

SCIENCE IN ITS ESSENCE

On the Subject of ‘Insight’

by Lyndon H. LaRouche, Jr.

May 9, 2008

*In my **Sir Cedric Cesspool’s Empire**,¹ I emphasized the importance of the concept of “insight” as key for, among other things, understanding the mechanisms of evil which characterized the most notable writings of the leading Fabian Society figure H.G. Wells. Here, I return to that notion of **insight** for conceptualizing the root-causes of the present plunge of world civilization, into the prospect of an immediate new dark age of mankind, a prospect caused by the role of the same standpoint of Wells in his threatening the planet as a whole, with what has now become its currently accelerating plunge toward an abyss.*

In real life, one never really knows what has been done, until one knows not only why and how it was done, but is capable of replicating the formation of the concept.

As I have indicated within written and oral reports published earlier: looking back from today, the most crucial event in my life, has been my surefooted rejection of the concept of Euclidean geometry on the first day of my encounter with it in my secondary classroom. The most crucial implication of that for my later life, has been, that, in rejecting Euclidean geometry as intrinsically incompetent, as I did that day, I had actually made a decision which was to shape the essential features of my life over the seventy years which have followed that event.

To repeat what I have said repeatedly on the subject of that event, over the intervening years, the following should be not-

ed as an entry-point into the discussion to follow here.

My fascination with the Boston, Massachusetts Charlestown Navy Yard, had been centered in the ongoing construction-work there. This had forced my attention to the fact of the challenge of understanding the geometric principle of construction through which *the ratio of mass and weight of supporting structures to the support of the total structure*, is ordered. This repeated experience, on both my several relevant visits there, and my haunting possession of the fact of that experience, had already established the meaning of “geometry,” as *physical geometry*, for me, that already prior to my first encounter with secondary school geometry.²

The continuing importance of my flat rejection of so-called Euclidean geometry at first classroom encounter with it, is typified by considering the way in which this reverberating experience led, a decade and more later, to my flat rejection of the sophistry of Professor Norbert Wiener’s presentation of so-called “information theory,” of the still wilder insanity of John von Neumann’s notions of “economics,” and von Neumann’s matching, pervert’s view of the principle of the human mind. These latter goads, and related experiences, prompted me, in 1953, to discover and adopt the appropriate consequence of Leibniz’s work, as the standpoint of Bernhard Riemann’s 1854 habilitation dissertation.

In that light, this adolescent experience, with its outcome, is the best illustration from my experience of the proper technical meaning of the term “insight.”³ In fact, it was an integral

2. This development was associated, during that same period of my life, with my father’s principal intention in selecting those visits, the ritual tour of the U.S.S. Constitution; my own attention was focused on the mysteries of the construction in other parts of that yard.

3. Wolfgang Köhler: please forgive me; it was necessary!

1. See *EIR*, May 9, 2008.

The LaRouche Youth Movement "Basement Team" is now approaching the study of Riemann's 1854 habilitation dissertation, after having completed three previous projects: the Pythagoreans through Leibniz; Cusa through Kepler; and Carl Gauss (see <http://wlym.com/~animations/>). Shown: Young scientists of the LYM, working in the Basement, at Round Hill, Va., February 2007.



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nize, and to rely upon the concept of *insight per se*: *Insight* as being the Platonic domain of *hypothesizing the higher hypothesis*, a concept of the nature of the human species and its individual member, which is central to all of the discoveries of principle by Plato.

The LYM Science Project

Presently, three relevant, major projects by the LaRouche Youth Movement (LYM) have preceded that association's presently

approaching treatment of the implications of Riemann's 1854 dissertation.

The first of those three had been based on a West Coast team, which had worked through some crucial features of the ancient origins of modern European science, as located in the related work of the Pythagoreans, Plato, and the modern reflection of this treatment of *dynamics* in the work of Leibniz.

A second team had worked through the main features of the founding of modern European science by Cardinal Nicholas of Cusa's and by Leonardo da Vinci's follower, Johannes Kepler. The LYM's thorough-going, published report on the

feature of the process which had led me, during adolescence, to adoption of the work of Gottfried Leibniz as the chief reference-point of my intellectual life, then, and, implicitly, to the present day.

From that point in my youth, onwards, the chief philosophical reference-points in my intellectual development, were wrestling against the sophistry of Immanuel Kant's series of "Critiques," and the systemic sophistry of both Aristotle and his follower Euclid. It was against that background—those rejections, which had been fully established already for me during the course of my adolescence, that I came to recog-

Kepler project, is a uniquely competent treatment, as similarly expressed in the work of Albert Einstein, as by relevant others, but is not competently taught in known university programs otherwise available today.

In the second study, that of the uniquely original discovery of gravitation, by Kepler, the difficulty, highly relevant to the matter of *insight*, is that secondary sources on Kepler's work have been (see <http://wlym.com/~animations/>), chiefly, viciously fraudulent evasions of the actual development of Kepler's original and crucial discovery of a principle of Solar gravitation, a discovery which is maliciously denied to exist, as such, in conventional academic and related programs today. This is the aspect of Kepler's work which was strongly upheld by Albert Einstein, against those Twentieth-Century Max Planck-hating thugs of the modern positivist tribes associated with the pathetic Ernst Mach, and with the worse Bertrand Russell of *Principia Mathematica* notoriety.

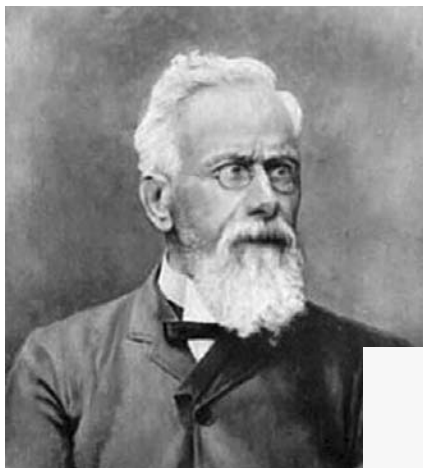
In the third case-study, the work of Carl F. Gauss, I had proposed to the incoming team, from the outset, that Gauss rarely presents the history of his actual processes of discovery, but, rather, presents the results, and also provides a plausible approach to study of the way in which *he might have effected* the relevant discovery. *The mission assigned to the incoming team was, therefore, to discover how Gauss's mind actually worked in his making his key discoveries.* Obviously, that assignment for the incoming team had been crafted by me as a challenge within the realm of epistemology, the domain of *insight* properly defined.

This frankly original approach to the study of Gauss's work, has produced some uniquely useful findings, findings which provide a uniquely original approach to taking up the unique revolution effected by Bernhard Riemann, from the point of his 1854 habilitation dissertation, the change which launched the Riemann revolution in science, through those challenges which Riemann posed to such among his successors as the Italy school of Betti and Beltrami.

To explain the significance of those listed, four initial stages of work for understanding human scientific creativity in general, I proceed now with reference to the relevant implications of what I define, once more, *ontologically*, as the principle of *insight*.

This will clear the pathway for the study of the uncompleted projects of Riemann, as the case is only illustrated by the work of Betti and Beltrami, as by the challenges posed by V.I. Vernadsky and Albert Einstein, later. Here, comprehension demands the more precise treatment of the notion of *insight* which is included in the following pages.

The importance of treating that subject in this fashion



The LYM's work on Gauss "has produced some uniquely useful findings" which provide an approach to "the unique revolution effected by Bernhard Riemann, from the point of his 1854 habilitation dissertation ... through those challenges which Riemann posed to such among his successors as the Italy school of Betti and Beltrami." Enrico Betti (above), Eugenio Beltrami (above right) and Bernhard Riemann.



here, is to be located, in significant part, in the fact that the third in a continuing series of science projects conducted by teams from the LYM is nearing the point at which the team's study of the mystery of Carl F. Gauss's career is now entering its completion, a point at which a comprehensive treatment of the work of Bernhard Riemann will be undertaken by a new team, the essential contributions to advancing the frontiers of modern science to be found in the work of Bernhard Riemann and his immediate associates and other collaborators.

1. Man as Man, or Beast?

The quality of *insight*, as I define it, again, here, is a specific potentiality which is fairly defined as being *unique to all those individual human beings who are not victims of relevant physical or psychological damage.*

The present definition of human, as distinct from beasts, is the *specific* power of the human species to alter its behavior, as a species, to the effect that the potential relative population-density of the members of a culture is increased willfully, as this is illustrated not only by a human culture's ability to increase its potential relative population-density willfully, but

by the manifest transmission of such *specific qualitative* changes from one, to other members of the human species, as, for example, through stimulation of discovery of a physical principle by individuals presented with the appropriate intellectual stimulus.

This quality is demonstrated, crucially, by the *willful* increase of the relative population-density of the human species, as expressed in the *quality of anti-entropic increase* of the mass of the Earth's Noösphere, that relative, functionally, to the specific masses of the Biosphere and the mass of matter originally generated as part of the abiotic domain.

Thus, there is no species of ape, or other beast, which is capable of meeting the standard of this test.

On this account, there is only one human race, and no essential human differences in species, or variety, within the ranks of humanity so defined.⁴ This functional distinction in the potentials of human behavior, whether expressed by individuals, or by societies as a whole, is properly approached for examination from the vantage-point established by Plato, both respecting Plato's refined definition of the concept of hypothesis, and the systemically related subject of the quality of the individual human soul, as that subject was treated by Plato and Plato's follower Moses Mendelssohn.⁵

In general, the Classical term *hypothesis*, when employed in any approximation of a meaningful, Platonic way, is already a reflection of specifically human potential for creativity. The simplest expression of that distinction is the difference between reason and Sophistry. For the purposes of our discussion here, Sophistry is typified by the reductionist method, opposed to reason, which was shared among Aristotle, Euclid, and the hoaxster Claudius Ptolemy, as typical of the Aristotelean form of the method of lying called "Sophistry," or, in current argot, "spin."

The typical expression of corruption of the human mind in contemporary, globally extended European culture, is *Anglo-Dutch Liberalism*, otherwise known as the legacy of the New Venice faction of Paolo Sarpi. The extremely degenerate expressions of Liberalism (e.g., *empiricism*) today, are extreme expressions of Liberalism's intellectual degeneracy such as positivism and existentialism.⁶

Therefore, we shall proceed with our exposition here by taking up the case of Aristotle's follower Euclid, as in the case of the work titled *Euclid's Elements*.

Minds Blinded by Sight

The Aristotelean form of Sophistry represented by the Euclid of *Euclid's Elements*, is premised upon so-called *a-priori* presumptions, assumptions which are associated with reliance upon the believed absurdity that "seeing is believing."

For example, it would be impossible to discover the universal principle of gravitation, as characteristic of the organization of the Solar System, except by relying, as Johannes Kepler did, upon the clear evidence of a systemic contradiction between the Solar System viewed from the standpoint of an assumed paradigm of sight, rather than the fruitfully paradoxical solution provided by contrasting the characteristic of hearing, as Johannes Kepler did, with the characteristic, linear presumption usually associated with a naive notion of the characteristic of sight.⁷

The entirety of the purely arbitrary presumptions underlying *Euclid's Elements*, was located in a naive presumption respecting the *assumed ontological elementarity* of the characteristic of vision.

Thus, true *insight* sees vision as such as representing the primitive level, sees that one's opinions on this level, are products of a foolish belief in the reality of simple sense-experience. The lowest level of actual human intelligence, the level of *actual insight*, is the recognition of the fact that one's opinions respecting sight alone, are being formed in the grip of a kind of form of mass-insanity such as "sense-certainty," which is to be recognized as a *mind blinded, thus, by blind faith in sight*.

For matters of science, and also history, naive seeing as such must be superseded by *insight*.⁸

Kepler's discovery of the principle of general gravitation, provides a typical kind of crucial proof of the fallacy of sense-certainty. In his *Harmony of the World*, the discovery of general gravitation within the Solar System required the juxtaposition of two notions of senses, those of sight and hearing (i.e., harmony), for the derivation of a general principle of gravitation among the planets. This leads to the recognition that our powers of sense-perception are to be regarded as the natural experimental instruments which "come in the box of accessories": when the infant is delivered from "the manufacturer."

A similar insight into the fallacy of "sense-certainty" was expressed by the ancient Pythagoreans and Plato, as

4. Any deviation from that rule is "racism, *per se*," which is, in itself, the expression of an impulse tantamount, under natural law, to crimes against humanity.

5. I.e., both Plato's *Phaedo* and the treatment of *Phaedo* by Mendelssohn. This is also the method of Nicholas of Cusa, as in *De Docta Ignorantia*, his follower Leonardo da Vinci, Johannes Kepler, Pierre de Fermat, Gottfried Leibniz, and Bernhard Riemann.

6. Typically, mathematical formulations, such as mere statistics, are substituted for actual physical principles, and even for simple truth.

7. Kepler's reflection on the apparent role of the series of Platonic solids in locating the organization of the planetary orbits, led him, by aid of reflections on the preceding work of Nicholas of Cusa, Luca Pacioli, and Leonardo da Vinci, to recognize the composition of those Solar bodies then known to him as being an harmonic ordering. It was this recognition that led Kepler to his principled discovery, through recognition of the paradoxical juxtaposition of the assumptions of sight and the assumptions of harmonically ordered hearing.

8. As in the distinction of Max Planck's actual discovery from that positivists' perversion (e.g., Ernst Mach, et al.) known as "quantum mechanics."

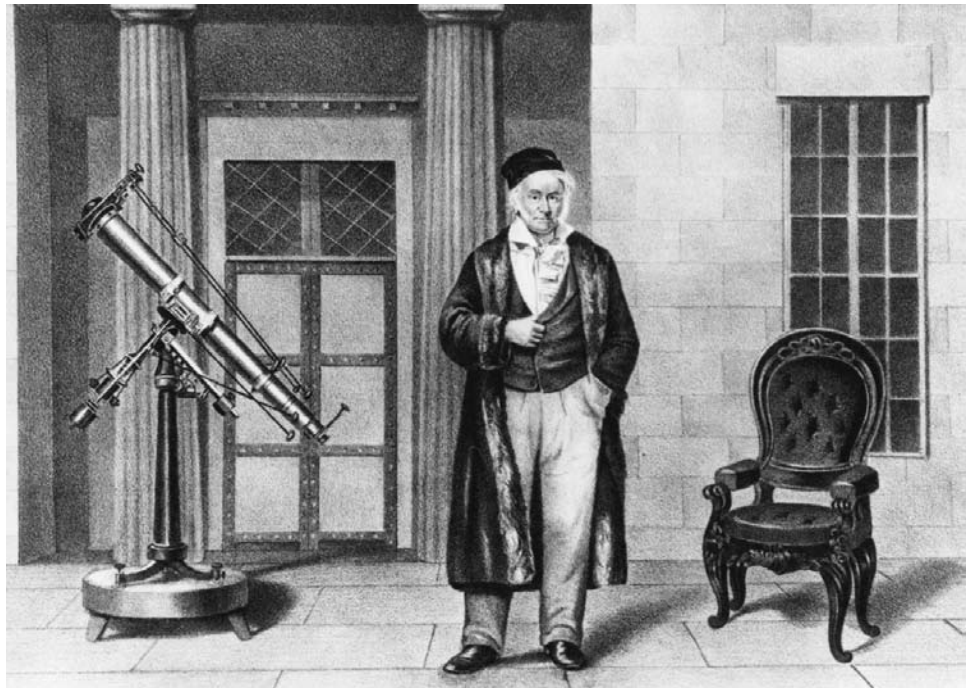
this was typified then in a crucial way by the construction of the doubling of the cube by Plato's friend from Italy, the Pythagorean Archytas. Similarly, the significance of Eratosthenes' praising that construction, was shown afresh through Europe's Eighteenth-Century conflict between the work of Gottfried Leibniz and the Anglo-Dutch Liberals (a.k.a. empiricists) Voltaire, Abraham de Moivre, D'Alembert, Leonhard Euler, and Euler's dupe, Joseph Lagrange.⁹ The modern history of that conflict begins with the Eighteenth-Century algebra of Ferro, Cardan, Ferrari, and Tartaglia, on the subject of quadratic, cubic, and bi-quadratic geometries, and continues through, and beyond, the work of Carl F. Gauss in such matters as the evolution of his treatment of his Fundamental Theorem of Algebra and related matters.

Gauss's Personal Situation

Carl Gauss suffered the misfortune of having come to maturity in the aftermath of the French Revolution, a time which Friedrich Schiller identified as expressing a lost, great moment of opportunity in history (the American Revolution and the great work of Abraham Kästner, Gotthold Lessing, Moses Mendelssohn, Gaspard Monge, Lazare Carnot, et al. as a moment which had fallen prey to "a little people." Thus, although Gauss's achievements themselves were to be essentially a continuation of the legacy of Cusa, Leonardo, Kepler, Fermat, and Leibniz, Gauss's professional career depended upon his avoiding the appearance of support for all things which might suggest indifference to the alleged genius of the hoaxster Galileo, Sir Isaac Newton, and of such Eighteenth-Century enemies of Leibniz and Leibniz's follower Abraham Kästner as Voltaire, de Moivre, D'Alembert, Euler, Lagrange, and their Nineteenth-Century successors such as Laplace, Cauchy, Clausius, Grassmann, and Kelvin.

Thus, once more, the early Nineteenth Century had

9. Lagrange, in the last years of his life, edified the tyrant Napoleon Bonaparte, an effort used by Napoleon to disperse the leaders of the Ecole Polytechnique into technical duties in the tyrant's military service. It was Laplace and Cauchy who destroyed the educational program of the Ecole, on orders from London.



Courtesy AIP Niels Bohr Library

"Gauss's intention," LaRouche writes, "however bounded by the ugly peer-review pressures of his time and place as a young adult, onward, is nevertheless to be seen as persistent in his effort to provide his more sensible readers crucial evidence leading them, hopefully, toward the relevant conclusions which Gauss dares not state explicitly." Here is Carl Gauss, with his telescope.

brought on a period in which the minds of most were blinded by sight.

Thus, when I first introduced the LYM's current "base-ment team" to the challenge of their present work (presently nearing completion) on the work of Gauss, I forewarned them, that, whereas Gauss's work is brilliant, and his post facto account of the discoveries plausible; such was the nature of his time, that his actual method of discovery was tucked, as in the case of his personal preference for non-Euclidean geometry, behind a protective screen of intellectual camouflage.

The implied duty laid upon him, or his successors, on account of that carefully crafted, protective screen, included the complementary obligation to uncover what lay, awaiting today's attention, behind the camouflage imposed by those hoaxsters who represented the reputed embodiment of the alien, Newtonian tyrant. However, today, the present result of adopting that implied mission, is, that, to the degree Gauss's discoveries are now being presented as finished reports from the standpoint of Bernhard Riemann's frankness in this matter, the results, thus far, are, increasingly, most agreeable.

Thus, the true genius of Carl Gauss could be recognized by students today, only when the fact is considered, that much of what Bernhard Riemann said and wrote, was indebted to what Gauss, in his adult years, rarely dared to say publicly. Therefore, to really understand Gauss, it is necessary to know Riemann, and then to see how much of Riemann's wonderful work, his habilitation dissertation and beyond, had been made



European science emerged from the navigational systems of the ancient, seafaring maritime cultures, i.e., Sphaerics: The settlement of Sumer and its culture, is indicative. Shown, a 13th Century B.C. Sumerian Ziggurat, which served as an astronomical observatory, near Susa, in today's Iran.

possible by what Riemann recognized as having been lurking within the shadows of what Gauss had permitted himself to say.

Gauss's repeated treatments of the subject of his doctoral dissertation, on the subject of The Fundamental Theorem of Algebra (as complemented by the related paper on the law of quadratic reciprocity), are to be recognized as a recurring theme in much of the span of Riemann's work.¹⁰

2. The Infinitesimal

That much said thus far: shift the choice of subsuming topic, back from the account of Gauss's role as such, to the *ontological* implications of *insight per se*—the point of reference, the *ontological standpoint*, at which Gauss's published accounts of his discoveries, are, for reasons noted above, often met at their relatively weakest expression. Gauss's recurring, fresh treatment of the subject of his first three statements of what he would come to call his "Fundamental Theorem of Algebra," and the intimately related, higher subject of "the law of quadratic reciprocity," is typical.

Nonetheless, Gauss's intention, however bounded by the ugly peer-review pressures of his time and place as a young adult, onward, is nevertheless to be seen as persistent in his

10. Gauss's Fundamental Theorem was first presented in 1799, uttered as a direct rebuttal of Euler's 1760 publication on that subject and the closely related matter of the law of quadratic reciprocity. In all of his published work on this subject, the underlying theme which Gauss references, but does not state explicitly, is the Leibniz notion of the *ontologically* infinitesimal, a connection made implicitly clear in Gauss's work.

effort to provide his more sensible readers crucial evidence leading them, hopefully, toward the relevant conclusions which Gauss dares not state explicitly.¹¹ Once Riemann's 1854 habilitation dissertation and his treatment of Abelian functions are taken into account, and the preceding writings of Gauss viewed from this standpoint, the debated matter of Gauss's *ontological* intention, contrary to D'Alembert, Leonhard Euler, and the crooked British imperial assets Laplace and Cauchy, et al., should be clear to any qualified student of such matters.¹²

Gauss's treatments of the subject of the Fundamental Theorem of Algebra and its crucial, correlated reflection of that "Theorem," as reflected in what he defines as a "law of quadratic reciprocity," point the alert student toward the ontological issue which he wishes to argue, but, considering the auspices, he dares not do

that *too* explicitly. *The often referenced parallel, related case of what is actually anti-Euclidean geometry, is to be considered in this light, as being a correlative of that view of the Fundamental Theorem.*

The relevant argument to that effect, is as follows.

Once we acknowledge, as the Pythagoreans and Plato already knew, that the objects of sense-certainty are never better than shadows cast by an unsensed, but nonetheless efficient reality, and, when the same matter is then reviewed from the standpoint of Riemann's work, the issues are much clearer.

The crucial point, as I have repeatedly emphasized in earlier locations, is the fact that the enemy of Leibniz, of Gauss, of Riemann, et al., in science, has been the pack of hoaxsters typified by the Eighteenth-Century Liberals such as Antonio Conti, Voltaire, de Moivre, D'Alembert, Leonhard Euler, and

11. See Bernhard Riemann, *Über die Hypothesen. Welche der Geometrie zu Grunde liegen* (New York: Dover reprint edition, 1953): Sections numbered I. (Begriff einer n -fach ausgedehnten Grösse), p. 273, and II. Massverhältnisse, deren eine Mannigfaltigkeit von n Dimensionen fähig ist...), p. 276.

12. With the defeat of the Emperor Napoleon Bonaparte, the French intention of electing Lazare Carnot President of a French Republic was defeated by action of the relevant British occupation authority, the Duke of Wellington, sticking a wretched Bourbon on a London-controlled French throne. Under this British reign over occupied France, the scoundrels Laplace and Cauchy were installed to uproot the educational program of the Ecole Polytechnique's Gaspard Monge. Monge was dumped, and his associate Lazare Carnot went to die as an exiled hero, in Magdeburg. The mental disease called positivism, thus grabbed control, but for a relatively few stubborn heroes, of the official French scientific intellect. Cauchy's role as a hoaxster, and plagiarist of the work of Abel, was finally exposed by examining Cauchy's post-mortem files. Carnot was a fellow member, with Alexander von Humboldt, of the Ecole.

Euler's dupe Joseph Lagrange. With that British victory over France which Britain secured through, successively, the siege of the Bastille, the French Terror, Napoleon Bonaparte's reign, and the British monarchy's triumph at the Congress of Vienna, young Gauss had now entered the Nineteenth Century, entering a world in which official science was oppressed by the top-down enforcement of that moral, intellectual corruption known as the Liberalism of Euler and Euler's followers.

If we, then, take into account the specific issues of scientific method posed, still today, by that same Liberal political corruption, of the reigning official opinion in science of that time, and ours, too, we are enabled to distinguish what Gauss clearly intended, from what the same fear of reactions by powerful adversaries prevented him from stating clearly, as was the case in his suppression of reports of his own discoveries in anti-Euclidean geometry. To present this case, it is necessary to restate here the related point made in locations published by me earlier.

The Roots of Science

When we trace the history of European science from its roots, in *Sphaerics*, from the ancient maritime culture which settled Egyptian civilization (including that, notably, of Cyrenaica), we must recognize what can be competently termed "science" as being rooted essentially in the development of the navigational systems of the ancient, seafaring maritime cultures of the great periods of glaciation, rather than such silly, but popular academic myths as attempting to trace civilization from "riparian" cultures as such. It was the observation of both seemingly regular and anti-entropic cycles in the planetary-stellar system, which is the only supportable basis for the notion of "universal," as that term could be properly employed for grounding the notion of science *per se* today.

The case of the settlement of Sumer and its culture, from the sea, by a non-Semitic people's sea-going, Indian Ocean culture's colonizing of southerly Mesopotamia, is indicative.¹³ In any case, the very idea of science would have no secured basis in knowledge unless very long spans of ocean-going maritime cultures were taken into account for crucially relevant features of ancient calendars.

In short, the notion of *universal*, which does not exist as a functional conception in Liberalism, is the essence of any competent effort at developing actual scientific knowledge. Only long-ranging ancient maritime cultures could have been impelled to produce the elementary considerations underlying the *Sphaerics* from which all of competent strains in Eu-

ropean, or other science has been derived. The idea of a universal physical principle, on which all competent science is premised, could not come into existence for mankind in any other way, unless we were to presume the source of this opinion to be, arbitrarily, colonists arriving from "outer space." I emphasize, that the true concept of *universal*, does not actually exist as a scientific conception within the bounds of empiricism or its spin-offs.

What we know with certainty, respecting contrary views on the possibility of the existence of a practice of science, is that the contrary views are all either implicitly "malthusian," or are products of a type of culture, such as the typical "oligarchical model," congruent with malthusianism. I emphasize, that all such latter types known to us generally now, belong to a category known to ancient through modern European cultures as "the oligarchical model," a model to be recognized as being congruent with Aeschylus' representation of the Satanic-like figure of that Delphic Olympian Zeus. This was the Zeus, who, in Aeschylus' account, banned the knowledge of science (e.g., "fire") from the minds of those mortal men and women such as Lycurgan Sparta's helots, the lower, subjugated social classes.

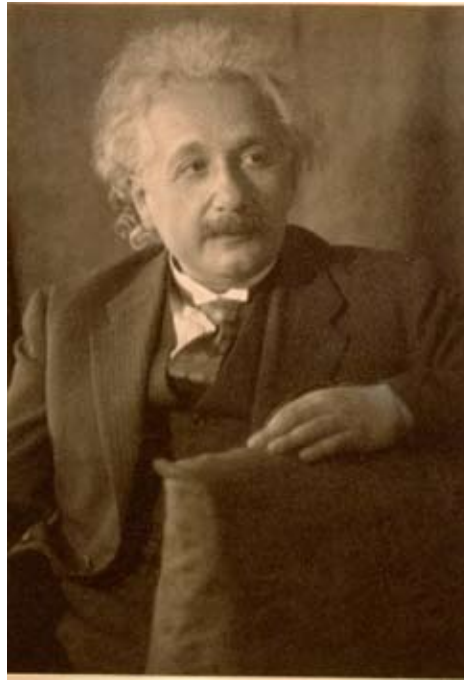
It is to be emphasized now, as we contemplate the global wave of mass-starvation which has been caused by the spread of the mass-murderous, neo-Malthusian model of that British lackey otherwise known as former Vice-President Al Gore, that virtually all of the great crises of known civilizations have been the result of those same policies of practice which are fairly identified as pro-Satanic attempts to ban scientific knowledge and its practice from the great majority of the world's human populations.¹⁴ Such has been the accelerating decline of the physical economy of the U.S.A., per capita and per square kilometer, since the terrible developments and aftermath of 1968.¹⁵

The upshot of that line of inquiry, is that we exist within a stellar universe which is governed by what Albert Einstein, for example, emphasized as being *universal physical principles of change*. These principles are presented to us in this capacity, as they were to long-ranging ancient maritime cul-

14. Former U.S. Vice-President Al Gore, a British agent against the U.S.A.'s American System of political-economy, who walks in the footsteps of the de facto traitor to the U.S.A., and sometime U.S. Vice-President Aaron Burr, is a typical advocate of the "oligarchical model." President Andrew Jackson of "Trail of Tears" notoriety, had been an accomplice of Burr's anti-U.S. conspiracy, and had served as U.S. President as a lackey and accomplice of Land-Bank swindler and later U.S. President Martin van Buren.

15. It is not merely the actions of the trans-Atlantic "sixty-eighters" and the U.S. Richard Nixon Administration which have caused the pattern of accelerating physical decline of the economies of the Americas and Europe since 1968. Trends do not perpetuate themselves, except as the relevant trend takes life, as a form of "tradition," within the culture of those who are shaping the policy-making proclivities of the society. To free the U.S.A., in particular, from the grip of forty years of self-destruction, we must free control over our society's policy-shaping from the hands and minds of those who embody the "68ers" tradition.

13. Suspected to have been an offshoot of a maritime culture of the Dravidian, or closely related language-group. Herodotus indicates a kindred maritime-cultural origin for Ethiopia. So, Bal Gangadhar Tilak back-traced the origins of Sanskrit to a colonization, across land, from the north coast of Siberia, through mid-Asia, into Iran and northern India (*Orion*, and *Arctic Home in the Vedas*).



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The power of insight, as expressed in the discoveries of Albert Einstein (right), following in the footsteps of the great Johannes Kepler (left), "is, manifestly, uniquely specific to the human species, that we are enabled to adduce the eternal motion of that great unseen entity which has left those footprints upon our heavens."

tures, presented so in their astronomical expression, as *a combination of both ostensibly regular and anti-entropic universal physical principles of change*. Some cycles, such as the equinoctial cycle, are long-ranging, and may appear to be fixed. However, contrary to the neo-Aristotelean fraudster Claudius Ptolemy, and to Clausius, Grassmann, and Kelvin, the universe is not, ontologically, a domain of cycles of repeatedly fixed no-change: the universe is essentially anti-entropic.

In the latter case, that universe of change, the universe is finite, but anti-entropic, in the respect that nothing exists outside it. Thus, rather than the foolishness of a ignorant believer's assumption of an Euclidean or Cartesian, limitless space, the universe is not Euclidean, nor Cartesian, but a *dynamic* system in the sense of *dynamic* employed by the ancient Pythagoreans and Plato, or such as Leibniz, Riemann, Max Planck, and Einstein, in modern science. This notion of a physically efficient universality which I have just presented here so, is, as Albert Einstein emphasized, indispensable for modern universal science; without this notion, no competent notion of the work of Kepler, Fermat, Leibniz, Gauss, or Riemann can be reached.

This notion which I have just so emphasized, is crucial for understanding the great Nineteenth-Century crisis in science which Gauss and Riemann addressed. The interwoven conceptions of a "Fundamental Theorem of Algebra" and "law of quadratic reciprocity" in the work of Gauss, are typical of this. Riemann's remedy for what is lacking in the work of Gauss, addresses precisely this conceptual problem, a problem which continues to underlie not only the ongoing essential work of all modern science, but the systemically dy-

namic form of social crisis menacing the very existence of world society today.

Our Universe

That aspect of the efficiently existing universe which is accessible to our sense-perceptual powers, is the passing *footprints* of those powers which generate such shadows themselves. As Albert Einstein made this point in his own fashion, it is through the relevant power of *insight*, like that of Kepler's uniquely original discovery of universal gravitation, which is, manifestly, uniquely specific to the human species, that we are enabled to adduce *the eternal motion* of that great unseen entity which has left those footprints upon our heavens. Such is the implication of Riemannian dynamics, as also that of Leibniz before him.

As emphasized here earlier, the fact that the organization of the Solar System is fairly regarded as in conformity with Kepler's harmonic approximation, as Albert Einstein emphasized the principle involved, defines a universe which is *ontologically finite*. That is to say, that principles, such as the principle of gravitation as discovered by Kepler, principles which envelop our universe, are discoverable, and provable, only through the kind of method of *dynamics* which Gottfried Leibniz revived from the earlier discoveries of the Pythagoreans and Plato. We owe comprehension of the implications of that fact, as Albert Einstein emphasized, chiefly to the work of Johannes Kepler and Bernhard Riemann. However, that discovery had already been made implicitly by Cardinal Nicholas of Cusa, in such among his works as the seminal *De Docta Ignorantia*, but it had also been known, earlier, by the Pythagoreans and Plato.

To restate this same point: the principled form of action which is expressed to our senses as a predicate of universal principles, is the universal principle on which all manifest forms of apparently principled actions depend for their expression. The universe of experience is defined, thus, as Einstein defined it, as self-bounded. Thus, it is a finite universe in that sense, but without any external boundary but the principle of anti-entropic, creative powers associated with the notion of a Universal Creator.

The human faculty upon which such higher-ranking knowledge of that higher, efficiently necessary existence depends, is the object of *insight* in the fullest sense of Plato's presentation of that notion. Thus, all competent modern science depends upon the view of this matter by Nicholas of Cusa.

To summarize that point: the notion of an ontologically existing universe, as opposed to some Euclidean or kindred sort of Sophist's fantasy, depends upon the notion of universal lawfulness, as Einstein's view of Kepler's work illustrates the crucial point of all this present discussion.

To illustrate that point, take the case of the history of the modern European discussion which led into Gauss's first statement of what was to become known as his view of the challenge of the Fundamental Theorem of Algebra. Go back to the previously referenced, Sixteenth-Century treatment of the subject of the relations among quadratic, cubic, and biquadratic residues, as by Cardan et al.

The ontological implications of this Sixteenth-Century treatment of those matters must be considered against the background of Archytas' duplication of the cube. Against that historical background of *Sphaerics*, the principled nature of the systemic fallacy of the method employed by Cardan et al. should have been obvious. What should have been the obvious remedy for that had been supplied, during the Fifteenth Century by the work of Filippo Brunelleschi,¹⁶ Nicholas of Cusa, and Luca Pacioli, as also by the surviving known fragments of the work of Leonardo da Vinci. In brief, the necessary approach would have been the same concept of *physical geometry* on which I had insisted during my adolescence, or, much more appropriately, Riemannian physical geometry, rather than the ivory-tower formalities of an implicitly pro-Euclidean algebra.

In other words, when the empiricist followers of Descartes and Antonio Conti employed the fallacy of the hoaxsters de Moivre and D'Alembert, in crafting the hoax of so-called "imaginary numbers" for the fraudulent attack on Leibniz by themselves, Leonhard Euler, et al., they were not merely constructing a fraud against physical science. They were behaving as a-priorist incompetents in refusing to grasp the readily accessible, *physical-geometry* implications of the

uniqueness of Archytas' method for constructing a *process* of duplication of the cube, rather than the intrinsically incompetent. Sophist method of Aristotle, Euclid, and Claudius Ptolemy.

Admittedly, this erroneous presumption reflected a crucial oversight which had been made by the Sixteenth-Century set of Cardan et al., prior to the experimentally crucial discovery of least action by Pierre de Fermat. However, the discoveries by Kepler and Fermat were an integral feature of both the uniquely original discovery of the calculus (ca. 1676) by Leibniz, but, more emphatically, Leibniz's taking into account the crucial principle of Fermat in Leibniz's own crafting, in collaboration with Jean Bernoulli, of the concept of a universal physical principle of least action.

This "imaginary number" fraud by de Moivre, D'Alembert, Euler, et al., was not merely a reflection of their apparent ignorance of elementary principles of physical geometry known since no later than Archytas and Eratosthenes. It was to be seen as an echo of the "malthusian" oligarchical-model hoax expressed by the Olympian Zeus of Aeschylus' *Prometheus Trilogy*.

When that aspect of the matter is taken into account, the difficulty which threatened Carl Gauss in the matter of the Fundamental Theorem of Algebra, ought to become transparent. Gauss's third statement of that case ought to have made it clear, retrospectively, to all modern mathematical physicists re-considering Gauss's proof, once the publication of Riemann's habilitation dissertation had made clear the essential issue lurking in the shadows of Gauss's own argument.

From the appearance of Riemann's habilitation dissertation and his Theory of Abelian Functions, onward, the deeper implications of the history of modern science since Nicholas of Cusa's *De Docta Ignorantia* should have been clear, as Albert Einstein located the root of competent modern physical science in those methods which Kepler had attributed to Cusa's work, the work which, chiefly, founded competent forms of modern European science.

Such is the nature of true *insight*.

3. Insight Reviewed

At the close of July 2007, the world as a whole entered a phase-shift into chronic hyperinflation, into what has been, ever since that date, a general breakdown-crisis of the present world system as a whole. Since that time, the entire world's presently existing, post-August 1971 monetary-financial system, has been doomed to its extinction, in one way, or another. There are alternatives, but these mean abandoning what has become the 1971-2008 world monetary-financial system. It means putting the present system under a juridical system of reorganization-in-bankruptcy, and replacing it with an echo of the principles and intentions of President Franklin Roosevelt's policy for a Bretton Woods world monetary system free of

16. As in Brunelleschi's employment of the catenary as a principle of physical geometry which had been the required principle of design for the construction of the cupola of Santa Maria del Fiore.



Filippo Brunelleschi (1377-1446) employed the catenary as a principle of physical geometry, for the construction of the cupola of Santa Maria del Fiore, in Florence, Italy. His statue is located within sight of the great dome.

those vestiges of British imperialism which, unfortunately, reign, and ruin us all, still today.

It is important to recognize that we are obliged to use that term, “British Imperialism,” because that is the name by which it goes. The content of what that term connotes, is an international financial tyranny whose appropriate technical term of description is Anglo-Dutch Liberalism, which means the present form of organization of a network of financier and closely associated interests which was built up in northern maritime Europe by Venice’s Paolo Sarpi and his followers. “British” in “British Imperialism” marks that empire-in-fact, the leading single imperial power in the world today (since the 1971-1972 be-

trayal of the U.S.A. by the Administration of President Richard Nixon), which had first been established as the imperial power of a private company, the the British East India Company through the implications of the Paris Peace of February 1763.

Such is the great challenge to the creative powers of the members of mankind today.

Thus, on July 25th, I spoke: “...this occurs at a time when the world monetary system is now currently in the process of disintegrating. There’s nothing mysterious about this; I’ve talked about it for some time; it’s been in progress, it’s not abating. What’s listed as stock values and market values in the financial markets internationally is bunk! These are purely fictitious beliefs. There *is* no truth to it; the fakery is enormous. There is no possibility of a non-collapse of the present financial system—none! It’s finished, *now*! The present financial system cannot continue to exist *under any circumstances, under any Presidency, under any leadership, or under any leadership of nations*. Only a fundamental and *sudden change* in the world monetary-financial system will prevent a general, immediate, chain-reaction type of collapse. At what speed we do not know, but it will go on, and it will be *unstoppable*! And the longer it goes on before coming to an end, the worse things will get. And there is no one

in the present institutions of government who is competent to deal with this. The Congress—the Senate and the House of Representatives—is not currently competent to deal with this. And if the Congress goes on recess, *and leaves Cheney free*, then you might be kissing the United States and much more good-bye by September.

“This is the month of August; it’s the anniversary of August 1914. It’s the anniversary of August 1939. The condition now is worse, objectively, than on either of those two occasions. Either we can make a fundamental change in the policies of the United States now, or you may be kissing civilization good-bye for some time to come....”¹⁷



17. From the original transcript of my remarks on that occasion. (For the complete transcript of LaRouche’s July 25, 2007 webcast, see *EIR*, Aug. 3, 2007.)

The Individual in History

As I have said repeatedly, of late, *the history of mankind is not event-driven; it is man-driven. The most essential decisions which drive the actually crucial changes in the course of history have often been what was deemed impossible by conventional opinion-makers earlier.* It is not what happened in yesterday's usually fraudulent leading press reports which drives history; it is men or women of a special kind of influence, such as our Benjamin Franklin, or the great historian and dramatist Friedrich Schiller, who choose to lead nations in one direction or another. It is rarely a matter of choosing from among multiple choices on the table; the most momentous turns in history have been the changes, changes made by the initiative of a seemingly tiny minority, changes like the founding of our Constitutional republic which had seemed, in July 1776, to the world at large, not merely impossible, but an ill-fated conceit of a few.

The greatest decisions in history are made by men or women, as individuals, decisions which have seemed virtually impossible to conventional institutions and public opinion even a relatively short time before. All great turns in history of that quality come as the unique innovation in thought and will by relatively rare individuals. So, President Abraham Lincoln saved our republic, virtually despite itself; so, the greatest poets and scientists did what no one else had dreamed before.

The greatest of all such deeds occur in such times as those of which the great English Classical poet, Percy Bysshe Shelley wrote in his *In Defence of Poetry*. There are times when much of a people is overcome by a marvelous increase in the power of imparting and receiving profound and impassioned conceptions of man and nature, as by the inspiration of the then already deceased Friedrich Schiller in calling forth the great initiative of the German people led by Scharnhorst in organizing, according to the principle of strategy defined by Schiller's studies of the religious wars in the Netherlands and the Thirty Years War, to accomplish the otherwise seemingly impossible defeat of the tyrant Napoleon Bonaparte in Russia and in that tyrant's desperate effort to return to France to raise a new army and a new general war.

So, a Genoese sea-captain working in the service of Portugal, the greatly talented and inspired Christopher Columbus, was led by his continuing study of the testament of the founder of modern science, Cardinal Nicholas of Cusa, one of the greatest geniuses of all modern history, to devise a plan for realizing Cusa's program, for great strategic voyages across the great oceans, to rescue a corrupted European culture by extending its reach to distant lands. This was Cusa's intention, as actually adopted, with full consciousness of that intention, by Columbus from about 1480 onward, which created the Americas, and brought about that subsequent colonization of New England which gave birth to what became our United States.

This was the object of the actual founding of our republic,



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The Genoese sea-captain Christopher Columbus, working in the service of Portugal, devised a plan for realizing the program of Nicholas of Cusa, for great strategic voyages across the oceans, to rescue a corrupted European culture, in what eventually became the founding of our United States.

the U.S.A., whose morality was defined, first, by the crucial passage of a work denouncing the evil slaver John Locke, the passage, "the pursuit of happiness," from Gottfried Leibniz's *New Essays on Human Understanding*, which is the core principle of our Declaration of Independence and the root of the principle of moral law of our republic which is elaborated, as in the spirit of the Peace of Westphalia, as also reflected in the great Platonic and Christian principle of *agapē*, in the Preamble of our Federal Constitution.

Thus, the true history of mankind is only that which is defined by the actuality of the perfectly sovereign creative powers which can be expressed only by the individual creative personality. These are the same creative powers, unique to sovereign individual minds, which are expressed by uniquely great discoveries of scientific principle, as by the Pythagoreans, Plato, Cusa, Kepler, and Leibniz, or Classical qualities of artistic principle, such as those of Friedrich Schiller, or the combination of initiatives rooted in a concurrence of scientific craft and moral inspiration in the achievement of Christopher Columbus.

The contrary implication to be considered, against that background, is that the chief source of the ugliest failures of humanity is a certain kind of popularized stupidity of the type demanded by the Olympian Zeus of Aeschylus' *Prometheus Bound*, as demanded by the creature of the British Foreign Office's Jeremy Bentham, Thomas Malthus, or as the lame-brained perversions uttered by that pathetic puppet known as the incumbent President of our U.S.A. Popular opinion, such as that induced by our presently, inherently corrupt and lying major news media, is the deadliest of the Trojan Horses inserted into the domains of mankind today.

In that sense, the issue of the development of the creative powers of the individual young member of society is, in the final analysis, the most crucial political, and also moral issue of the existing cultures of this planet, most notably our presently dumbed-down, Boomer-ridden U.S.A. Our present educational systems have assisted greatly in making our people stupid enough to be influenced by the opinions uttered by the proverbial "paid prostitutes" of our presently popular "yellow" press.

The Relevant Paradox

The power of creativity, as I have presented the case summarily in the preceding chapters here, is, as I have already emphasized, not only a built-in natural potential of the human individual, a potential absent in all animal species; it is unique to all persons who are not victims of relevant damage to their potential range of human powers. In broad terms, therefore, every individual should be developed as a truly creative personality.

As the case may be, as cows do not make for intelligent citizens, it is wrong to attempt to train people to become cows, as the latter has been done, in effect, to most of the human population in most known cultures to present date. The subject, therefore, is, once more, the case of the suppression of knowledge of "fire" by order of the archetypical Malthusian (or, present-day Malthusian and lying former Vice-President Al Gore). Only under artificial conditions such as those prescribed by Britain's leading anti-humanist, the World Wildlife Fund's Prince Philip, is the natural, human intellectual potential of the person suppressed in ways—pro-Malthusian ways—which turn children into the virtually half-witted cattle of today's neo-Malthusian movements.

Consider what caused the legendary Olympian Zeus to cook up this anti-human role of "environmentalism." There are two, complementary motives.

First, actually creative and brave people will not willingly submit to either a legendary Olympian Zeus, or a Prince Philip or Al Gore. Second, since mankind's creativity is typically expressed through its realization as scientific and related progress in developing prevalent human conditions, the continuation of the progress which man's true nature demands, "uses up natural resources" in ways which only the natural advances

in the science-driven and related creative productive powers of mankind could remedy.

On the latter account, of the Earth's total mass, the portion corresponding of pre-biotic masses is shrinking as a percentile relative to the product of living processes, while the rate of increase of the portion of the mass *generated* by human activity is increasing, relative to both abiotic residues and residues of other kinds of living processes.

Thus, to keep large populations sufficiently stupefied to be reigned over by the tyrannical likes of the Olympian Zeus, it is necessary (for the sake of that tyranny) to keep subject populations as stupid as possible, and, therefore, to prevent actual increases in the productive powers of human labor, or, even, as has been done in the U.S.A., and in western and central Europe since 1989, to reverse previous economic progress absolutely.¹⁸

For that reason, nominal American citizens such as former Vice-President (and traitor) Aaron Burr and former Vice-President-turned-British-lackey Al Gore do not like honest patriots of our U.S.A. very much.

However, on the opposite side of that matter, the potential for developing true scientific creativity, and also artistic creativity in the individual member of society, is there. It exists, and can be promoted, if we come to understand this subject-matter, and are willing to make its achievement the essential goal for the development of our future individual citizen.

My own dedication to that mission is multifarious; but, my most essential, relevant skill is in the field of those expressions of physical-scientific creativity which are coincident with my special competence in the domain of physical economy. To this end, I have promoted an approach to the students' replication of the development of the principal valid currents of physical science, ranging, explicitly, and most typically, from the Pythagoreans and Plato through Cusa, Leonardo, Kepler, Fermat, Leibniz, Gauss, the Monge-Carnot phase of the Ecole Polytechnique, Dirichlet, and Riemann. Those who work in relevant forms of teams, to relive the acts of discovery which are most relevant for re-experiencing first-hand knowledge of the most-relevant discoveries, can generally succeed in one significant degree or another.

With great science and great Classical art, combined, we can generate among us new generations sharing the quality of temperament we should require for those generations of our new citizens. The benefit would be, not only skills, but the fostering of the truly creative powers of the human mind, upon which progress depends.

Best of all, once one knows that expressed quality of potential in oneself, which distinguishes one from an ape, or brutalized slave, insight comes naturally, because it is natural, for as long as people are developed for what the human individual is, and is intended to become.

18. As in the pattern set by the predatory, dictatorial, Thatcher-Mitterrand "conditionalities" imposed upon Germany.