

APE OR MAN?

The Great Secret Of Economics

by Lyndon H. LaRouche, Jr.

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*Some years back, during one among my relatively frequent visits to Florence, I chanced to be seated on the hillside looking down, across the River Arno, into the streets of Florence. I was startled by the realization that I was seated, at least approximately, where Boccaccio had been seated in his account of the writing of his famous **Decameron**. It was clear to me, thus, that the stories told, were reflections on the moral decadence rampant in that Lombard League which had collapsed into a dark-age condition as a result of that ruling partnership of Venetian financier oligarchy with Norman chivalry which had collapsed the population of Europe by about one-third, and the number of European parishes by approximately one-half.*

*Boccaccio's **Decameron**, like Chaucer's **Canterbury Tales**, like the **Pantagruel and Gargantua** of François Rabelais, and the **Don Quixote** of Miguel Cervantes, and Dante Alighieri's **Commedia** before them, typifies the way in which great tragedians have sometimes treated the subject of the most horrible catastrophes which man's foolish policies have inflicted upon decadent cultures lacking essential features of the moral fitness to survive. When mankind is confronted with the outcome of a great folly of his society in such degrees, as in the U.S.A. and western and central Europe today, it is the poet alone who can use the power of irony to enable the mind to cope with the task of recognizing the great folly of his age, such as the great global tragedy which threatens the continued existence of civilization for the several coming generations now immediately before us all.*

All those who would understand the onrushing menace which confronts the world as a whole, immediately, today, must muster from within themselves the same spirit which we might recall from the work of Aeschylus, Socrates, and Plato, who, similarly, faced the onrushing actuality of the self-destruction of the leading culture of their times. Without mustering the same sense of Classical irony, which is more easily recognized in Dante, Boccaccio, Rabelais, and Shakespeare, it were



When mankind is confronted with folly of the sort we see around us today, LaRouche writes, “it is the poet alone who can use the power of irony to enable the mind to cope with the task of recognizing the great folly of his age, such as the great global tragedy which threatens the continued existence of civilization for the several coming generations now immediately before us all.” Here, François Rabelais’ hero Pantagruel “tests his wit against Parisian scholars,” in an engraving by Gustave Doré.

impossible, emotionally, to see clearly the folly of our times, today.

In such times as these recent months, a show of respect for current popular and official opinion, is the mark of the dangerous fool, especially among fools occupying high places. Without science, laughter, and ridicule of pompous fools in high places—such as the frankly insane Don Quixote (aka Philip II) and the oafish Sancho Panza—there were little hope of rescuing civilization in such times as ours, today.

The other side of such humor, is the passion expressed as creative insight. It is ridicule of the foolish reigning habits of thought of one’s time, which is the only hope for rescue of civilization from the onset of such catastrophes. The passion for that remedy is irony presented as ridicule of fools and their

opinions; the compassion of such irony is creative insight into the principles which must be applied to produce a remedy for threatened doom of a culture, as I do in this report. The spark from which the most necessary acts of valid creative thinking are energized, is perception of the fact that that which is generally accepted in popular or learned beliefs of ones time, is, usually, intrinsically absurd.

So, since no later than March of this year, the present world monetary-financial system has been gripped by an on-rushing plunge into a form of crisis which is qualitatively worse than any crisis such as that of the 1928-1933 interval, a crisis much similar, on principle, to what Boccaccio saw, looking across the Arno, into the plague on the streets of Florence. Unless certain types of radical, and sudden

changes are introduced soon, the entire present monetary system will disintegrate in a way roughly comparable to the developments of Europe's Fourteenth-Century "New Dark Age."

So, the threat to civilization posed by the presently onrushing, global breakdown-crisis of the U.S. and world economies, requires fresh attention to the deeper implications, and urgency of the principles of a physical science of economy. This is the science of economy first established by Gottfried Leibniz, which was also a principled source of the founding of the relevant, constitutional principles of the American System of political-economy of U.S. Treasury Secretary Alexander Hamilton et al.

Notably, this American System, based on Leibniz's approach to physical economy, is the only significant alternative, today, to the presently disintegrating, intrinsically imperialistic, Anglo-Dutch Liberal system, the system traced from that neo-Venetian, Eighteenth-Century British East India Company's Haileybury School which was also the premise for the economic doctrines of Karl Marx.

The present crisis demands discontinuing that Sophistry of Anglo-Dutch Liberalism, the philosophical liberalism which is expressed in physical science and economics, still today, by both the British imperial Haileybury School and its notable Marxist offspring. The science of physical economy, as brought up to current date by my own original contributions to its refinement, is the relevant replacement, as in the tradition of President Franklin Roosevelt, for the doomed doctrines which have guided the world into the presently onrushing economic catastrophe.

The leading obstacle to accomplishing the urgent tasks of economic reform needed now, is a lack of comprehension of the most essential notions of science itself, lacking even among what might pass for the well-educated strata of society, even some leading scientists. The cause of this current decadence is less a lack of professional education as such, than the substitution of sophistry for science in the teaching of mathematics, as in the widespread substitution, especially since the education of the "1968ers," of contemporary, radically reductionist statistical methods for the Classical pre-Sophist, pre-Euclidean methods of experimental physical science.

Preface: Science vs. Sophistry

All around me, my generation is dying out rapidly, and with its passing, go most among the best minds of physical science from the earlier experience of my adult lifetime. So, we have lost most representatives of that generation of thinkers whose achievements are typified by my associates of the Fusion Energy Foundation (FEF) of the 1970s and 1980s.

Competent approaches to science, such as the dynamics of the ancient Pythagoreans and Plato, best express those char-

acteristics of human behavior which distinguish the human species absolutely from the characteristic activity of all lower forms of life. Competent economics, like competent physical science generally, depends upon that unique distinction of our species. Both economics and physical science generally, must be viewed and practiced from that standpoint; in competent practice of either, the two, properly practiced, are interdependent, and therefore inseparable.

On this account, the most typical expression of cultural decadence in what is currently globally extended modern European culture, is the notion of a categorical separation of competence in physical science from art and politics as if these were two different cultures. Without irony expressed in a Classical form, there can be no scientific creativity; without the impulse also expressed as scientific creativity, poetry were reduced to the quality of doggerel, and drama to a sophist's farce.

Nothing demonstrates this correspondence of Classical irony in art and science more efficiently than the study of that applied science of physical economy, as developed by Gottfried Leibniz, which underlies U.S. Treasury Secretary Alexander Hamilton's anti-Liberal American System of political-economy. The issue so posed is not academic; it is the most crucial issue of politics, world-wide, in today's presently onrushing global, economic breakdown-crisis.

To illustrate the nature of this problem in science, consider the following case.

Among the ranks of FEF during those years, the typical representative of the generation of that quality of achievers among the practitioners of science was Professor Robert Moon, Chicago University's celebrated student of that Professor William Draper Harkins, a Harkins who, notably, ranked with, but above Rutherford as a leading physical chemist of the world of his time.

In 1987, the FEF was shut down through a politically motivated operation which a Federal Court later ruled to have been a fraudulent bankrupting of that scientific association by the U.S. Department of Justice then associated with Massachusetts' William Weld. Professor Moon died in late 1989. So, coincidentally, near the close of the 1980s, the later generation, the so-called "Baby Boomer" generation, born during, approximately 1945-1957, began to occupy the positions which had been held by the generation which had dominated the scientific leadership of FEF.

The consequent decade's saddening developments in Europe and the Americas, are typified by the way in which the closing four, post-President Kennedy decades of the Twentieth Century's modern science had been brought, thus, to our hope that the present, virtual collapse of our economy is only temporary.

Those cited developments of 1987-1989, typified the onset of what became today's crisis of both physical science and culture generally. However, as I shall show in the following pages, these developments also typify the most crucial issue



Lyndon LaRouche (center) with scientists at the founding meeting of Fusion Energy Foundation in 1974. The FEF was forcibly shut down in 1987 through a fraudulent bankruptcy operation run by the U.S. Department of Justice. The organization typified the competence of a generation of scientists, mostly now deceased, who have been replaced in leadership positions by Baby Boomers.

FEF

of economics, world-wide, today. That matter of economics, as it must be treated from the standpoint of physical science, not the prevalent, but intrinsically incompetent notions of monetary theory, is the preeminently relevant focus of this present report.

The currently onrushing, dismal change for the worse, came, near the beginning of the 1990s, as typified by both the demise of FEF and the entry of Federal Reserve Chairman Alan Greenspan. The coincidence of those developments, has crucial importance, even global strategic importance, for addressing the leading practical problems of physical science, as also Classical artistry today.

Throughout the known history of European civilization since the times of Thales, Solon, and the Pythagoreans, there has been a recurring emergence of periods in the life of sundry European cultures, during which societies have been self-destructed through the induced influence of what is defined by Classical historians and their like, as *Sophistry*. Over the millennia, this pattern has been repeatedly echoed as the role-model set by the Delphic Apollo cult's infusion of Sophistry into the youth of leading families of Athens, led into Pericles' role in leading Athens into the fascist-like wave of self-destruction known as the Peloponnesian War.

It is the reign of Sophistry in the U.S.A., increasingly, since the death of President Franklin Roosevelt, which should be the principal concern of all competent leading figures in the U.S.A. and Europe today.

That use of what must be recognized again today, as, strictly, systemic Sophistry, has been a recurring epidemic/pandemic affliction in the history of globally extended European civilization ever since the dismal role of Pericles of Athens. The influence of that modern European system of

Liberal philosophy maintained by such followers of Venice's Paolo Sarpi as Galileo Galilei, Sir Francis Bacon, Thomas Hobbes, René Descartes, and as the empiricism of the Anglo-Dutch imperial monetary-financier system generally, is typical of this recurring pattern of cultural epidemics and pandemics spread by the influence of Sophistry today. The typical problems of doctrines of art and physical science today, are only the most recent manifestation of this form of moral and intellectual decadence.

The problems of Sophistry, as typified by the existentialist, post-1945, so-called Congress for Cultural Freedom and American Family Foundation,¹ are the most crucial factors to be overcome for the sake of now continuing the development of a new generation of young-adult scientists and Classical artists. This is the ongoing mission which must succeed if civilization is to conquer the evils of the present decade of world economic crisis. This report's focus is on the innermost kernel, the underlying principle of that economic challenge.

This is not only a matter of science as such. I repeat myself for emphasis: the world, the U.S.A. and Europe most notably,

1. Better named by the functionally descriptive title of "The American Families' Foundation": as the political arm of the set of Anglo-American, trans-Atlantic oligarchy of wealthy U.S. families in the tradition of the London-directed, treasonous American Tories of the Yankee opium-traffickers and Southern slave-holders. Twentieth-Century ideologues in service of that tradition have been typified by Professor Sidney Hook, John Train, the followers of the fascist Chicago School of John Dewey, Robert M. Hutchins, Professor Leo Strauss, et al., and the existentialists Theodor Adorno, Hannah Arendt, Nazi ideologue Martin Heidegger, and Jean-Paul Sartre. Trans-Atlantic expressions of the same circles include the followers of Sir Francis Bacon, Thomas Hobbes, John Locke, Jeremy Bentham, John Stuart Mill, Thomas Huxley, H.G. Wells, the Satanist Aleister Crowley, Bertrand Russell, and Crowley followers Julian and Aldous Huxley.



EIRNS/Philip Ulanowsky

The late Dr. Robert Moon, a founder of the Fusion Energy Foundation and celebrated and ebullient creative thinker, teaches a class on electromagnetism at a Schiller Institute children's camp in Northern Virginia during the 1980s.

is gripped by an onrushing crisis, caused by the campaign of Sophistry launched by such post-1945 institutions as the Congress for Cultural Freedom and its kindred. Without introducing the corrective antidote to that current global rash of Sophistry today, civilization as a whole, like our present U.S.A., were already wobbling at the brink of a plunge into a prolonged, global new dark age.

On this account, as Aeschylus had warned us in his time, as in his Prometheus trilogy, all Sophistry, as traced since the time of the appearance of Homer's *Iliad* and *Odyssey*, especially as described by Plato, is the root of all notable cases of degeneration of once-able European cultures. The degeneration is expressed chiefly in the refusal to accept the notion of all mortal men and women as specifically endowed with the quality of power to discover, to know directly, and to employ universal physical principles, as this principle of discovery is illustrated by Johannes Kepler's discovery of the need for a truly infinitesimal calculus, through his proof of a universal principle of gravitation.

Meanwhile, it has been the Olympian Zeus and his Apollo which have continued to typify the most significant force of evil within globally extended European civilization, through to the present day. The criminality of that Delphic Apollo and his admirers, is the denial of the essential, unique difference, a difference expressed as the Pythagorean-Platonic notion of *dynamis*, between man and beast: the same distinction of man from beast recognized by *Genesis* 1, but not recognized by the ancient Sophists or modern empiricists generally. It is the suppression of the fostering and expression of those creative powers of the individual in that fashion, which is the great evil

characteristic of all financial-oligarchical and related powers, such as the financier interests which promote the form of imperialism called "globalization" today.

All decent law and morality, in what is properly termed the global heritage of European civilization, is premised upon a rigorous definition, and proof of that principled distinction, *dynamis*, which the Pythagoreans and Plato made between man and beast. The proper definition of science and its mission today, is expressed as that notion of *dynamis*, or, as Leibniz defined it, the role of *dynamics*, in opposition to the reductionist abominations typified by Cartesian and Newtonian *mechanics*.

Our subject here, is the need to defeat the malicious effect of attempting to maintain the imposition of that denial of the absolute difference between man and beast, a denial widely imposed upon the current economic practice of physical science itself.

Kepler, Riemann, and Einstein

The content of the book containing the Albert Einstein-Max Born correspondence, which I had acquired at the time of its first publication, typifies the issue which is cruelly underscored by the deaths of both the Fusion Energy Foundation (FEF) and the Professor Moon who exemplified its best representatives.²

Einstein who, toward the close of his career, traced his

² *The Born-Einstein Letters 1916-1955: Friendship, Politics, and Physics in Uncertain Times* (New York: St. Martins Press, 2005). See also. See Bruce Director, "Einstein-Born Dispute," *EIR*, Dec. 23, 2005.

foundations in modern science, in retrospect, to the work of Johannes Kepler and Bernhard Riemann,³ reflected, thus, the principles of experimental science associated with the Classical Greek tradition of *Sphaerics*, the scientific method associated with Thales, Heraclitus, the Pythagoreans, Socrates, and Plato, as also Kepler and Riemann. This ancient heritage was refreshed during and following the Fifteenth-Century Renaissance, as this development is associated with the revival of that method as modern science, with the work of Cardinal Nicholas of Cusa. It is Cusa, and those of his self-proclaimed, actual followers in this field who must be chiefly credited with the founding, development, and, thus, the principal achievements of modern European science.⁴ All competent treatment of the principled issues of scientific method, and also Classical artistic composition, are traced, thus, from Thales and the Pythagoreans, through Leibniz, Gauss, and Riemann, from this Classical Greek root.

The widespread, repeated corruption of ancient and modern science was rooted, typically, in the revision of actual ancient Greek science by the axiomatically reductionist methods of the *Sophist* Euclid. This influence is reflected in modern European culture, as represented by the followers of the founder of modern European empiricism, Venice's Paolo Sarpi.

Max Born, who had once been knowledgeable in the method of scientific work associated with Albert Einstein's accomplishments, had broken with what, at the beginning of the Twentieth Century, had still been the leading standard of modern scientific work, the standard typified by Max Planck. Long before the time of the referenced correspondence, Born had gone over to the positivist camp of the radical Ernst Mach and Mach's Planck-hating followers, and to the most evil and persistent science-hoaxster of the Twentieth Century, Bertrand Russell.

The passing of the generation born during the 1920s has thus slaughtered, before my eyes, what had been typical of the best among the legions of science of my time. The successor generation has nearly succeeded, since, in murdering the spirit of science itself. The two developments, the ruin of contemporary scientific teaching, and the presently onrushing, global economic crisis, are not merely comparable; they are inseparable. It was the introduction of a *Sophistry* borrowed from the time of the Peloponnesian War, as the standard of design

3. Compare Einstein's expressed view with the view of Riemann expressed by V.I. Vernadsky. See my "Vernadsky and Dirichlet's Principle," *EIR*, June 3, 2005. This is the converging tendency of the best among the generation which Einstein and Vernadsky shared.

4. The first of the notable attacks on Cusa's scientific method by modern Sophists appeared in Johann Wenck's *De Ignota Litteratura* (circa 1443); however, the systematic opposition to Cusa's work in science was from the marriage counsellor of England's Henry VIII, Venice's leading spy-master of that time, Francesco Zorzi. Zorzi was echoed by Venice's Paolo Sarpi, the founder of empiricism, whose legacy is the principal root of the corruption in the modern science classroom since Sarpi's personal lackey Galileo Galilei.

for that post-war Congress for Cultural Freedom which is typified by the followers of Britain's evil trio of Aleister Crowley, H.G. Wells, and Bertrand Russell, which has laid the basis for the intellectual ruin of our present times, in the enculturalization of the post-war generation of the Americas and western and central Europe.

This contemporary incarnation of Sophistry, typified by the common evil of Margaret Mead, Theodor Adorno, Hannah Arendt, Nazi Martin Heidegger, Sidney Hook, John Train's *Paris Review*, and the *Sophist's* cult known as the American Family Foundation, produced the anti-science, anti-"blue-collar" fanaticism of that upper twenty percentile of the Baby Boomer generation known as "the 68ers."⁵ It is that which has made possible the self-inflicted ruin of our republic under the reign of the generation holding top-most positions in society today.

If civilization were to avoid a presently threatened plunge into a prolonged, planetary "New Dark Age," we must now rebuild. To that end, some of us are now rebuilding what must become the future of science, and of economy. This effort is currently premised on the model experience of the LaRouche Youth Movement (LYM), inside the Americas, western Europe, and, hopefully, beyond.

This process of rebuilding is necessary if the world is to escape successfully from what is presently onrushing as a general breakdown-crisis of the world's present monetary-financial systems. Success would be impossible, unless we were supported in this effort to rescue reason from the Purgatory in which so many among the world's influential Baby Boomers are currently represented.

Syphilis and gonorrhea have been models of popular diseases, or, better said, diseases associated with popular practices. Disease, such as the presently onrushing collapse of the present world economy, is often the consequence of the filth within which we, or the current rulers of society, consent, or desire to rule over and ruin us.

1. Man Versus Ape and Engels

The prevalent fallacies polluting nearly all contemporary, fashionable opinions and teachings on the subjects of science, art, politics, religion, and philosophy in all its aspects, are derived from a single body of presently commonplace modern Sophistry. The resulting degree of ignorance of both actual history and science now prevalent among even university-educated professionals, is shocking, even by the standards of the generation born before World War II.

In contrast, there has been a generally shrinking knowledge of that actual history of globally extended European

5. The French term, *bourgeois bohèmes* (Bo-bo's), is more appropriate in its connotations than "Baby Boomer" for pointing to the relevant specific stratum of the 68er generation.

civilization since the time of Solon of Athens' Greece; this is so among even university graduates generally. This has been the general trend in our culture since the assassination of President William McKinley in favor of such Presidents as Theodore Roosevelt and also Woodrow Wilson, Calvin Coolidge, and Herbert Hoover. This increasing ignorance of the actual history of European civilization, was accelerated later by the influences of such agencies as the post-Franklin Roosevelt Congress for Cultural Freedom and, in Europe, through the scheme for eradication of Classical education by the 1963 report on education by the OECD's hoaxster and neo-Malthusian ideologue Dr. Alexander King; as by Peyrefitte in France, and in the repeal of the Humboldt reforms by the Brandt government in Germany.

In fact, the characteristic of successful forms of globally extended European culture since the ancient Ionians such as Thales of Miletus, and since the Pythagoreans and Plato, had been the notion that all ideas concerning universal principles must be derived, by efficient proof of principle, from the Egyptian method of viewing the nighttime sky, the method called *Sphaerics*. The notion of an experimentally demonstrated universal principle without preceding assumptions of "self-evident" definitions, axioms, or postulates, has been, for European civilization since, the underlying characteristic of all competent scientific progress, and also of Classical artistic composition in plastic and non-plastic arts, since that time to the present day.

The related problems are best reconsidered from the standpoint of a science of physical economy, as Leibniz defined that as a branch of physical science. It is the effect of what we might call physical scientific progress on the ability of society to survive and progress physically, which is the most appropriate way of understanding science as a whole, from the standpoint of the effects which knowledge or lack of knowledge of physical scientific principles has upon the ability of society to prosper, even, in the extreme, to survive. Whoever lacks this comprehension of science and society, will tend to bungle his way in both fields.

In other words, the essential subject of physical science, is the nature of man, as this distinction of man from ape is expressed, contrary to both Thomas Huxley and Frederick Engels, by the effects of scientific knowledge, or its lack, upon the ability of society to prosper, even to continue to exist.

Today, on that account, on account of that relationship between science and society understood by Leibniz, all competent modern approaches to physical science, including the science of physical economy, are summed up, implicitly, by the work of Bernhard Riemann in summarizing the nature of an experimental physical science premised on the notion of an *anti-Euclidean* physical geometry. The historical process within globally extended European civilization, from ancient Classical Greece to today, can be understood competently only from that point of view. All competent understanding of science, art, and history since those ancient origins, is based,

with at least significant attempts at approximation, on that advantageous view of European development and internal conflicts since ancient Greece presented this, in its role as successor to ancient Egypt, as best stated in Plato's *Ti-maeus* dialogue.

On this account, in the field of political-economy, there are many teachings on particular details of economic practice which are pragmatically tolerable, and even important, on the condition that belief in those matters is treated as rule-of-thumb knowledge, and is not mistaken for actual scientific practice. However, respecting an actually scientific notion of issues of economy, as the notion of science can not be competently separated from the notion of demonstrably universal physical principles, virtually all generally accepted doctrines, as received from around today's world, are, from the standpoint of competent science, axiomatically absurd in principle, and are, presently, largely, rooted in Sophistry, as Sophistry was diagnosed, systemically, by Plato.

Of course, that is not to suggest that contemporary physical science has been categorically absurd. As we saw with the practice viewed by the Fusion Energy Foundation during the 1970s and 1980s, physical science was still realizing potentially great gains for mankind. The chief problem internal to the teaching and practice of science today, was, and remains, that the Babylonian-like dogmas of the peer-review committees controlling the blackboards of mathematical "proof," remain systemically corrupt, and, thus, represent the virtual enemy of the intention of what was otherwise competently defined experimental science.

Nothing better illustrates the folly of that corruption of science by the modern forms of Sophistry, than the study of currently widespread dogmas and practices of what is called "economics," especially the credulity expressed by the popularized misconception of statistical methods associated with the causes for the August-October 1998 U.S. financial-monetary crisis. To prove that point, it is sufficient to view the matter from the vantage-point of economics viewed, itself, as a subject of experimental physical science.

Euclid's Relevant Hoax

To introduce that crucial point of this report as dramatically as the need for clarity requires, the most important flaw within Marxist doctrine, was the axiomatically pathological view of human nature shared between Britain's Thomas Huxley and his countryman Frederick Engels.

The typically Anglo-Dutch Liberal mode of academic defense of Huxley's and Engels' coincident, reductionist, Lockean, Kantian, or kindred views in this matter, is the acceptance of Huxley's thesis as typical of the British mid-Nineteenth-Century form of the empiricist dogma launched by Venice's Paolo Sarpi and Sarpi's personal lackey and hoaxster Galileo Galilei. All that is despicable, or otherwise objectionable in the doctrines of Huxley and Engels, was already intrinsic to the methods of Venice's Francesco Zorzi and the empiricism

of such followers of Sarpi as Sir Francis Bacon, Galileo's student Thomas Hobbes, John Locke, René Descartes, Isaac Newton, and D'Alembert, de Moivre, Leonhard Euler, J.L. Lagrange, Laplace, and Augustin Cauchy. That morally and intellectually defective, reductionist view, as shared between Huxley and Engels, is the systemic basis of argument today for the popular nonsense-views on the subjects of so-called "information theory." This is the pathetic basis for the "materialist" notions, the nonsense-doctrines that life itself and the higher powers of human mental life, can be adduced implicitly from a perfectly reductionist, symbolic interpretation of inorganic chemistry, or, even worse, from mere counting arithmetic.

On this account, Russia's V.I. Vernadsky's presentation of the concepts of Biosphere and Noösphere, is one of the most crucial contributions to scientific method during the sweep of the Twentieth Century.

These considerations, just stated, are the foundation for those changes in taught and practiced economic policy which must now supplant what have been recently generally accepted, wrongfully, as principles of economics practice.

I explain, as follows. We proceed, first, by attention to the need to uproot the legacy of Euclid, if a competent insight into real economy is to be secured.

Euclid's *The Elements* is broadly traced to its origin as located about a half-century after the death of Plato. Virtually nothing of positive relevance to the competent forms of science being emphasized in this report, is encountered in the thirteen sections of that work which had not been both copied, and viciously reified by Euclid from discoveries made during or prior to the work of Plato. Euclid's treatment of those earlier discoveries is exemplary Sophistry. Euclid proceeds, either explicitly, or implicitly, from what are taught to the credulous in schools as "definitions, axioms, and postulates:" as Riemann emphasized, already, in his 1854 habilitation dissertation, Euclidean method is based upon purely arbitrary ontological presumptions adopted, as by the ancient Sophist Zeno, without considering any obligation to supply crucial experimental proof of the existence of such merely fancied intellectual objects. Actually, as Bernhard Riemann has shown most clearly, each and all those assumptions of Euclid and his devotees are experimentally false from the standpoint of a competent body of practice of physical science.

In contrast to Euclid, the competent strains of ancient Greek science were premised on a method absolutely contrary to Euclid's elementary and arbitrary assumptions of symbolic belief. Such is the characteristic issue posed by all thorough attempted applications of methods of Sophistry to physical science and related subject-matter, both then and now.

The competent method, on which the theorems plagiarized by Euclid had been premised, was called *Sphaerics*. Implicitly, looking back from today, *Sphaerics*, which the Classical Greeks traced to Egyptian origins, was a purely *physical-geometric* quality of relevant predecessor for what

modern mathematical physics defines as the complex (*physical*) domain of Leibniz, Gauss, Riemann, et al.

The systematic, modern understanding of the achievements of the pre-Aristotelean Greeks, including Plato, is traced chiefly to: the discoveries of Johannes Kepler (universal gravitation); Pierre de Fermat (pathway of quickest time); Gottfried Leibniz (the Keplerian infinitesimal calculus and principle of universal physical least action); plus numerous discoveries by Carl F. Gauss (e.g., contributions to the notion of elliptical functions); Lejeune Dirichlet (e.g., "Dirichlet's Principle"); Niels H. Abel (elliptical functions); Wilhelm Weber in electromagnetism; and, Bernhard Riemann's eradication of the last residue of Euclidean geometry from science. As Albert Einstein came to emphasize, it is the work of Kepler and Riemann which best represents modern science's knowledge of the ordering of the universe. Vernadsky's work defining the Biosphere and Noösphere, implicitly echoes the argument made independently by Einstein for the case of Kepler and Riemann.

Any competent treatment of the subject of economics must be premised on the method associated with the modern realization of those ancient Classical (Platonic) Greek foundations of physical science generally.

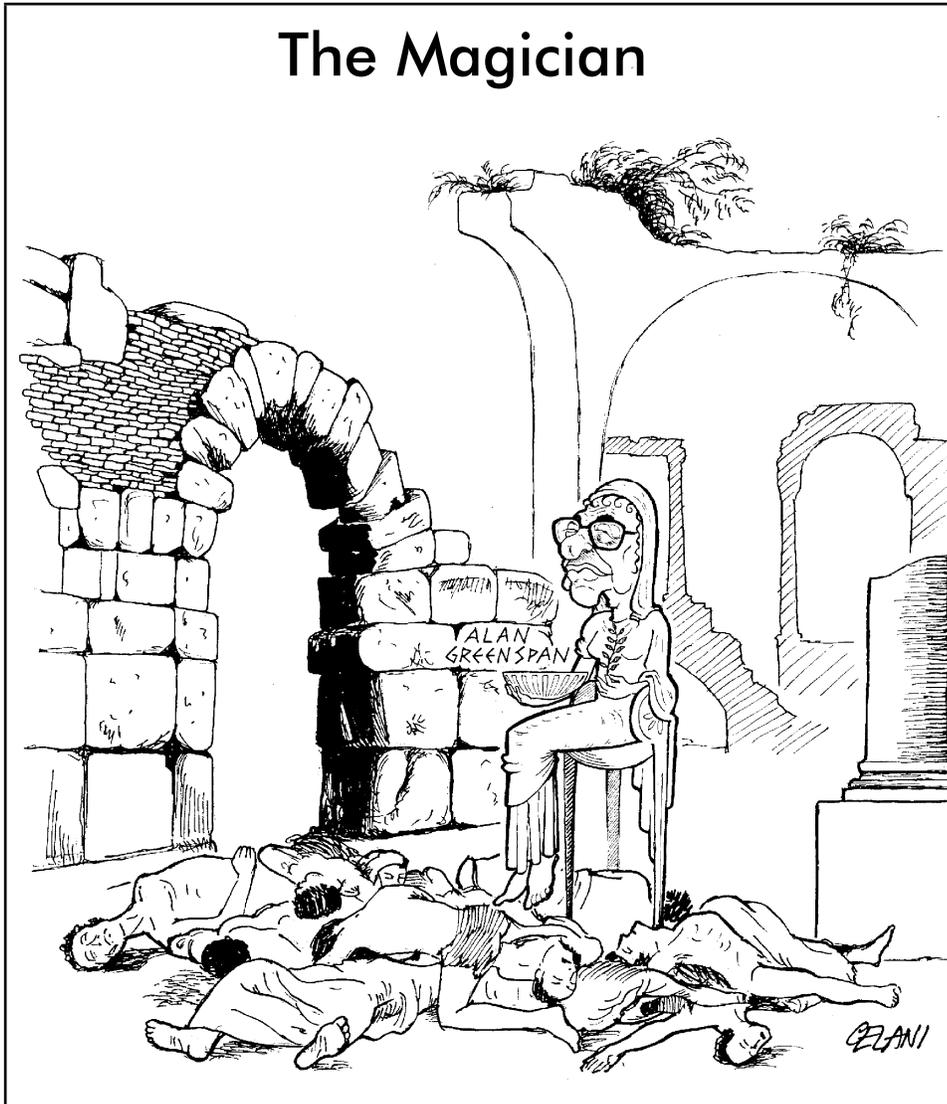
Anti-Euclidean Science

So, the origin of the method of the successful, valid currents in modern European physical science, is traceable to the method of *Sphaerics* as employed by the Pythagoreans. No crabbed arithmetic constructions are required; all depends upon the experimental discovery of the efficiently present existence of some universal physical principle, as Kepler's discovery of universal gravitation clearly illustrates the foundations of all competent forms of modern physical science. So, Kepler's specifications, as based on his empirical discoveries in astrophysics, provided the basis for a specifically infinitesimal calculus, as developed uniquely by Leibniz, and also the notion of physical-elliptical functions.⁶ So, the work of Riemann, on the subject of Abelian functions and hypergeometry, carried this approach to a certain degree of relative mathematical-physics perfection.

All competent contemporary forms of employment of a competent science of physical economy depend upon these considerations. A science of economy is premised upon, and subsumed by the discovery and realization of what are defined

6. The notion that Isaac Newton ever even understood the meaning of a calculus is pure hoax. The blundering follies in representation of the calculus by such self-styled Cartesian and Newtonian apologists for Newton, D'Alembert, de Moivre, Euler, Lagrange, Laplace, Cauchy, et al., illustrate that point already made by Carl F. Gauss in his 1799 doctoral dissertation and, conclusively, by Riemann, beginning with Riemann's 1854 habilitation dissertation. My own correct insight into the fallacious ontological characteristic of the issue of Euclid's sophistry, was, fortunately, my own, well-founded, categorical rejection of Euclidean assumptions in geometry and ordinary teaching of the calculus from early adolescence on.

The Magician



EIRNS/Claudio Celani

Ignorant people view Alan Greenspan as the Delphic Oracle who repeatedly “saved” the global financial system from certain ruin. In fact, like the Delphic Apollo cult before him, he plunged it deeper into crisis, as his successor at the Federal Reserve is now learning.

experimentally as universal physical principles. These principles are clustered in a form of process which Leibniz recognized as *dynamic* (following the Classical Greek *dynamis*), rather than mechanistic. Among the relevant Classical Greeks, these principles were already classed in the same principled way as the work of V.I. Vernadsky distinguishes the principle of non-living chemistry from both the Biosphere and Noösphere, respectively.

In competent economics, which is to say a practiced science of physical economy as such, it is the realization, in practice, of applied increments of qualities definable as universal physical principles, which supplies the margin of “anti-entropy” on which net gains in productivity are to be defined.

In other words, the output of human activity, per capita and per square kilometer of the planet’s surface, is increased, such that output exceeds input, creating what is truly a physical margin of profitability, as absolutely distinct, *ontologically*, from a monetary gain. Monetary gains do sometimes correspond to a physical (anti-entropic) gain; but, in the world economy of the 1971-2006 interval to date, the apparent gain, as expressed in monetary-financial terms, has actually been a net physical loss, a purely entropic effect on the world-system as a whole.

Thus, the attempt to measure economic growth in financial-accounting terms, has been essentially fraudulent when assessed globally during the recent three decades of the planet’s existence. This fact is shown clearly by the physical collapse of the economies of Europe and the Americas during those recent decades.

The science of physical economy itself has nothing to do with mere money as such, although the physical value of that which is priced in terms of money as such, is, for obvious reasons, ultimately reflected as subjected to the ontologically distinct actuality of a science of physical economy.

For example:

The present global monetary system was established, successively, by the U.S. Nixon Administration’s declaration of mid-August 1971, and the Azores monetary conference of 1972. This created a so-called “floating exchange-rate system,” replacing the fixed-exchange-rate system of the original Bretton Woods system. This action was coupled with a radical shift in U.S. policy, away from the previous decades’ emphasis on increased physical output per capita and per square kilometer, toward what became known as a “post-industrial” utopianism. The result of that change in international monetary policy was to turn the world economy into a gigantic “Ponzi scheme,” which devolved into the extremes of sheer lunacy under the 1987-2006 reign of Federal Reserve Chair-

man Alan Greenspan's implicitly hyperinflationary use of so-called "financial derivatives." The "Ponzi scheme" known as Enron, was no isolated case, but only an example of the kind of pollution which has pervaded the entire world system, increasingly, since the aftermath of October 1987.

A sane form of economy is premised on various means of price regulation, including taxation, regulation of trade, and so forth, which are designed to prevent the destruction of long-term productive capital investments in basic economic infrastructure, agriculture, industry, and the general welfare of the population as a whole. The eye of regulatory policy is focussed on medium- to long-term, dynamic equilibrium among all of the essential physical-economic components of a modern form of economy. The price becomes, thus, a reflection of the relative values of elements of a performing physical economy, rather than some infantile sort of "Robinson Crusoe" model.⁷

Moses on 'Man or Beast'?

The key is the ontologically absolute difference between the nature of the human being and of all of the beasts. This difference is expressed, absolutely, by the ability of the individual intellect of the human being to discover empirically validatable universal physical principles. That is the key to all of the human realities of what are classed, fair or foul, under the heading of economic processes. It is the discovery and realization of those discoveries of universal physical principle, which determine the actual relative value of products.

This distinction of the human species is most readily typified in modern European science, by the fact that no animal can discover and intentionally apply a genuine universal physical principle. It is necessary to repeat: *All competent study of the underlying, principled standards of estimate of performance of a modern economy depends primarily on the application of this notion of universal physical principle, rather than on ideas of a system of monetary exchange in purchase and sale of products as such.* It is the deviations of monetary valuations from the relative values determined by the dynamics of physical economy, which define the margins associated with both cyclical forms of economic depressions and general breakdown crises.

It must be emphasized, that the so-called "free trade" sys-

7. This is Leibniz's use of *dynamics* in exposing the fraud of attempts to introduce the mechanistic methods of Cartesianism into physical science, *dynamics* as derived from the *dynamis* of the Pythagoreans and Plato. Competent science proceeds, as Kepler did for astronomy, in discovering the ontological actuality of an efficient universal physical principle as such; whereas, mechanistic methods seek to reduce matters of experimental work to mathematical, e.g., linear-statistical methods. For Kepler, for example, the action of gravitation, as located within the infinitesimal change expressed experimentally, as in the Mars-Earth-Sun relationship, by the physical-elliptical function, is an ontologically existing object, a universal object: a *monad*. The mechanistic method seeks to degrade the existence of the ontological actuality to a mere mathematical description as at the blackboard, not crucial-experimental tests of the ontologically existing efficient principle.

tem associated with Anglo-Dutch Liberalism, is a relic of the system of medieval ultramontane imperialism, the system of empire associated with the use of the crusading, raping, and butchering Norman chivalry by the reigning financier oligarchy of Venice. Modern Anglo-Dutch Liberalism and its economic systems are explicitly an outgrowth of gnostic cult-doctrines codified by Paolo Sarpi and his followers of an Seventeenth and Eighteenth centuries Europe coming under the imperial rule of the British East India Company and its successors today.

As true gnostics, the doctrinaires of Liberalism, such as John Locke, Bernard Mandeville, François Quesnay, A.R.J. Turgot, Adam Smith, Jeremy Bentham, et al., conjecture the existence of a potency, an agency operating beyond knowledge, from under the floorboards of reality. To these curious, invisible creatures of that gnostic cult, these croupiers working under the floorboards of reality, fix the dice of riches and poverty, to make some men rich and others desperate. The spectacle of the John Law bubble, or that of 1998 LCTM, typifies the outcome.

Consider, for example, the absurdity of any attempt to impose the notions of animal ecology on studies of economy. The contemporary cult of "ecology" is an example of the pseudo-scientific methods associated with the present international diplomatic dogma on the subject of so-called "greenhouse gases." As I have always known and taught over more than a half-century, *the relative population-density of the human species, per square kilometer of the relevant large area of the Earth's surface, is the only competent standard of reference for studying the long-term processes within economies.* Only mankind, among all presently known species of living beings within our universe, has been capable of willfully increasing its relative potential *population-density per square kilometer of the planet's surface. My essential contribution to the science of physical economy, has been to recognize that the functions so defined for practice, are not only dynamic, as Leibniz insisted, but also characteristically Riemannian.*⁸

That has been the pivotal distinction of a science of physical economy since Gottfried Leibniz first defined the meaning of physical economy.

The increase of the potential relative population-density of a society as a whole, or the human species as a whole, is a function of the discovery and application of universal physical principles to the transformation of the behavior of society. These principles, and their realization in human social practice, are the central feature of any competent treatment of the

8. My tracing of the achievements of modern physical science to the impact of Johannes Kepler's discovery of modern astrophysics, was received as a highly controversial view among most of the scientists of FEF during the middle through late 1980s. It turned out, in the course of those discussions, that the issue was not an issue of experimental physical science, but of the conditions for acceptance of a valid physical discovery imposed, as at the blackboard—not the experimental domain, by the virtual Babylonian priesthood of the peer-review committees.

functional characteristics of a modern economy.

Hence, the only rational and competent basis for the study of economics, and for the shaping of economic policy, is not a modern system of financial accounting traced from the Lombard bankers of Fourteenth-Century medieval Europe, but a science of physical economy. The most significant addition, by physical science generally, to the enhancement of the understanding of physical-economic practices, has been the development of the notions of Biosphere and Noösphere by V.I. Vernadsky.

That much said, now startle the usual reader by introducing a most celebrated passage from the King James Version of *Genesis* 1.

Reputedly, it is the Prophet Moses who wrote:

“26: And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.

“27: So God created man in his own image, in the image of God created he him; male and female created he them.

“28: And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea and the fowl of the air, and over every living thing that moveth on the Earth. . . .”

From the standpoint of physical science, all that is said in those verses is true. Or, to say it in other words: that is, functionally, the actual place of man and woman in the universe. Knowing the threats which the Prophet Moses delivered to the relevant Pharaoh, and that he survived the delivery of those threats, we must recognize that Moses was an extremely powerful figure in Egypt of that time, and was probably also informed by the relevant institutions of the contemporary Cyrenaica. His view of the universe, as attributed to his connection to that first chapter of *Genesis*, fits the real universe as it might have been conceived by extant science of Egypt then, and by Vernadsky in his own later years. The language and imagery of the King James Version appears quaint to modern ears, but, from the vantage-point of such notions as the generation of the Solar System, and its known periodic table, from a solitary, fast-spinning younger Sun, the chapter as a whole rings as a fanciful description of what we know to be true from the standpoint of modern physical science.

For the case of Vernadsky: the categorical, functional division, according to distinctions of dynamic orderings of processes, corresponds to the actually known series of Creation. That idea of *Creation* as such corresponds to the view which Albert Einstein came to adopt, of a *finite but unbounded universe*, or, as I stipulate, a *Riemannian finite and self-bounded universe* as seen, as a process, by Heraclitus of Ephesus, for example, and by Plato’s method. Within this, we have the principled distinction of the respectively ontologically distinct categories of ostensibly abiotic, living, and cognitive

processes, as indicated by Vernadsky.

The most crucial experimental discoveries in modern European civilization have been essentially three: 1.) The uniquely original discovery of astrophysics by Johannes Kepler; 2.) The discovery of the principled pathway of quickest action by Fermat; and, 3) the uniquely original discovery of an actual infinitesimal calculus, satisfying Kepler’s specifications, by Leibniz. (The credit given to silly Isaac Newton is simply a product of gnostic gibberings among the novices.)

However, in the matter of all such considerations, the fundamental distinction is the unique correspondence between the anti-reductionist notion of *creation* (*nothing is ontologically constant but change*) and the functionally absolute distinction of the human individual from all lower forms of life. This is, otherwise, *the great secret of economics*.

2. The Secret Itself

The science of physical economy is defined, as a body of scientific practice, by its absolute break from the inherently axiomatic, implicitly ontological presumptions of financial accounting.

This means, of course, bringing to an end the present role of that relic of feudalism called “monetarism” in global affairs, and compelling the subordination of monetary policies governing relations among nations to those principles of physical economy which underlay the direction of reforms inherent in the U.S. Federal Constitution, as reflected in the reforms undertaken under U.S. President Franklin D. Roosevelt. It means understanding competent forms of economic policy, by governments and others, as an expression of relevant principles of physical science.

If this correction were not made, very soon, the planet as a whole is threatened with an early plunge into a prolonged new dark age of civilization. Members of the U.S. Congress, for example, have no “free choice” in this matter. They may choose either to act as required by principles involved, or, refusing to change their ways, enjoy the ruin their reluctance would bring upon themselves—as also others. It is the same for the individual citizen, and for all others who have the option of choosing the policy our nation and its political factions shall follow.

To these ends, our argument at this point must proceed from a relevant kind of correction needed for the more rigorous use than currently prevalent, of the term “science” in a general way. It means locating the needed policy changes in international economic relations in those considerations which absolutely distinguish human beings from all lower forms of life. This means that we must confine apes to the category of what are systemically lower forms of life.

This approach, as employed here, takes its authority from the conclusive evidence of the largely fraudulent basis in wrongful axiomatic assumptions, for much of that which is

dutifully recited as the supposed axiomatic basis of scientific methods by past and current generations of reductionists. Therefore, we must now eliminate philosophical reductionism, such that the edifices of the slums of today's presumably hallowed dogma collapse, all as if in a vast slum-clearance program. Reductionism is not a mere mistake; it is a willful fraud, a program of politically motivated "mass brainwashing," as by the followers of ancient Euclid and modern Sarpi, whose nature and motives I shall make clear below, that the source of the corruption to be uprooted now, is the oligarchical policy which Aeschylus identifies in his *Prometheus Bound*.

The only meaningful connotation of any use of the term science, points to the specific quality of change in the way in which a physical process is ordered, a change in terms of a discovery of a wittingly employed, universal principle, a qualitative change which occurs only through the intervention of the applied discovery and validation of a universal physical principle. Kepler's uniquely original discovery of universal gravitation typifies such a notion of universal scientific principle. This requirement exists, not only for what is regarded today as topics of physical science, but also for Classical artistic composition, such as the performance of a composition by J.S. Bach or by such followers of Bach as Haydn, Mozart, Beethoven, Schubert, Mendelssohn, Schumann, and Brahms, as it does for what may be conventionally defined as the realm of physical science.

In both domains, physical science and Classical artistic composition, the essence of the subject-matter is an apparent break in the continuity of what might be read as a formal-mathematical, deductive function, a break of the form conveniently identified as a *singularity*.⁹ In European civilization to date, the rigorous definition of such singularities is associated with the Classical, pre-Aristotelean Greek use and development of the Egyptian science of *Sphaerics*, a scientific method associated with the principles of astrogation derived from inclusion of transoceanic navigation occurring during the last great glaciation of the northern Hemisphere of this planet. The work of India's Bal Gangadhar Tilak on the study of ancient calendars not only dates the existence of relevant such calendars found, variously in post-Glacial and Glacial period cultures of Central and North Asia, but indicates some of these calendars as characteristic of transoceanic cultures.¹⁰

9. For example, the implications of the Pythagorean principle of music for the well-tempering introduced by J.S. Bach, are the crucial implications of Bach's system, as illustrated by his *The Art of the Fugue* and by Beethoven's treatment of this in his last set of string quartets. As the attempts at credible performances of Bach's *Jesu, meine Freude* and W.A. Mozart's *Ave Verum Corpus* demonstrate in attempted practice, the tempering needed to supply coherence to the process of development is a reflection of the adjustments of the voices required for coherence. Wilhelm Furtwängler's "performing between the notes," is a reference to this principle of Bach's revolution, in opposition to the extreme follies of Rameau and Fux.

10. Tilak, *Orion* (1893) and *Arctic Home in the Vedas* (1903). Contrary to dubious archeological concoctions by Nineteenth-Century British evangeli-

For the purpose of the topics of this report, the most convenient illustration of the argument is provided by the model of Johannes Kepler's uniquely original discovery of universal gravitation. All science, and Classical artistic composition, are expressions of the role of such singularities (e.g., apparent functional-ontological discontinuities) as expressions of the only existent, *ontological* quality of principles which run our universe.

In this case, as in all others, the essential task is to free the mind from the mind-crippling obsession of equating a universal principle to a mathematical equation, rather than recognizing the significance of the equation correctly, in its role as an attempted approximation of the adumbrated form as an apparent particular *effect* of the action by a universal physical principle.

This fact, respecting the nature of competent practice of science, is proven by considering the *dynamic*, as opposed to mechanistic role of interaction among discovered universal physical principles, as Leibniz proved this point, against the mechanistic folly of Descartes, for inorganic science, and as Vernadsky has presented this respecting the role of chemistry in the Biosphere. This conception was already the basis for the scientific method of the Pythagoreans, as they and Plato traced the origin of that method, *Sphaerics*, to ancient Egyptian sources for the origins of European science.

The Method in Kepler's Discovery

For example, the Sophist's approach to explaining Kepler's discovery of universal gravitation, admits Kepler's proof that the relationships among the Solar orbits of Earth and Mars define a system of elliptical orbits. Then, the Sophist seeks to derive the argument for gravitation from the simple, ideal ellipse treated as a simple Euclidean cut of the cone. The Sophist may concede the existence of Kepler's reference to *equal-times: equal areas*, but denies the ontological implications of that fact amid the simple, Euclidean view of the merely formalist mathematics of conical cross-sections, that without taking efficient physical principles into account. He thus treats gravitation implicitly as a function of the ellipse, rather than the elliptical orbit as an adumbrated function of a physical principle of universal gravitation.

"What is the physical principle of change of action which generates the rate of infinitesimal change from instant to instant of the Solar orbits?" This issue was the premise on which Kepler based two missions he identified for treatment

cal gnostics, the origins of leading known riparian cultures are located in riparian transoceanic cultures, as is the case for the known origins of the riparian cultures of both Mesopotamia and the Nile. The Great Pyramids express the astrophysical and transoceanic roots of the Egyptian astronomy and related science which underlie the adoption of Sphaerics by Thales, the Pythagoreans, Plato, and others. Contrary to British gnostic myths, ancient Egypt commanded a maritime culture using flotillas of ships, as is emphasized in connection with the later work of the Platonic Academy's Eratosthenes in measuring the circumference of the Earth.

by later mathematicians. Here lies the precedent for Kepler's call for the development of a calculus, for Leibniz's original statement of his discovery of the calculus (Paris, 1676), and Leibniz's later perfection of this discovery as the notion of a universal, catenary-cued principle of physical least action. First, Kepler prescribed the development of an explicitly *infinitesimal* calculus, a task mastered, with unique originality, by Gottfried Leibniz.¹¹ Second, he prescribed the need for a generalization of the principles of *physical-elliptical* functions, a challenge met by Carl F. Gauss and Bernhard Riemann, and contemporaries associated with their efforts on this account.

This question, as posed by Kepler, reflects his explicit adoption of the scientific method of Cardinal Nicholas of Cusa, the method from which all competent streams of modern scientific thought have been derived. This case serves us here as the typical illustration of the meaning of the discovery and employment of a universal physical principle.

Consider the Leibniz calculus first.

There were numerous contributing efforts underlying Leibniz's development of an infinitesimal calculus as expressing a universal physical principle of least action. However, the essential premises of this accomplishment were three. One precedent was the ancient method of Sphaerics, as traced by Leibniz himself to the Pythagoreans and Plato, as by his introduction of the concept of dynamics to replace the physically incompetent notion of mechanics.¹² The other two, were the work of Kepler as combined with Fermat's discovery of the principle of quickest pathway. In all of these efforts, the idea of the *ontologically infinitesimal*—Leibniz's *monad*—was crucial.

Glance for a moment at the issue posed by such followers of Descartes and Newton as D'Alembert, de Moivre, Euler, Lagrange, and, later, Laplace and Cauchy. All of these avowed Leibniz-haters premised their reputations on the rage-driven belief that an ontologically infinitesimal differential did not actually exist. They could not deny the formal mathematical evidence of their deductive enterprises, but they did insist that the existence of such mental objects as the relevant cubic or biquadratic roots was essentially "imaginary,"

11. No honest and competent scientist would ever actually believe the proposal that Isaac Newton had either developed a differential calculus before Leibniz, or that Newton's concoction was an actual calculus of the type which Leibniz had originated according to the prescription of Kepler. What the competent scientist believes when he lies, as it were the cock had crowed thrice, when he she defends Newton on this matter, is that it would be damaging to that scientist's career to admit openly that the claims of Newton are not only fraudulent, but ridiculously so. It was the attempt to defend both Descartes and the reputation of British black-magic specialist Newton, which led the prostitutes of empiricism, such as D'Alembert, de Moivre, Euler, Lagrange, Laplace, and Cauchy, to defend the reputation of their putative client, Isaac Newton, as if to say, "Do I please you, honey?"

12. Leibniz made notable attempts to reintroduce the method of the Platonic dialogue as a replacement for, or complement for the teaching of mathematical physics.

merely a convenient fiction of the mathematician's mind. This was the kernel of the hate-filled rant of Leonhard Euler and other reductionists of that type of follower of Venice's Abbé Antonio Conti against Leibniz. Such was the fallacy of those Leibniz-hating empiricists who were refuted by Carl F. Gauss, beginning with his 1799 doctoral dissertation, and later exposed most emphatically as hoaxsters on this account by Bernhard Riemann.

Formally, these attacks on Leibniz were instigated by the just-referenced, Paris-based Venetian priest Abbé Antonio Conti, who had adopted the role of advocate for the neo-Euclidean, reductionist ideology of René Descartes, who concocted and largely directed the crafting of the synthetic personality of Sir Isaac Newton as what Conti foresaw as the English version of French Cartesianism. The English Sophist Samuel Clarke was among the notable collaborators in the handling of the poor, confused Newton for an operation which prefigured the Martinist freemasonic hoaxes of Paris which Benjamin Franklin participated in exposing as frauds. Conti continued this activity into his death in 1749, and was, together with Voltaire, the leading organizer of a network of rabidly reductionist anti-Leibniz salons throughout much of Europe, include the Berlin base of Leonhard Euler and J. Lagrange, and those of their Paris followers Laplace and the hoaxster Cauchy, who led in the wrecking of the École Polytechnique of Gaspard Monge and Lazare Carnot, and thus forced the shift of the global center of scientific progress from what had once been Jean-Baptiste Colbert's Paris, to Alexander von Humboldt's Berlin.

Masters and Slaves of Science

The key to understanding the roots of the frauds of the type perpetrated by the Cartesians and Newtonians, such as D'Alembert, Euler, Lagrange, Laplace, Cauchy, et al., is conveniently presented in Aeschylus' *Prometheus Bound*. The alleged "crime" against the Olympian Zeus for which Prometheus was condemned to the "Abu Ghraib" of that account, was Prometheus' act of providing mortal human beings with knowledge of the use of fire. Prometheus had thus violated the dogma of "zero technological growth," had violated that dionysian cult-dogma on which the contemporary "greenie's" characteristic pagan religious fanaticism is premised.

In effect, thus, the Olympian Zeus and his accomplices condemned the greater portion of mankind to a life lived as cattle, as slaves of either the body, or, slaves of the conditioned delusion, such as empiricism, infesting their mind.

Similarly, in the doctrines of ancient and modern gnostic theology, mankind is prohibited from looking beyond the shadows of sense-perception to discover the efficient principles which cast those shadows. However, with the Fifteenth-Century emergence of the modern nation-state, as typified by the work of Cardinal Nicholas of Cusa, a certain change was introduced into the way in which the ban against discovery of universal physical principles was enforced. The crucial

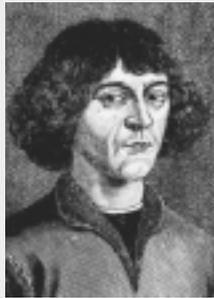
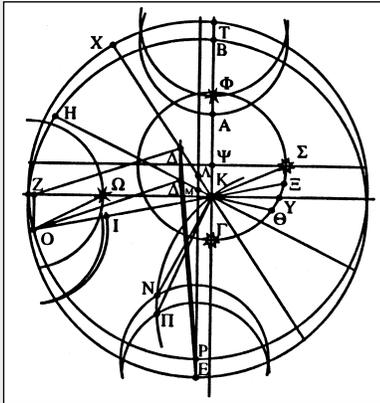
The Keplerian Revolution

In pathological mathematical methods, such as those used by the followers of Ptolemy, Copernicus, and Tycho Brahe, physical processes are merely described by the method of connecting observed points (“dots”) in ways which presume that all observed processes can be explained mathematically, as if at the blackboard. The diagrams shown here are from Kepler’s New Astronomy.



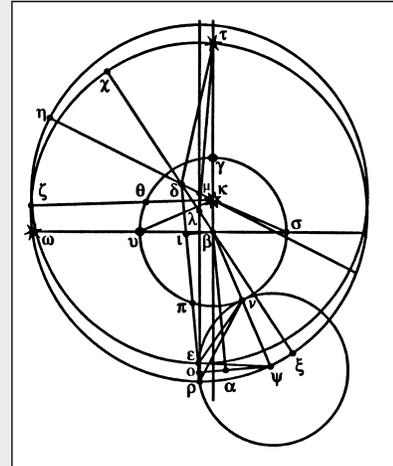
Claudius Ptolemy
(2nd Century A.D.)

The diagram is Kepler’s representation of Ptolemy’s geocentric worldview. The Earth is at point K; the Greek letters show the paths of the apparent motion of the Sun and other heavenly bodies, travelling around in epicycles. These were purely geometrical constructs, required to “save the appearances”—or permit prediction of astronomical phenomena. Ptolemy made no claim to describe the physical reality which would make such bizarre movements possible.



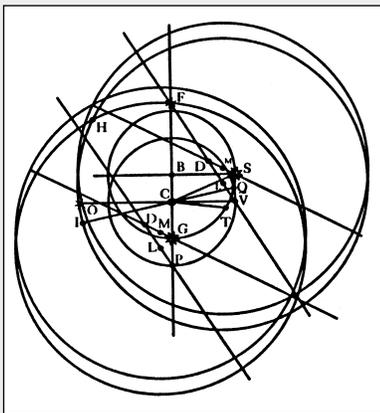
Nicolaus Copernicus
(1473-1543)

His model of the cosmos moved the Sun to the center (at K), but still required a plethora of epicycles in order to “save the appearances,” because it was not based upon understanding of the physical causes of the motion of the heavenly bodies.



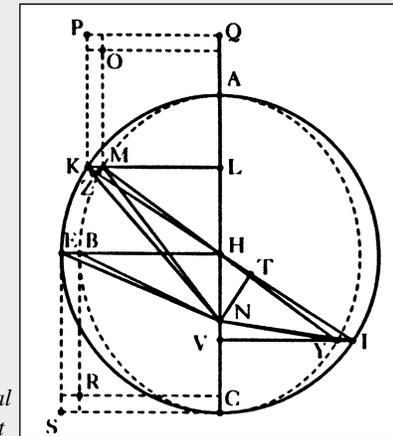
Tycho Brahe
(1546-1601)

Tycho’s construct was an attempt at a compromise between the Ptolemaic and Copernican models. The stationary Earth is at C. The Sun (S) revolves around the Earth, as do the “outer” planets (Mars, Jupiter, Saturn); the “inner” planets (Mercury, Venus) revolve around the Sun.



Johannes Kepler
(1571-1630)

For Kepler, the trajectory of action is determined by universal physical principles, not by “connecting the dots.” This diagram is one of many in the New Astronomy, by which he charts his discovery of the elliptical orbits and the principle of universal gravitation.



change introduced to modern European oligarchical dogma is traced chiefly to the new Venetian faction of Paolo Sarpi.

Sarpi’s “new Venice” faction had accepted the uncom-

fortable reality, that the emergence of modern European society, through the work of Nicholas of Cusa and his circles, could not be totally reversed in the way the gnostic religious

reactionaries of that time, such as Grand Inquisitor Tomás de Torquemada, proposed. Sarpi defined a new Venetian policy, under which Europe would adapt to controlling, and also employing some among the effects of technological progress, rather than attempting to crush science absolutely. The reaction of the Inquisition to the role of Sarpi's house-lackey, the modern Sophist Galileo's fraudulent promotion of Copernicus, but in opposition to Kepler, on the matter of the Solar orbit, typifies the quarrel between the old reactionaries, as typified by the Hitler-like torturers of Inquisitional Spain, and the new Sophists of Sarpi's empiricism.

Like evil Olympian Zeus and the Delphi cult of the Pythian Apollo, Anglo-Dutch Liberalism was only a new costuming of the old Inquisition. Why waste effort destroying the victim's body, as the Inquisition had attempted, when it were easier, and more efficient, simply to destroy the primary "offending organ" within the body, the creative powers of the individual mind?

Sarpi's followers, including Galileo, had their own version of an inquisition, replete with religious inquisitions to match: the empiricist inquisition of Galileo's pupil Thomas Hobbes, and such followers as John Locke, Descartes, Newton, and the anti-Leibniz cabal of D'Alembert, Euler, Lagrange, Laplace, Cauchy, et al.

Essentially, the distinction stipulated by the "new Zeus," Paolo Sarpi, was the following.

Technological progress would be permitted, lest the nations led by followers of the Renaissance legacy of Nicholas of Cusa, France's Louis XI, and England's Henry VII, might overpower the Venetian faction echoing the ultramontane tradition of Venetian financier-oligarchs and Crusading Norman chivalry. There was nothing good about Sarpi, relative to the Old Party of Venice; Sarpi and his New Party were only more clever; less brutally stupid.

It was Sarpi who pioneered in moving the center of gravity of the Venetian financier-oligarchical power, from the now increasingly vulnerable head of the Adriatic, into the emerging financier oligarchy of the Anglo-Dutch maritime north. Despite the great victory of Cardinal Mazarin and his associate Jean-Baptiste Colbert over that evil of the Spanish and

Austrian Habsburg dynasty expressed as the Thirty Years War of 1618-1648, the combination of the corruption of pagan "Sun King" Louis XIV and William of Orange's bloody tyranny in England and Ireland, turned the tide in favor of the New Venice party of Sarpi's system, in that form of moral debasement which became known as the Anglo-Dutch Liberal imperialism which is still the principally leading force of Venice-style evil rampant on our planet today. Sarpi himself had been a leading figure personally, in orchestrating the corruption of England, not only since the accession of a James I surrounded by Sarpi-run scoundrels such as Sir Francis Bacon, but as early as 1588 and the assassination of William Shakespeare's friend Christopher Marlowe.

Where the Habsburgs had used the Satanic practices of their Inquisition, Sarpi's New Party relied upon a new kind of intellectual corruption, the form of Sophistry called philosophical Liberalism.

In one crucial respect, the change from Old to New Venice was virtually no change in principle, but only in strategy. The chief enemy remained Cardinal Nicholas of Cusa and his legacy. It was modern experimental scientific method, as pioneered by Cusa's *De Docta Ignorantia*, which was the continuing target for destruction chosen by both Venetian factions, Old and New alike. That remains policy today, this time, chiefly, in the form of base moral corruption known as Anglo-Dutch Liberalism. Like evil Olympian Zeus and the Delphi cult of the Pythian Apollo, Anglo-Dutch Liberalism was only a new costuming of the old Inquisition. Why waste effort destroying the victim's body, as the Inquisition had attempted, when it were easier, and more efficient, simply to destroy the primary "offending organ" within the body, the creative powers of the individual mind?

That is the great crime which Anglo-Dutch Liberalism has perpetrated against the world as a whole, a crime launched with fresh vigor as soon as the dreaded enemy, President Franklin Roosevelt, were dead.

Since the adult generation of World War II had been reared under the influences radiating from Classical European culture of Christianity, the Fifteenth-Century Renaissance, and the rise of the modern nation-state cultures in the aftermath of the 1648 Treaty of Westphalia, the Liberal enemies of civilization targetted the newborn generation, especially those newborns from families whose progeny were likely to be trained at leading universities, and to go on to roles of leading policy-shaping influence in the most influential classes of institutions of private life and government alike. These became the victims known today as the "68ers," the children of that pro-Satanic cult known as the Congress for Cultural Freedom and its adjunct, the American Family Foundation.

Empiricism is a particular species of fraud. It pretends to tolerate nothing different than the authority of sense-perception, but nonetheless assumes that something akin to little green men under the floorboards of experience, is willfully

controlling the outcome of the actions, or inactions of the individual, nation, and institution. Since empiricists are not merely Sophists in principle, but also, as the hoaxsters Thomas Hobbes, John Locke, Bernard Mandeville, François Quesnay, Turgot, Adam Smith, Jeremy Bentham, et al. typify such cases, empiricists are gnostics in the strictest sense of the term, attributing special powers to agencies beyond the reach of human senses and reason alike. They represent the Sophistry of Euclid's "definitions, axioms, and postulates" carried to an extreme.

Thus, the influence of the quality of philosophical Liberalism traced to the influence of Sarpi's "new party," requires the assistance of a special kind of inquisitorial Babylonian priesthood, called in the canons of academic life today, "peer-review committees"—so-called "canons of science" which also serve as the precedent for poor foolish President George W. Bush, Jr.'s lunatic "signing statements."

Thus, although a mathematical formulation supplied as part of a program in practice of physical science may be useful, within the limits of ordinary applications of scientific prudence, the mathematical or like formulation must not be considered as a substitute for the principle which that formulation pretends to reflect. The characteristic of the relatively orderly practice of empiricism in science, is the ontological fallacy of substituting the descriptive mathematical formulation for the ontological actuality of the universal physical principle of which the mathematics is, as the Apostle Paul warns in his *I Corinthians* 13, only the shadow cast as if upon a dark mirror.

The significance of what had been known as this well known problem of the intrinsic fallacy of composition underlying all empiricist method, was made clear by the work of Riemann, who eliminated all aprioristic presumptions, such as Euclidean definitions, axioms, and postulates, from credible scientific practice. This standpoint enables us today, to make the relevant case more clearly, more directly than heretofore.

What Is Actually Universal?

It is now past time to escape from poor foolish faker Zeno's quasi Euclidean space! We dwell in a real physical universe, which Albert Einstein described as a "finite but unbounded universe." The proper statement would have been "finite and self-bounded universe."

This idea was already extant in the work of the Pythagoreans and Plato. The idea appears with greater clarity in Kepler's discovery of universal gravitation.

How big is gravity? How far does it reach? Implicitly, gravity as its nature was crucially demonstrated by Kepler, is as big as the universe. To the extent that notion of gravity might be qualified as reflecting a higher-order principle yet to be discovered, gravity would be considered as as big as the universe. Thus, we would propose that the universe, while very large for us, is nonetheless finite, and about the same

size as gravity. We would also say, that gravity bounds the universe as finite and self-bounded.

Some wags might object to this, as sophists generally are wont to do, but the core of the point is fully defensible, and any contrary notion would be essentially absurd scientifically. Even if gravity is only a subsumed feature of a higher universal principle, that principle which rightly subsumes gravity defines the universe as finite and self-bounded.

This brings us immediately to the matter of infinitesimals. Explore this notion now, using the working, pedagogical assumption that gravity is either the actuality of the universe's finiteness, or a reflection of that. What aspect of that universal, gravity, is expressed as the action generating the Solar orbit? The response would be, that the "size" of the total gravity of the universe expressed would be an infinitesimal part of the gravitational action of the universe as a whole.

I have supplied that argument to convey a sense of the meaning of the notion of the infinitesimal in physical science and related subject-matters. Thus, we have Leibniz's notion of the catenary-cued notion of universal physical least-action. Similarly, all of the matters which are addressed by the reductionist fanatics Leonhard Euler et al., in their attacks on Leibniz, have the corresponding implications. All universal physical principles must necessarily be expressed as functions of a Leibnizian infinitesimal calculus. This goal has acquired a certain degree of perfection in the work of Riemann respecting hypergeometric functions.

This was already implicit in the method of *Sphaerics*, as employed by the Pythagoreans, the Socrates of Plato's dialogues, and Plato himself. It was implicitly pervasive in the work of the followers of Plato (and opponents of Aristotle and Euclid) among the members of the Platonic Academy through Eratosthenes, as typified by the measurement of the Earth's orbiting of the Sun by Aristarchus of Samos, centuries prior to the concoction of the Aristotelean hoaxster Claudius Ptolemy.

It is useful, in relevant educational programs, especially for young-adult youth of university age, to emphasize the connection between some crucial features of method employed by the Pythagoreans and their collaborators and the notion of universality which flows, within modern physical science, from attention to the role of gravitation in Kepler's attention to the organization of the Solar System.

For example, there is no way in which the existence of a line is implicit in a point, nor a surface in a line, nor a solid in a surface. These connections were recognized by the relevant Pythagoreans and Plato's circle as limited to universal physical principles, which must be proven as any discovery of a universal physical principle must be proven. In Classical Greek, this was associated with the concept of *dynamis*, the concept brought into modern physical science, by Leibniz, as the concept of *dynamics*. The most significant of these concepts, historically, was the solution for the doubling of the cube, only by construction, by Plato's collaborator Archytas.

The treatment of this matter by Eratosthenes, is of crucial historical significance in this connection.

This matter of the doubling of the cube erupted in modern European scientific efforts, around the matter of defining cubic roots by Cardano et al., and erupted later around the attacks on Leibniz by D'Alembert, de Moivre, Euler, et al. As is well known, this issue of cubic roots, and also the related matter of biquadratics, was the point of conflict, respecting geometry, between the empiricists and Carl F. Gauss's 1799 doctoral dissertation. Here lies the point in modern mathematics at which the specific issue of the so-called mathematically "imaginary" arose then.

That issue is clarified in a sweeping way, once the issue of Classical Greek *Sphaerics*, the matter of *dynamis*, is taken into account, as by Plato's *Theaetetus* and *Timaeus*, for example. These issues illuminate certain deeper implications of Leibniz's concept of universal physical least action in a way of crucial importance for a science of physical economy today.

This leads us to the crucial, concluding points to be offered here.

3. Now: Physical Economy As Universal

Let us now summarize the matter presented thus far by the following summation of the direction in which these and related subjects of reflection should carry our attention today.

It should be relatively obvious, that the distinction between the ape and human, is lodged within the accumulated effects of a dynamic interaction among the discovered universal physical principles embodied in the practice of what we may consider, in effect, as national physical economies. Each such principle, if it is a principle in fact, has the characteristics it shares in common with Leibniz's notion of a universal physical principle of least action.

The quality of *dynamics* is expressed as the interaction among such principles, rather than a collation of impulses acting upon commonly targetted discrete objects. This is illustrated by a point which Vernadsky makes in his distinction of the living chemistry of the Biosphere from the types of rudimentary chemical interactions within non-living processes.¹³ In other words, the introduction of action by the principle of life, upon a domain of non-living processes, produces a qualitative change in the chemistry of the combined living and non-living processes. This Vernadsky rightly emphasizes as a dynamic, rather than a mechanistic process. The optical orientations noted by Louis Pasteur, are among the reflections of chemical changes associated with the impact of living processes seen then as a *suspected* universal physical

13. LaRouche, op cit.

principle of life.

For similar reasons, the transfer of production from regions of the world which have a relatively high level of development of production culture and infrastructure, to a cheap labor market, has consistently lowered the net productivity of the world as a whole. This point might be debated by persons of superficial opinions, until we had confronted them with the threat to the existence of the human species, if we fail now, to push fully back into a pro-nuclear-technology orientation, before we insist on using lower grade natural resources on which we continue to be stubbornly dependent at the same time we are exhausting the supply of those resources!

Only a shift into a full-scale escalation in reliance on the very high energy-flux-density modes of nuclear-fission and thermonuclear-fusion technologies, could save the planet from what were otherwise an historically early general collapse of civilized life, and population-levels, throughout the planet as a whole.

Science and History

This presents us here with two leading subjects for our urgent reflection today. Science and history.

For me, and I am assured that this has been my proper choice of emphasis in the course of my life's work, the pathetic feature of culture in, for example, the U.S.A. today, is the dismal lack of any efficiently systematic comprehension of even U.S. national history, without even taking into account the longer history, since no later than ancient Greece, of the global impact of European civilization as a whole.

For me, and I am right in making this point, all European civilization, including its extension to interaction with other streams of culture on our planet, is not only properly, but also necessarily treated as a continuous process of experience over the recent period of more than three and a half thousands of years. The passage from the collapse of Greece through the folly of the Peloponnesian War, the rise of the synthetic culture of Rome to imperial status, the passage from imperial Rome to imperial Byzantium, the decline of Byzantium with the rise of the ultramontane form of imperial partnership of Venetian financier-oligarchy and Crusading Norman chivalry, the New Dark Age of the Fourteenth Century, the rise of modern European civilization with the Fifteenth-Century Renaissance, and a post-Westphalia civilization freshly threatened by the ogre of Anglo-Dutch Liberal imperialism, and blessed by the creation of the U.S. Federal Republic, are a single process.

The very fact of the complexities which must be taken into consideration in tracing the evolution of this human mass over these millennia, requires us to treat the entire process as a single process, but one which is essentially dynamic, not mechanical in its characteristic developments and declines. Yet today, even putatively "well-informed" figures in positions of relatively great influence, are usually no better than pathetically ignorant and clumsy boors when treating the mat-



Oak Ridge National Laboratory

A shift to reliance on nuclear-fission and thermonuclear-fusion technologies is indispensable for the future of the planet. Here, an artist's concept of an offshore nuclear-powered desalination plant, with fresh water transported by pipeline to where it will make the "deserts bloom" in the arid Middle East.

ters on which the welfare of civilization depends.

On that account, we are well reminded of what Plato says of the Egyptian warnings to Solon of Athens. We have seemingly very few "old men" among us; even those who have reached my age, seem to me as like ignorant children who might have been freshly born yesterday.

This concern for European civilization as a long-wave process, coincides with the only permissible view of the nature of the human individual.

As I have said and written many times and more, during the past three and more decades, were mankind a species resembling the higher apes, our species would probably not have exceeded several millions living individuals, in number. Today, we have over six billions persons living. This change in relative potential population-density, is the net outcome of no less than hundreds of thousands of years of existence of our species, a species which is different from every other known living species in its essential characteristics. The difference is what we might call "the power of reason," the power to generate discoveries of universal physical principles, through which discoveries we are able to increase the human life-expectancy and potential relative population-density, as no other living creature.

This power is lodged within the capacity to revolutionize human nature, by adding to it discovered universal principles. Through these discovered principles, we are able to transform ourselves into what is functionally a higher species than we have been before. Thus, while we are each mortal, and individual life is very fragile, and very brief in the scheme of things, there is immortality to our existence which is not to be found in any other living species. We are able to transmit

acquired mastery of the discovery of universal physical principles to others, and that in such a way that we transform the others into a more powerful species than they would have otherwise become.

This role, of making and transmitting discovered universal physical principles of the universe, is for us an intimation of personal immortality, and the implicit immortality of our species, too. The animal aspect of our existence, the mortal aspect, passes on, but the immortal aspect does not, in which the individual, by discovering and employing existing and also potential universal principles of our universe, achieves thus the justified intimation of personal immortality as well.

The objective of public policy of a true republic, must be to prevent any member of society from dying, if possible, before they had, in some way, participated as a sovereign individual soul, in this great creative process which reveals us as made in the likeness of the Creator of the universe.

In this matter, for us, there are no isolated principles, but rather a dynamic interaction among them all. To live to the fullness of what an individual mortal life might become, our personal objective is to become not only efficiently conscious of that dynamic set of relations, but to enjoy such practice deliciously and enormously.

How hateful then, the practice of empiricism must seem to those of us, who wish to be happy as living human beings!

Make at least the known dynamics of the history of now globally interactive European civilization the domain in which the individual's personal sense of identity, the intimation of immortality, dwells.

The fun of the journey, is the joy to be found in getting there.