasing the population, and biological development of some, and extinguishing others. Moreover, while mankind can not generate life from the abiotic domain, as if *de novo*, mankind does derive new forms of living species from living biotic material.

Take, for example, simians and mankind. What is, speaking in terms of Leibnizian or Riemannian dynamics, the crucial difference? Essentially, mankind willfully increases its own species' potential relative population-density through qualitative innovations in its environment, but, also, most emphatically, in the potential relative population-density of its human species.

Consequently, animal ecologies, as Julian Huxley would have argued, are, in effect, fixed genetically in their relative dynamical potential. The human species changes that relative dynamical potentia *qualitatively,* unless that quality of relative change is suppressed, as by methods corresponding to those presented by Aeschylus' ***Prometheus Bound***, or, virtually the same thing, the genocidal methods of "environmentalism," as prescribed by the World Wildlife Fund of Britain's Prince Philip and former U.S. Vice-President Al Gore.

This distinction of the human individual, and human species, from beasts, is fundamental, in the sense that there has been no reported discovery of principle which accounts for this qualitative superiority of the human species (as a category of species) in merely biological terms. In other words, there is a line of distinction between man and beast which is comparable to the line of distinction which distinguishes living from non-living processes. Where the *physical* distinction lies, as that distinction might be expressed in terms of physical experiment, we do not yet know. We must suspect, on grounds of sufficient reason, that the biologically defined human individual is, in some way, tuned into a principle which accounts for the living person's performance of a human noetic function. We know, that when we consider mankind and its known history as a whole, and take the relevant historical process into account, that such a qualitative distinction exists in some way. We know much bearing on the facts of this distinction,

There is a line of distinction between man and beast which is comparable to the line of distinction which distinguishes living from non-living processes. Where the physical distinction *lies, as that distinction might be expressed in terms of physical experiment, we do not yet know. We must suspect, on grounds of sufficient reason, that the biologically defined human individual is, in some way, tuned into a principle which accounts for the living person's performance of a human noetic function.*

but, for the moment, it is decent respect for the integrity of the riddle itself which rules.

IV. The Human Principle of Physical Economy

The most important of the facts in this matter, is, that, whereas the individual animal has no development like that of science-driven human cultures, for example, the characteristic distinction of the human species known to us, is, that, we know that this quality of cultural distinction has a strong element of individual *immortality of effect* associated with it. That is to say, for example, that the action of generating an idea with the character of an efficient principle, may be prompted by an incompleted action of discovery performed by a person who has become deceased in the meantime. In the known history of European science and art, over a span longer than that since the death of Pythagoras, this sort of efficient, causal quality of connection is characteristic of the distinction of civilized man from beast.

Great discoverers of fundamental scientific principle, and kindred revolutions in modes of Classical artistic composition such as, (in music,) a J.S. Bach, a Joseph Haydn, a W.A. Mozart, a Beethoven, or a Leonardo da Vinci, Raphael Sanzio, or Rembrandt, or Shakespeare and Friedrich Schiller, create higher qualities of states of efficient forms of existence in those media, states which reproduce offspring among others, all in a pattern which corresponds to a concept of creation of higher orders of existence in the universe than had existed before. *When we reflect on this, we are shocked to re-read* ***Genesis*** 1 *from this point of reference*.

Otherwise, the progress of science is a succession of acts of discovery, a succession which is expressed across successive generations, and sometimes in great leaps across an intervening span of some numbers of generations. It is as if the mortal human individual's mortality as such, is a medium through which a multi-generational development of a human culture is sustained, through the transmission of physically efficient forms of ideas, that across successive generations: an expression of what is sometimes identified by theologians *as a simultaneity of eternity*. The fact of this unique irony of the role of individual human creativity, as expressed in the case of a mortal individual personality, within the potential continuity of a multi-generational social process, is a distinction of human social life which is not met in the animal kingdom.

Ludwig van Beethoven. Revolutionary developments in physical science and Classical artistic culture, LaRouche writes, "show that the transmission of discovered ideas corresponding to efficient forms of ideas of universal physical principle, is efficiently physical in its qualitative effects. On this account, the passion of the creative human intellect, is often more powerful, by far, than the human arm."

Here, in fact, lies the challenge represented by the notion of the ontological uniqueness of the individual human soul, as distinct from the specificity exhibited by any lower category of life.

What can, and must be said on this account, is that we know that this seemingly miraculous difference between mankind and lower forms of life, is a physically efficient one. The role of the revolutionary developments in physical science, and similar qualities of effect in matters of Classical artistic culture, show that the transmission of discovered ideas corresponding to efficient forms of ideas of universal physical principle, is efficiently physical in its qualitative effects. On this account, the passion of the creative human intellect, is often more powerful, by far, than the human arm.

We are back at the riddle of Helen Keller. We have also touched the notion of individual human immortality in an essential way.

The Simultaneity of Eternity

The most crucial of the qualities of the individual human mind, is what is demonstrated to be a characteristic potential for foreseeing the future appearance of previously unknown states of mind with a certain degree of physical certainty, not only among individual persons, but entire cultures, even humanity as a whole. This talent has turned out to have been, socially, the most significant of my roles in life, but it is a quality whose existence was already understood by many among my predecessors, notably, and not accidentally, including the best theologians.

The discovery of an experimentally validated universal physical principle, such as that by Kepler, Fermat, Leibniz, Riemann, Planck, or Einstein, is but one very important type of example of this quality specifically inherent in the potential of the individual human mind.

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The riddle of Helen Keller, who could neither see nor hear, touches the notion of individual human mortality in an essential way. Here, she contemplates the vibrations of music that she is unable to hear.

Such are the only true prophets, as my own case brings the issue of prophecy down to Earth, in its practical political and related expressions.

Notably, this notion of a power of prophecy, is also precisely what is demonstrated in the case of every valid, true discovery of a universal physical principle.

The underlying notion which I am pointing out here, is located only in the concept of a universal anti-entropy, a rejection of the implicitly bestial misconception, of such clowns of empiricist and positivist effluvia of modern physical science as Descartes, de Moivre, D'Alembert, the ageing Euler,[10] Savigny, Kant, Laplace, Cauchy, Clausius, Grassmann, Helmholtz, and the decadent, post-modernist followers of Ernst Mach and Bertrand Russell. The comprehension of what is actually a universal physical principle, is what defines the able scientist or competent modern secular prophet; it is the standard which separates the true prophets from the clowns.

There are two most notable among the many ways in which bad modern science kills the immortality of the human soul. One of these nasty concoctions, is the pagan Apollo called Aristotle, or Aristotle's follower Euclid; the other, the pagan Dionysus, is typified by Paolo Sarpi's adopted pro-Satanic "saint" of all modern Anglo-Dutch Liberalism, the implicit "chaos theory" of Paolo Sarpi's William of Ockham.

As the recognition of what had been hitherto unknown celestial novae, should refresh our knowledge of the universe, the essential feature of the universe we inhabit, or simply human existence itself, is the previously unknown. These are occasions which happen, or seem to come upon us without our causing them, and, more important, those changes in our universe which are novel products of the action of the human will. It is those qualitative changes in the systemic features of our environment which are caused by the human will, which are of the greatest importance in shaping those actions which define mankind's making of its own history.

The most significant of these changes is insight into qualities of developments of those qualities which have not yet been experienced, the true and only "futures market" of man's practice of science. All valid fundamental discoveries of physical principle typify this category of forecasting.

There are two aspects of such forecasting which are of such qualities. The first, is the power to forecast the

10. Euler's going over, as in his Berlin period, into the camp of the Eighteenth-Century empiricists, is a fact; but, exactly how and why he departed the camp of Leibniz and Jean Bernouilli has not been made clear to me. Sometimes, in Euler's work, his old, relatively admirable cleverness appears again, as in his witty treatment of the knight's move in chess, but, at the same time, the worst also comes out. But, after all, chess itself, even as *Kriegspiel*, was designed to have a built-in lack of a future.

effect of a recurrence of a form of action associated with some universal physical or comparable principle. The second, obviously, is the form of action which has not yet actually occurred, but which will probably occur, either inevitably, or if we fail to intervene to prevent it.

All of my own long-range economic forecasts projected since the first "test run" of relatively short-term 1956-1957 forecasting for the U.S. economy, typify this concept of forecasting. From the standpoint of the established practice of modern European scientific method, and also its ancient precedents, we divide the application of competent methods of forecasting between probably recurring conditions, and those of a type of which have never occurred, to the best of our knowledge, earlier. In the case of human behavior, the idea of forecasting is, inevitably, that associated with the discovery and validation of new qualities of forecasting, such as those associated with establishing knowledge of previously unknown states of nature. It is the latter type of inquiry which has been most significant for me in my work.

My forecasting of this type has been focused most intently on two closely related, but respectively distinct cases: a.) New (e.g.,) economic conditions of mankind, which can be forecast as a matter of study of precedents; b.) new conditions of mankind which have not existed earlier, but whose challenge must be addressed. As the case of the discovery of transuranic elements illustrates the point quite dramatically, an intelligent society never presumes that the diagnosis of dangerous developments could be responsibly limited to the range of precedents from acknowledged past experience, or possible types of conditions on which we might have speculated earlier. The sudden apparition of the entirely unexpected is always lurking, but in a relevant sort of panic-free, reasonable form, at the edges of the awareness of a truly creative intellect.

Take as an example of this, the qualified speculation on the implications of existing evidence pointing in the direction of matter-antimatter principles of action which would be of several orders of magnitude more powerful than expected for thermonuclear-fusion reactions.

The Spiritual Domain of Physical Science

There is a still further realm of concern for those of us who care to think further ahead.

As I have already indicated, in this present chapter, thus far, the very fact of our experience with forecasting in that realm of scientific action which opened for Fermat, Leibniz, and Riemann, most notably, by Johannes Kepler's ***The Harmonies***, impels us to seek to free ourselves from the grip of the traditions of sense-certainty. As I have just emphasized in this present chapter, thus far, the fact, which can not be competently disputed, is that for the case of any true universal physical principle, when it is defined as Riemannian, as by the work of Planck, Einstein, and Vernadsky, that any true physical principle of our universe bounds the present by the efficient physical simultaneity of the future.

Therefore, when we employ terms such as "physical universe," as experienced to present date, as I have referenced that here, we are confronted by efficient proof of the efficient causal effect of the future on the present. This evidence, which is conclusive in that way, obliges us to distance our minds from a-priori faith in a simply time-directed causality in the universe. The ability of the mind not merely to foresee future developments, but to use knowledge from that future to shape the present, is perhaps the most important of the notions of scientific thought to be brought more fully into play in the shaping of Twenty-First-Century scientific and political-economic thought.

This advice from me, here, also bears on our society's spiritual conception of the nature of the human individual, and of that individual's relationship to a consciously reigning divinity. From the vantage-point I have thus just identified, the Creator is not a victim of space-time, but a truly universal being, as important currents in Christian theology have advanced the concept of a *simultaneity of eternity*. In this view, it is the self-development of the universe which is the essential consideration, and of a willful, eternal Creator, as regarded by Philo of Alexandria, of and within that universe. We are, thus, as if standing still in the All of that ongoing process of creation, and are to allow a keen sense of what we call today "the future," to bring us to a sense of the meaning of our mortal selves, in our commitment to service to that developmental process known, as to Raphael Sanzio's mural, as the simultaneity of eternity.

It should occur to us, meanwhile, that physical science, and the science of physical economy, too, ought to submit themselves to the moral imperative which the notion of such a simultaneity of eternity implies. Let us thus lift mankind, finally, somewhat, at least, upward from the barbarism which rules still in our present times.

It is time for such a way of thinking about mankind.