

THE ESCAPE FROM HILBERT'S "ZETA" "X":

Mapping the Cosmos!

by Lyndon H. LaRouche, Jr.

March 4, 2010

There is a certain tendency which is, unfortunately, typical of modern classroom and related mathematics. This involves a trait which is likely to be noticed for its frequent occurrence among otherwise presumptively qualified secondary and university students and graduates. It is an acquired mental disorder known as "positivism," a type of disorder expressed as a viciously systemic form of reductionism, notoriously common to certain types of university professors and their students.

It is occasionally appropriate to attack the symptoms of that mental disorder simply because it is a mental disorder with relevant practical implications for an individual person, or society generally. It becomes necessary to do so when the effect of the subject's mental disorder is a policy which is a specific threat of some kind to the welfare of mankind, as in this present report, on the subject of what is fairly identified as "positivism."

Positivism as such, is a mental problem whose common habitat includes "science departments" of secondary and university classrooms. In globally extended European cultures, it is usually associated with the virtually hereditary influence, directly or indirectly, of Aristotle's role in promoting the diseased mental condition often known as Euclidean geometry, or, under

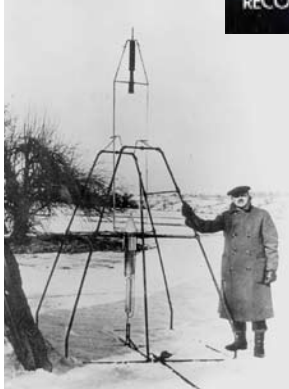
a broader label, the "positivist" dogma asserted by Paolo Sarpi and the modern representatives of his following. The latter phenomenon is most conveniently illustrated by the famous case of David Hilbert's celebrated package of twenty-three problems of mathematical formalism.

Here, I attack the problem of that clinical disorder from the clinical vantage-point of Bernhard Riemann's habilitation dissertation.¹

The influence of the program of Hilbert and other modern positivists, has tended to encourage results which have often impaired, and even reversed mankind's attempts at scientific progress. For precisely that reason, the time has now come for us, thus, to expose and to eliminate the pathological influence of positivist

1. Cf. Lyndon H. LaRouche, Jr., **Evil, Wicked & Stupid**, EIR March 6, 2010, *passim*. My systematic studies of this phenomenon included investigations into the matter from the standpoint of behavioral problems common to management consulting personnel, in an investigation conducted during the 1957-1962 interval. Cf. Lawrence S. Kubie **The Neurotic Distortion of the Creative Process** (Lawrence, 1958) and "The Fostering of Scientific Creative Productivity" (**Daedalus**, Spring, 1962). In an early 1970s exchange on my view of this matter between Dr. Kubie and an associate of mine, Kubie emphasized that he regarded human creativity as inherently a quality of good in its own right. Although my studies of creativity as such date from my adventures with formal geometry from the mid-1930s, my professional approach to the subject dates from the late 1950s, in the course of which I found Kubie's view on this matter to be significant.

German space pioneer Hermann Oberth (1894-1989) was the science advisor for Fritz Lang's 1929 film, "Frau im Mond" ("Woman in the Moon"), which introduced world audiences to concepts of space travel.



American physicist Dr. Robert Goddard (1882-1945), with Germany's Oberth and the U.S.S.R.'s Konstantin Tsiolkovsky, are considered the three "fathers" of space travel.



Dr. Hermann Oberth at the museum in his honor in Feucht, Germany. After World War II, he joined the U.S. rocket team in Huntsville, Ala.



"The launching of the space program in 1920s Germany, and the renewal of that as post-World War II science-driver policies of both the U.S.A. and the Soviet Union, now supersedes the succession of the precedents of Charlemagne's waterways and the world's transcontinental railway programs."



A Soviet technician fine-tunes the Sputnik satellite prior to liftoff.

The Soviet launch of Sputnik, mankind's first orbiting spacecraft, on Oct. 4, 1957, caused an uproar that extended throughout the Cold War.



Astronaut John Glenn, a few weeks before his liftoff (top, on Feb. 2, 1962). He was the first American to orbit the Earth.

thinking from the economic and related policy-making of nations.

On that account: the specific problem addressed here, is of the nature of a specific kind of barrier to progress in the domain of what is fairly identified here as “Cosmic Radiation.”

My subject here is the treatment of cosmic radiation as a matter of general economic policy.

FOREWORD:

On the Subject of “Cosmic Radiation”

Lately, the governments of the world on the whole, such as the present governments of western and central Europe, and the U.S.A., have been victims of a London-directed imperial reign of stupidity, or worse. Throughout European and extended history, reductionist cultural patterns in cultures, as in matters of physical science, have exerted a destructive form of long-term technological and comparable influences over the foreign and internal general policies of many nations, and of the day-to-day thinking of their populations.

For example, since the inauguration of the present reign of the British Empire’s Queen Elizabeth II and her consort, Prince Philip, and, also, the Netherlands monarchy’s associated, late Prince Bernhard, a certain strand of the long-term thinking of the trans-Atlantic nations, has been committed, as by those so-called “Bildbergers,” to carrying out a program of deep and global cuts in the ranks of the world’s population, an intention fairly labeled as “genocide.”

This promotion of royal genocide has been expressed in a program conceived in the image of the design of those policies by the late Bertrand Russell, and, then, led both by both Prince Philip and the now deceased Prince Bernhard. The pro-genocide policy of these and others has been presented as the World Wildlife Fund’s currently projected demand for a rapid collapse of the level of the world’s human population, from approximately 6.7 billions persons, to two, or less. That policy is typical of the same thinking as that of the evil Bertrand Russell on the same subject.

More or less global approaches to guided development, or destruction of the economic and related cultures of much of our planet, are not unusual in known world history. Contrary to such as Russell and Prince Philip, in a much earlier time in European history, the famous Charlemagne had crafted the foundations of

the notion of the modern sovereign nation-state. He expressed this in many ways, including the program of development of internal waterways of rivers and canals from the Pyrenees to the eastern borders of the realm. These measures under Charlemagne had had the included effect of increasing the potential population-density, and improvement of the standard of living in relevant parts of Europe. Some major features of Charlemagne’s program have survived in their role in Europe for more than a millennium, up to the present day.

Similarly, by the time of the role of our own John Quincy Adams as, first, Secretary of State, as, later, President, and, still later, until his death, a leading figure of the U.S. House of Representatives, Adams elaborated a policy of defining the United States as a republic whose borders are defined, fourfold, by the two great oceans, the border with Canada, and the border with Mexico. It was during that period, that the U.S. development of inland waterways provided the foundations for the development of a system of a national railway grid. This became the design for the transcontinental railway systems, whose design for rails echoed the principles of design of waterways systems built up under Charlemagne. This trend in the U.S.A. survived to become the model, about the time of the Philadelphia Centennial Exposition, for the development of both modern transcontinental and transnational railway systems within the continent of Europe, such as those of Germany and Russia.

In such fashions as that, the Eighteenth-century development of the steam-engine by the circles of Gottfried Leibniz, and also the activity in England, of Benjamin Franklin in guiding the launching of such industrial progress there, illustrates the same principle of policy-thinking trends often spanning a significant number of successive generations.

The case of the actual launching of the space program in 1920s Germany, and the renewal of that as post-World War II science-driver policies of both the U.S.A. and the Soviet Union, illustrate the same point. The space program first launched during the 1920s in Germany, now supersedes the succession of the precedents of Charlemagne’s waterways and transcontinental railway programs.

However, there have also been regional and global planning operations for the worse.

Illustrative of “worse,” is the case, that following the assassination of President William McKinley, with

the accession to reigning power by the rabidly anglophile U.S. President Theodore Roosevelt, the full development of the region between the fabled “twenty-inch rainfall line” and the western mountains was largely stopped, as British influences, including those operating from across the relevant Canadian border, exerted a significant degree of control over the policies of economic practice in the states in that region.

Now, my own association has developed a positive, implicitly global sort of long-range, science-driver outlook, an outlook rooted in earlier precedents, but with the qualitatively new features which inhere in the developments presented by what has come to be identified as our “basement team.”

Our own current outlook to that effect has been strongly affected by my own participation in what had become known as the Fusion Energy Foundation (FEF) of the 1970s and 1980s. This remained a source of inspiration within the precincts of public policies of a number of governments including that of the U.S.A., if only for a short time, prior to the installation of a person of a disposition starkly contrary to my own, Soviet President Yuri V. Andropov, and his notable successor, President Mikhail S. Gorbachov. Nonetheless, the fact remains, that the objectives for cooperation up until the suppression of that initiative, the efforts made on behalf of the ideas, embedded in the SDI program, for the cooperative development of science-driven conquest of the conditions of mankind generally, then, point the way still, to frontier technologies as the basis for peace across the borders of the former NATO divide, and have now set an example for a present effort to bring formerly estranged nations into a renewal of a space-based initiative as a step in that direction had already been accelerated by President John F. Kennedy’s combined opposition to entry into a Vietnam war and implicit in his Moon-landing perspective.²

Recently, the work of the “basement team” has brought us to the ante-room of a similar form of attempted cooperation, a general assault on the undevel-

oped borders of a subject bearing the name of “cosmic radiation.”

That new project has been prompted for our dedication today, in a significant degree, by the precedents of two among the greatest followers of the discoveries of Bernhard Riemann in science, Academician V.I. Vernadsky and Albert Einstein, all assisted by the collaborative outlooks among Einstein, Max Planck, and Wolfgang Köhler. It is also prompted by the urgency of this topical area of investigations for many reasons, not the least of which is the implications of the necessary consideration of such matters as relativistic modes of accelerated travel by human occupants of vehicles between Earth’s Moon and Mars. It is also a matter of many issues of the general notion of disease, the need for what might be termed neglected regions of the cosmos.

The key for the subject of a task-orientation for the mastery of the subject of “cosmic radiation,” is located within the definitions of Riemannian physics already tackled by Vernadsky and Einstein, most emphatically, as, similarly, by my established definition of the subject-matter of a science of physical economy. This is a subject-matter which reflects that same domain of Riemannian physics, that at a time when the presently on-rushing general economic breakdown-crisis of the planet, is already in progress. This scientific advance demands sweeping reforms in national economic policies, reforms which depend on following through on the pioneering by those scientific celebrities of the preceding century.

Riemann Against the Positivists

This proposition, being considered in the following pages, demands that we take action now, to assist in the success of such efforts to master the practical implications of cosmic radiation, both on Earth itself, and, more so across the reaches between Earth and Mars, and beyond that, now, by removing the obstacle to scientific progress represented, still today, by what errant mathematicians, such as by the late David Hilbert’s radically reductionist proposition presented to the problems of mathematics then, as still today.

The essential feature of Hilbert’s argument presents us with what should be considered as an artificial problem, much more than one inherent in competent scientific practice. Hilbert’s problem was, actually, one whose very existence can be demonstrated to be located as merely a product of an “ivory tower” variety of con-

2. It is true, that, up to the moment of the death of U.S. President Franklin D. Roosevelt, there was no prospect for a posture of warfare between the U.S.A. and the Soviet Union. That did not mean that diplomacy could get us out of the thermonuclear stand-off as easily as if the state of hostility had not been entered. Often the only road out of hostilities to peaceful collaboration, is through a difficult road to peaceful collaboration along a pathway of detente, as applies to the relations between Russia and China, on the one side, and the U.S.A. on the other, even presently.

ceit, a conceit whose subject lies in a fantasy-world outside the proper domain of physical science as such.³

To understand that “ivory tower” scheme presented by the arguments of Hilbert, et al., the apparent difficulty is to be recognized as being a kind of mental disorder specifically related to the domain of dogmatic, *a-priorist* arithmetization of **Euclid’s Elements**. The remedy for the delusion of Hilbert et al., is as Bernhard Riemann pointed to the nature of this systemic problem among mathematicians generally, as in his concluding sentence of his famous 1854 habilitation dissertation at Göttingen, and, as Riemann had already indicated thoughts in that direction in the two opening paragraphs of that same dissertation.

Out of care for precision, I present the literal German of Riemann’s own language in the relevant, deliciously precise, and yet also ironical concluding sentence of that habilitation paper, here, as follows:

“Es führt dies hinüber in das Gebiet einer andern Wissenschaft, in das Gebiet der Physik, welches wohl die Natur der heutigen Veranlassung nicht zu betreten erlaubt.”^{4,5}

The adducible implications of Riemann’s chuckle, as taken from any insightful reading of his 1854 *Habilitationsschrift* as a whole, should be sufficient to make his point. His point must be considered in light of subsequent scientific discoveries since that date, especially in the field of physical-relativistic treatments of the subject-matter of physical chemistry since the close of the Nineteenth Century, which provide the relevant setting for the initiation of the needed approach to the subject of cosmic radiation today.

A catastrophe akin to that intellectual and political catastrophe which Riemann references in the opening two paragraphs and in the concluding sentence of his habilitation dissertation, has reigned in the relevant malpractice represented by what is termed, euphemistically,

a “science” of prevalent political-economics today.

The systemic pathology of the typical positivist of today, is that he or she is, usually, essentially a nominalist of the type associated with the following of the notorious Paolo Sarpi. The followers of that Sarpi joined him in denying the existence of any knowable universal principles most vehemently; they permit no actual principles, but, therefore, rather mistake the mere name assigned to an object (a merely statistical, behaviorist phenomenon) for the object itself. (*Such is the intrinsic lunacy of the behaviorist’s notion of monetary values.*) On this account, the typical follower of Sarpi, sometimes named, as for the case of Adam Smith, a “Behaviorist,” proceeds, so, to seek to locate the subject of his passion in the manner of the bridegroom who mistook the person of his impassioned love, for the name assigned to the objectification of the mere object of the former passion itself, to alleged personal passions he had attributed to her given name: *he now says “Oh, how I hate the sound of that name!”*⁶

Among the most directly relevant, and simplest of the competent statements warning against the systemic fallacy of positivist arguments, is to be found as implicit in Albert Einstein’s included summary statement on the subject of Johannes Kepler’s discovery, as Kepler’s work had been presented in his **The Harmony of the Worlds**, showing the derivation of his own uniquely competent formulation for the principle of general gravitation.⁷ As Einstein summed up the matter: the universe defined implicitly by Kepler is *finite, but not bounded: only efficient universal principles exist*. In other words, the universe is inherently creative, anti-entropic.

As I shall formulate the case, later, in this report, Einstein’s summary statement points, appropriately, to the fact already implicitly encompassed by Bernhard Riemann’s 1854 habilitation dissertation, that competence of physical science already contains many valid principles of the mathematics defined by the problems of physical chemistry, such as cosmic radiation, but that relationship is not to be read the other way around. Good mathematics as such is never more than the imperfect

3. For thoughtful scientists, my selection of the example of Hilbert for this purpose should be obvious.

4. I have enjoyed the long-standing, very strong, nagging suspicion that, in composing that sentence, Riemann was parodying a famous, witty poem from Goethe, on the subject of the three Magi, rather than, of course, what would be an untimely reference to the same poem set to relevant song among Hugo Wolf’s “Goethe Lieder.”

5. In rough English translation: “This leads into another scientific domain, that of physics, which the quality of the present occasion [the subject of mathematics as such] does not permit us to enter.”

6. The relevant effect is a change of the title of the Schubert song, to “What is Sylvia...?”

7. The so-called Titius-Bode “law” was crafted in an attempt to avoid the proof that Kepler’s original estimates for the planetary orbits had been correct, thus seeking to avoid the evidence that the claims for Newton had been intrinsically incompetent, whereas Kepler had been correct.

Kepler on Aristotle

Johannes Kepler refuted Aristotle's geocentric cosmology, and charged that Aristotle held science back for nearly two millennia, until the advent of Copernicus, by rejecting the Pythagorean idea that the Earth moves in an orbit around the Sun. Here is an excerpt. Kepler's full document was published in 21st Century Science & Technology, Winter 2001-02.

I am as little satisfied with Aristotle, when he thinks it is sufficient to have asked why the Earth remains at the center of the world, and to answer, that nature assigned this position to it. For it is entirely uncertain, and not conceded by me, that the Earth is in the middle of the world; and were it so, it would be so indeed on account of nature, but in the same way that all things are on account of nature. But one is not satisfied to know that things are according to nature, but one asks why they are that way and not some other way, and what means nature used to bring this about. . . .



Johannes Kepler (1571-1630)

shadow sometimes cast by an unseen universal reality.

Therefore, to sum up the issue of Hilbert's case, as if in a single sentence we may say, that: *In the departments of science itself, as in the wrong-headed assertion by Göttingen's late David Hilbert on the subject of physical science, Hilbert, while obsessive in his own fashion, has been among the relatively cleanest, since he abhorred that bad lot typified by the pair of Bertrand Russell-trained fanatics, Norbert Wiener and John von Neumann whom Hilbert kicked out of Göttingen, reportedly on grounds of insufferable scientific incompetence.*

Generally, the mathematics departments' positivists working, still today, can all be fairly identified as in the Delphic tradition of that infamous Macedonian maker of poisons of sundry kinds, the he (*I shall refrain from insisting on "it"*) known as the ancient Aristotle, whose influence probably begat the Euclid who based a system on asserting, *a priori*, what he could not prove, and was never true.

Back then, during the lifetimes of the ancient Socrates, Archytas, and Plato, and before the rise of the

Delphic Aristotle, or the evil high priest Plutarch, the notion of a competent body of scientific practice, had been based on the foundation of a notion of universal physical principles, a set of principles which had been derived from the work of ancient trans-oceanic navigators who thought very much as Johannes Kepler was to have done later.⁸ This was to be recognized by modern science, first, in Kepler's discovery of the planetary orbits of Earth and Mars, and, then, later in his life, Kepler's uniquely original discovery of the general principle of gravitation on which all competent teaching of modern physical science is premised today.

In Real Science Today

Several centuries later than Johannes Kepler, Albert Einstein had summarized the outcome of Kepler's discovery of the general principle of Solar gravitation: Kepler had defined a universe which is finite, but not bounded, an anti-reductionist universe based on a uni-

8. For example, the Platonic equinoctial cycle of 25,000 years.

versal principle of anti-entropy.

Despite the celebrated Einstein's correct opposition to the pathological argument of the positivists, a quarrel which still resonates among relatively competent physicists to the present day, there is a contrary majority of opinion on this subject among relevant categories of academics, among those who reject, arbitrarily, both Kepler's uniquely proven discovery of the general principle of gravitation (and, such followers of Bernhard Riemann as Einstein and Vernadsky), as did reactionary reductionists of the type of the former Soviet figure A.I. Oparin in particular.

Where should we seek to find the absent proofs for the assertions allegedly supplied by those positivists, if, indeed, we could presume that such proofs ever existed at all? Speaking in terms of a competent physical science, rather than a mere mathematics, no competent sort of physical proof of the positivists' argument *has actually been, or should, or could have been* presented. The fallacy of their work is systemic. Their premise has been, essentially, the implied, *a-priorist* assertion: "This is what we (and perhaps, the high priests of a modern academic Babylon) have chosen to believe, today." On this point, fakers such as Paolo Sarpi and his followers, such as the hoaxster Abbé Antonio S. Conti and his virtual "Sancho Panza" Voltaire, have concurred.

Consequently, what David Hilbert had done from the closing moments of the Nineteenth Century onward, was to put forward a claim which was as much as just that, in his own fashion, in a 1900 Paris address to the Congress of Mathematicians. This was the occasion of the broad launching of his famous, but, later, essentially, systemically failed attempts to produce a defense of what was the intrinsically pathological, mathematical formalist's suppositions. The essential, subsuming supposition, was, that experimental physical science could be, *or even should be* superseded by what has been, implicitly, a merely neo-Euclidean form of mathematical "axiomatization" of physical science. The problem posed in this fashion, was not merely that his formulation was bad; the problem is, that his essential argument was intrinsically irrelevant, as being a proposition of a class of argument suited to a search for the correct choice of formula for breeding even Sun-spots from cucumbers.

The issue itself which Hilbert posed has little to do with his aptitudes as a formalist in mathematics as such; the real issue is one of physics, not mathematics. The



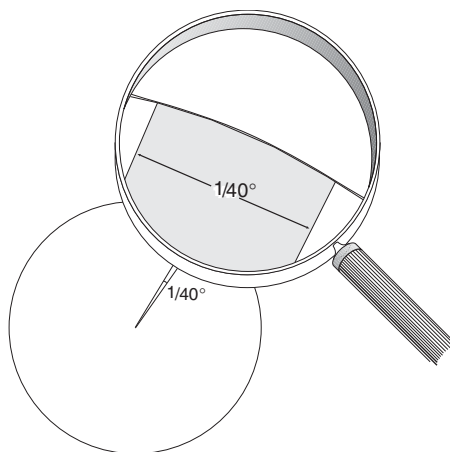
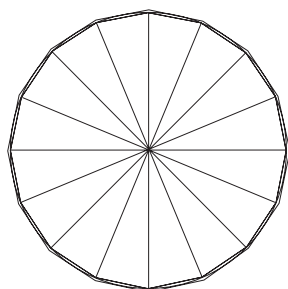
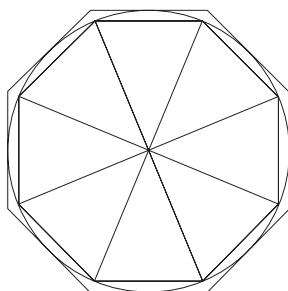
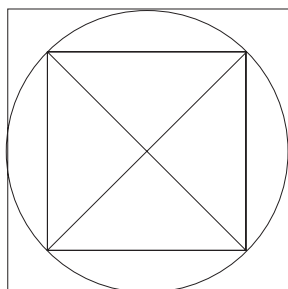
David Hilbert (1862-1943)

real problem does not lie within the abstractions of his formal mathematics as such, but in the incompetence of his choice of the subject, his adoption of a matter of mere mathematics used as a substitute for the practice of a competent physical chemistry. So, to the same effect, the real economic value, is not measured in money, but in the effect of production and consumption, combined, on the relative increase, or decrease of the physical productive powers of applied labor.

The essential form of the issue so posed, is the following.

The reductionist mathematician insists that a proposed universal principle must be qualified mathematically; the physicist, on the contrary, warns that no physical principle can be asserted as having been demonstrated by any other means than the equivalent of a collision among two or more principled types of crucial experiment, as this is typified by Johannes Kepler's generation of the notion of a universal principle of gravitation from a collision between two qualities of sense-perception: the evidence of sight versus the evidence of harmonics. Competent mathematics is created, and subsumed by physics, such as the physics of Twentieth-century physical chemistry of such followers of Bernhard Riemann as Dmitri Mendeleyev, Max

FIGURE 1

Quadrature of the Circle

Nicholas of Cusa (right) showed that Archimedes' (left) attempt at "quadrature of the circle"—to approximate the value of π —was ontologically incompetent. The first three drawings show the process of estimating the area of a square approximately equal to that of a given circle, as the average area of two regular polygons. In the last drawing, although the inscribed polygon may seem to closely approximate a circle in area, it actually contains a devastating paradox. The more the polygon "looks like" a circle, the larger is the number of its sides—i.e., the less it partakes of circularity

Planck, William Draper Harkins, Albert Einstein, and Academician V.I. Vernadsky. The mathematicians such as Hilbert have written science "bass backwards."

Therefore, it should be accessibly clear on this account, that it is not some calculation in Hilbert's formal mathematics itself which was the source of his error, but, rather, the misguided reliance on mere mathematics. To attack his mathematics as such, would be a rather silly mistake, since it was Hilbert's lack of regard for a competent physics, despite the warning delivered in both the opening two paragraphs, and concluding single sentence of Riemann's habilitation dissertation, in which Riemann located precisely the formal problem evaded by Hilbert and his positivist circles generally.

Additionally, Hilbert's particularly notable tactical misfortune, was to have presented his famous proposal on the virtual eve of the superseding of a mere mathematical physics, by the superseding developments in physical chemistry done in the course of the transition into the Twentieth Century by the work of physical chemists such as the U.S.A.'s William Draper Harkins and Russia's Academician V.I. Vernadsky.

To attack Hilbert for his formal mathematics as such, is, as Oscar Wilde had warned in a kindred matter, the form of Hilbert's error was in the tradition of a pursuit of the incredible by the unspeakable. Hilbert failed to respect the fact that mathematics must be regarded properly as the *sometimes* useful, but appropriately

modest slave of physics—Carl F. Gauss’ “Queen of science,” as Albert Einstein understood this, not the other way around. In short, Hilbert’s essential misfortune, lay, thus, in a manner of speaking, in his choice of what turned out to have been the non-existent universe for which his mathematical mapping had been designed.

So, the arrival of the achievements in physical chemistry in the aftermath of the work of Louis Pasteur and Dmitri Mendeleev, and on the eve of the rise of the part played by Max Planck, Albert Einstein, and Academician V.I. Vernadsky,⁹ had changed everything. Positivists in the genre of Ernst Mach’s Ludwig Boltzmann had passed out of fashion with the coming of the Twentieth Century;¹⁰ the way was cleared for the 1920s appearance of something more despicable among Mach’s successors, the devotees of Bertrand Russell.

The Systemic Error of the Modern Academics

The systemic quality of the categorical error intrinsic to the essential presumption of all reductionists, as for the case of the domain of a science of physical economy, is the error typified by the positivists in the train of such as Karl Weierstrass, Felix Klein, and David Hilbert. The type of error which those persons committed, is merely typified by the case of the Archimedes who presented the erroneous presumption, that the derivation of the circle can be left to the mercies of the reductionist’s errant notion of quadrature. The exposure of this systemic error by Archimedes was a crucial feature of the accomplishments of the founders of modern European science, such as, most notably, Filippo Brunelleschi and Cardinal Nicholas of Cusa’s founding of a competent founding of a modern physical science.

A more significant case than the already crucial issue of the ontologically physical principle of the circle, is the modern discovery of the function of the physical significance of the discovery, by Johannes Kepler, of the generation of the elliptical form of the physical orbits of the Earth and Mars. Still more significant is the discovery of an entire class of non-reductionist trajectories in mathematical physics, such as the

catenary itself, by, successively, Filippo Brunelleschi and Nicholas of Cusa, and by Cusa’s follower Leonardo da Vinci’s discovery of the functional character of the relationship of the catenary and tractrix, and by the higher order of such functions expressed by the principle of least physical action by the collaboration of Leibniz and Bernoulli.

The generalization of that action, of superseding a formal, merely mathematical conception of geometry, by an ontologically physical geometry of contemporary universal physical chemistry, carries the progress of science today into the sometimes forbidden domain of cosmic radiation.

The fair summation of such a chain of evolutionary development of such subject-matters came with the opening two paragraphs and concluding single sentence of Bernhard Riemann’s 1854 habilitation dissertation.

Simply said: actual physical curves of least physical action, which are the foundation of a true physical science, do not exist in the axiomatics of that method of mathematics which maps consistently with the presumptions of all followers of either the Delphic school of Aristotle, or those of the school of Paolo Sarpi, including the modern positivists such as creditable follower of Euclid, David Hilbert. Such is precisely the issue posed to us by that fraudulent argument commonly displayed in attacks on the work of Kepler by the modern academic positivists. For them, almost anything can exist, statistically, in the universe, as long as the existence of actually universal physical principles is denied.

The Historic Origins of Aristotle

In brief: how it had happened, after the death of Plato.

The charlatan known as Aristotle, had served as a lackey of that King Philip of Macedon who, until his own assassination, had lorded it over what we describe as those unfortunate Hellenes who had ruined themselves in the great folly of the Peloponnesian War. This was, temporarily, to the advantage of that King Philip of Macedon who now allied himself in support of a scheme which was worked out, as based on what was termed “the oligarchical principle,” with the same (“Persian”) empire which the Hellenes had earlier defeated on the seas. Aristotle, otherwise known for his skills in poisoning, established a system which was deployed in the effort to destroy what had been Greek science since such as Thales and Heraclitus, as also Socrates, Archytas, and

9. The hotly contested issues between Academician V.I. Vernadsky and the implicitly positivist, “materialist” circles of A.I. Oparin, within the Soviet Union are implied.

10. I have no indication that Boltzmann’s 1906 suicide, at Duino, at this juncture was relevant to these developments in physics, but his, and also Ernst Mach’s passing did affect the process of the shift which occurred over the transition from the pre-World War I to post-World War I shift in the dialogue at about that time.

FIGURE 2
Greece During the Peloponnesian War

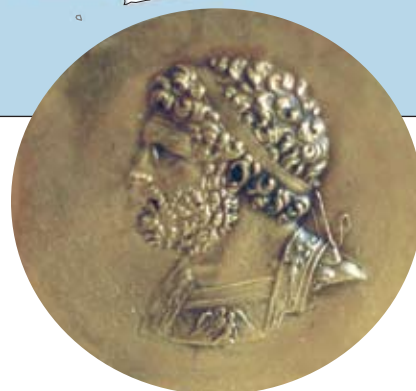


Plato; Euclidean geometry was a result of this.

After the assassination of Prince Philip by a vengefully disposed and wronged member of the Macedonian court, there was a struggle for power over Philip's throne. Despite the mutual hatred between them, former student of Aristotle, Alexander, whose relevant ancestry was in Cyrenaica by way of Epirus, won the succession to his father's throne, and so the continued mortal conflict between Aristotle and Alexander continued to Alexander's death, allegedly by that method of poisoning for which Aristotle was notorious at that time.¹¹

11. Cyrenaica was a great maritime culture of the Mediterranean, closely associated with Egypt and what we call Greece today. Alexander's links to Cyrenaica proved to be a crucial strategic connection of Alexander's role in the revolt of Egypt against Persian imperial rule, thus creating the setting for the defeat of Tyre, and, thus, of the Persian Empire. The great Eratosthenes was a native of Cyrenaica, who came to serve the maritime power of Egypt in his time, and a leading figure of its famous great library of Alexandria.

*King Philip of Macedon
"lorded it over what we
describe as those
unfortunate Hellenes who
had ruined themselves in
the great folly of the
Peloponnesian War."
Aristotle was his lackey.*



Consider that Aristotle's contribution to the continued destruction of science, then, as such a practice as that has been continued, to the present time. Consider the corruption of what had been the earlier Greek mathematical science, by Aristotle's follower, Euclid, and through to the time of the reign of the Twentieth-century's nastiest ideological charlatan, Bertrand Russell.

Consider the historical quality of the developments in the succession of the Peloponnesian War, the judicial murder of Socrates, the death of Plato, the rise of Aristotle to power, Alexander's accession, the victory over the Persian empire, and the death of Alexander.

Following the disastrous Peloponnesian War, the po-

litical powers of Europe had come to reign, from that point into modern European times, within a domain which had been defined by the growth of the extent reached by ancient European maritime culture. That European maritime tradition has been maintained as the prevalent background of developments, still, to the present day, up through, and beyond the time of the rise of the Venetian faction around a revision of the Aristotle legacy by the Paolo Sarpi who is the putative father of the disease known as the modern European Liberalism.

The outcome of this process has been, and continues to be, the rise of the form of modern European Liberalism which has been associated, principally, with the influence of the British Empire since the news had been delivered to a certain Abbé Antonio S. Conti, that Gottfried Leibniz was now assuredly dead. This news, when received by that Conti, was taken as the signal for the opportunity for establishing the intellectual reign of the imperial system of both post-Aristotelean, and almost post-Sarpi British Liberalism, an ideology which has reigned in the British Empire and other places since the combined effects of the death of Leibniz, and of the British East India Company's emergence with the virtual status of a world empire achieved at the February 1763 Peace of Paris. It has been an ideology which was based on a notion of a reigning imperialist culture of the British Empire since Lord Shelburne's launching of the imperialist British Foreign Office in Spring 1782.

Those resulting, culturally disastrous, pro-imperialist developments which have been prevalent in academia since no later than the aftermath of the Peloponnesian War, have also shaped the practiced dogmas of the British empire through such developments as the rise of what is known today as the empyreal reach of the Inter-Alpha Group of predatory financier interests, which was established since 1971-1972 as the concomitant of the destruction of the U.S.-sponsored, fixed-exchange-rate system, as done under the nominal direction of U.S. President Richard Nixon, in August 1971.

However, the actual launching of what became the imperialist role of the usurious racketeering of the Inter-Alpha Group of British imperialist influences, during the lapse of time between developments of Summer 1971 and October 1987, had been prepared through actions taken at two earlier points in time: first, against the just-deceased U.S. President Franklin Roosevelt, by President Harry S Truman's collusion with British imperialist Winston Churchill, a procedure which began, immediately, on the occasion of President Roosevelt's

death, and, second, what has been shown to have been the historically crucial assassination of President John F. Kennedy.

The crucial blow to the independence of the nations of western and central continental Europe, in that series, to date, was delivered by the trio of Britain's Prime Minister Margaret Thatcher, France's President François Mitterrand, and a complicit U.S. President George H.W. Bush, against Germany and other continental European nations, in actions of 1990 and beyond. Those actions by that trio were already intended, then, to lead to the destruction of the sovereignties of the nations of continental Europe through the dictated plan for the establishment of the degradation of western and central Europe to a colony called the European system of the "Euro."

Approximately two and a half thousands years of European political culture is presently poised at the brink of threatened early extinction. While there is insurgent, science-driven physical-economic progress among the nations bordering the western side of the Pacific and Indian Oceans, the traditional homeland of European civilizations, the Mediterranean and trans-Atlantic regions, are poised at the brink of a prolonged new dark age. If the latter, trans-Atlantic regions go down, as they threaten to do so soon, the Pacific region's hopes will go down, too.

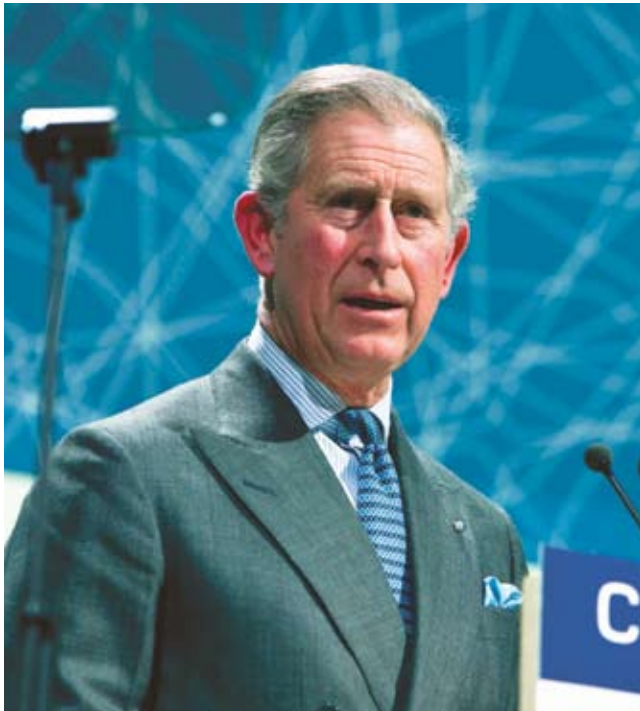
Without an upward, science-driven surge in the productive powers of labor, a dark age for all humanity were virtually inevitable. The option of survival and progress exists, on the condition that that course is chosen. Hence: Enter, the subject of "Cosmic Radiation."

Enter: "Cosmic Radiation"

The purpose of this present report, has been, not to introduce content of the subject of "cosmic radiation," which I have left to the "basement team," but to clear the ground for a properly focused attention on the historic implications of taking up that subject-matter for practice.

If mankind abandons a presently aggressive policy of plunging all humanity into a rather immediate collapse into a plunge into a general new dark age of all humanity, the challenges which will confront a society which has escaped that presently threatened catastrophe, will oblige us all, for several strong reasons, to return attention to the greatly neglected challenges of an applied science of cosmic radiation.

In part, the most dramatic implication of a turn to



Ministry of Foreign Affairs of Denmark

The British empire “has always remained passionately pro-Malthusian in spirit of policy of practice,” writes LaRouche, “whenever strategic circumstances permitted, as is the case for the U.S.A. under the British puppet known as President Barack Obama today.” Shown, Britain’s Prince Charles opens the Copenhagen Climate Change summit, Dec. 14, 2009.

cosmic radiation policies, is the challenge of entering near-by Solar space, and beyond. The still broader implications are not only vast, but presently unfathomable, especially when the conditions within and effects of fusion-powered, accelerated travel within and transport to temporary or other habitats in nearby space generally, are taken into account, and transport of persons within interplanetary space is taken into account. Also, there is an immediate question posed, the instant we recognize the implications of the subject of “cosmic radiation” are taken into account, even to the limited degree a meager definition of the subject has been presented: what is the proper definition of “disease” when relativistic and other transport is occurring in varying qualities of a condition called “space,” whether it be inter-planetary space, or different conditions of “environmental space” are considered within the scope of our habitable environment on Earth itself?

My own principal role in this matter is, and shall probably remain as the part to be contributed by my own already established skills as a physical economist. My presently adopted role lies, principally within the

definition of the implications of this subject for defining the physical-economic standards which this orientation toward cosmic radiation implies, including the implications for efforts to define the physical meaning of physical-economic space as such.

This latter chore requires, as a first step, the elimination of the influence of the modern cult of logical positivism, a chore suited both to my special skills, and a task to my liking.

I. The Fall of the British Empire

A few remarks to introduce some necessary points on strategic political matters of relevance.

With a few notable exceptions, what may be fairly distinguished as competent science within England since the death of Gottfried Leibniz and rise of Abbé Antonio S. Conti and his vulture-like familiar, Voltaire, is fairly indicated, or typified in elements from Charles Babbage’s autobiographical contributions to a work edited by Philip and Emily Morrison, including Babbage’s association with the international figure of Germany’s Alexander von Humboldt.¹²

The explanation is elementary. The United Kingdom became an Anglo-Dutch global empire in the Roman imperial tradition, by steps, beginning with the February 1763 Peace of Paris which established the British East India Company as an operating empire, a development later consolidated, with great assistance from Napoleon Bonaparte’s conduct of continental wars, by the political victors over Napoleon, at the Congress of Vienna. Britain has remained such an empire, with certain, relatively speaking, ups and downs, from that moment to the present day.

Only political incompetents fail to recognize the British system as a world empire according to the monetarist tradition, which has dominated Europe as a whole since the decisions of the 1812-1815 Congress of Vienna. Whereas strategic expediencies have often prompted the British empire to engage in a spate of scientific-technological progress, whenever circumstances permit Britain to have its preferred way of things, it has always remained passionately pro-Malthusian in spirit of policy of practice, whenever strategic circumstances permitted, as is the case for the U.S.A. under the British

12. **Charles Babbage and his Calculating Engines**, Philip and Emily Morrison, eds. (New York: Dover Publications, Inc., 1961).

puppet known as President Barack Obama today. All European empires have been vectors of suppression of the general progress of the peoples who have served them as victims within their reach, as Africans and others know the United Kingdom today.

That much said about ups and downs in turns of British policy since the advent of the so-called “Seven Years War” of 1756-63, turn briefly from the science of political and physical economy, directly to the matter of the actually wicked policy which was unleashed upon the United States by its own foolish choice to enter what has been described as “a prolonged land-war in Asia,” a war which President John F. Kennedy would have prevented, had he not been assassinated.

The complication is that the British empire, which had crafted that post-President Kennedy “long land-war in Asia” of 1964-1975, not only attempted the doom of a United States whose existence it had hated since 1763-1782; without that Indo-China war, the British Empire could not have trapped the U.S.A. into bringing its own ruin down upon itself. Now, what was done by London to wreck the post-President Kennedy U.S.A., has brought the imperial forces of that leading predator against the U.S.A., the British-directed Inter-Alpha Group, to the verge of its own self-destruction as an imperial power, and the threatened downfall of the BRIC (“Brazil, Russia, India, China” group) as well.

The characteristic economic feature of the entire reach of this span of modern history, since the death of President Franklin Roosevelt, on April 12, 1945, has been a persistent shutting down, phase by phase, and step by step, of that economic-science-driver policy and practice which had made possible the U.S.A.’s decisive role in the process leading into the defeat of the Nazi regime of Adolf Hitler. Where President Roosevelt had intended the conversion of the productive capacity represented by the economic-science-driver which had been built up to fight that war, for the post-war economic development of what had been intended to be the sudden end of the British and kindred empires, Truman was complicit in Churchill’s intention to destroy President Roosevelt’s intention, that for the sake of re-establishment of a global tyranny of the British Empire; so, the British Empire has, in the end, and with suitable irony, now doomed itself.

That was when, and how the steep decline of President Franklin Roosevelt’s and also John F. Kennedy’s once mighty U.S.A. began.

So, as I have said above, the subsequent assassina-

tion of President John F. Kennedy, like the repeated attempts to assassinate France’s President Charles de Gaulle, had the same quality of intended effect. The actual assassination of President Kennedy, which made possible the ruinous 1964-1975 U.S. war in Indo-China, set the stage for those radical changes in U.S. economic policy which had been made possible through that continued warfare.

With the phasing down of the development program of both the U.S. NASA development program, and shutting down all net development of the basic economic infrastructure of the U.S.A. since U.S. fiscal year 1967-68, the physical economies of the trans-Atlantic world have been in a process of being collapsed, since then, to the present day. What Aristotle did to science since the death of Plato, the anti-nuclear, “green” economic-policy plague has done to the trans-Atlantic world since the advent of the U.S. Nixon Administration.

We are no longer merely hovering on the brink of a global “new dark age;” we have already entered that global “new dark age,” most clearly since the actions in the U.S. Congress, and under the succession of Presidents George W. Bush, Jr. and Barack Obama since September 2007.

Our urgent mission is to contribute in a crucial way to launching an accelerating process of sharp reversal of those earlier downward trends in the trans-Atlantic world.

It is under those contemporary historical conditions, that I warn here, that, until the effects tending to ruin actual physical-scientific progress, including the relevant effects of the follies of such as Professor David Hilbert, are now removed from the political effects that error has had in shaping trans-Atlantic science policies of nations, the reverberating effects of Hilbert’s blunder would encourage a continuation of the presently virtually terminal state of onrushing general, physical collapse of the economies of the world as a whole.

The Wars Which Fools Declare

To understand the underlying issue which history has posed to the memory of the work of such as David Hilbert, we must, to parody Riemann, propose to depart the realm of futility in the department of mathematics, for the physical progress of mankind. Such is the significance of the difference between the realm of the economically fictitious, British Liberal system, and a strictly physical-economic notion of the U.S.A.’s constitutional American System of economy.

Take the case of unnecessary wars, for example.

The great tidal wave of continuing intellectual and moral decadence which has been the dominant trend in trans-Atlantic culture since the moment after the death of President Franklin Roosevelt, has been expressed, chiefly, in the currently continuing perpetuation of a state of combined actual and preparations for prolonged, economically and morally wasting practices of warfare, since the death of President Franklin Roosevelt, up to the present moment of great global folly in Afghanistan.

Such was the character of the Habsburg wars of 1492-1648, the epidemic trans-Atlantic and inner European warfare of the Eighteenth Century, and the British imperial warfare which has continued like a cancer of the planet since the carving up of the world by Prince Metternich and the British Empire since 1812-1815, to the present day. Admittedly there were some wars, which, when prepared and launched, had to be fought, once the British empire had brought them into action, as with the U.S.A. alliance with the British Empire against what the British Empire itself had spawned, from birth, as the Adolf Hitler regime.

However, had President Franklin Roosevelt not died when he did, there would have been no crucially significant conflict between Stalin and Roosevelt, and no continuation of that British empire which has been the ugly mother of nearly all evil on this planet since that time. Stalin's Russia had the good sense of knowing that it urgently needed us as protection against the evil which remains, today, against which all decent men and women of this planet must contend, even sometimes desperately, today.

Sometimes, wars have been actually forced upon us. We must always prepare ourselves to win wars, if necessary, but to be both sufficiently prepared and fueled with the cleverly crafted powers of constraint, like that of France's Louis XI, to avoid getting into any war which a prudent policy of practice might enable us to defeat: to proceed as did that Louis XI, by other means, as Cardinal Mazarin and Jean-Baptiste Colbert did, but silly King Louis XIV did not.

Peace lies in the power expressed by a science-driven commitment to the development of the mind and increase of the scientific productivity of a great people, with respect for the advantage of buying off adversaries who were prone to be silly, rather than wasting our power and progress by succumbing to the temptations of a war-like impulse.

So, Britain acquired an empire through the foolishness of intended victims who drained their strategic potential by engaging in long wars, such as those of 1964-1975 in Indo-China, which we could have won by peaceful cooperation with an old World War II ally, Ho Chi Minh. We were set up for the destruction of the moral fiber of our own republic, over the damned interval from the assassination of President John F. Kennedy through the election of the damnable Trilateral Commission regime of David Rockefeller's puppet-President Jimmy Carter.

The root of true power springs from Classical poetry and the inspired practice of assigning priorities to the progress of fundamental advances in the discoveries and economic practice of physical science. Such habits are the true nature of human beings who choose to avoid behaving like beasts.

II. The Crucial Battle in Science

Since the emergence of Hellenic civilization, we have three principal, but mutually contradictory, definitions of the foundations for modern science still afoot in the known history of European civilization to date.

The first two among these are systemically incompetent:

- 1.) The modern expression of the tradition associated with the names of Aristotle and Euclid, which is implicitly defined by the pathetic mentality expressed as the *a-priori* assumptions of Euclidean geometry.
- 2.) The modern empiricists, the tradition which is associated with Paolo Sarpi and his followers, denies the existence of actual human knowledge of the real world. It chooses to treat the kind of experience called "behaviorism" as a substitute for a real actual universe. There are, by definition, no actual physical principles which are permitted to be considered among the consenting devotees of that empiricist system.

The third, and last of the three typical alternatives, is:

- 3.) Classical European civilization, is the only competent one. It is typified by the Pythagoreans in ancient times, and, in modern times, expresses the tradition of the Golden Renaissance which has typified modern European progress in scientific competence up to the present day. Modern

progress in this domain is prompted and steered from among the modern followers of Cardinal Nicholas of Cusa, Luca Pacioli, and Leonardo da Vinci, such prominent scientists who followed them as Johannes Kepler, Gottfried Leibniz, Gaspard Monge and Lazare Carnot, Carl F. Gauss, and the followers of Bernhard Riemann, such as Max Planck, V.I. Vernadsky, and Albert Einstein.

My own uniquely specific contribution to the enrichment of the notion of the third category, is expressed in my specific contributions to the founding of a *political science of physical economy* which is premised on the crucial features of Bernhard Riemann's 1854 habilitation dissertation, and the relevant work of such among Riemann's specific followers as Max Planck, V.I. Vernadsky, and Albert Einstein. My own relatively unique achievements in the field of physical economy, have been rooted in the principles of Bernhard Riemann's habilitation dissertation; but, it is extremely important to recognize that this defines the real Riemannian universe as being located, entirely, in the domain of our accessible experience of the knowledge of a science of physical economy, which is our essential "window" into the universe we inhabit. I explain my point here, as follows:

It has been customary academic and related practice, to treat the role of mankind on our planet, and within our Solar system, as something externally introduced to the development of both Earth as such, and the Solar system and even the universe at large. Man is treated, thus, as virtually an intruder into a pre-established order, like an alien come as a colonizing invader who performs no necessary function for the perpetuation of the Earth or its primitive inhabitants. In other words, humanity as a whole is regarded as virtually a pack of "Pilgrim Fathers," who, implicitly, happened to arrive on the shores of Massachusetts in A.D. 1620.

My discoveries in the field of a science of physical economy, imply an opposite conclusion: man is an implicitly assigned natural caretaker of the Creator's universe, as if prudent scholars might have read the celebrated first chapter of the Mosaic **Genesis**.

In brief, the real world, can be defined in terms of a *science of physical economy*. It is the world we know through our ability, if we use it, to change that world for the better, as the world is defined for us by guidance supplied by the notions expressed in terms of a humanist science of physical economy, that according to a uni-

versal physical principle of *anti-entropy*. The key to that view of man within the Solar system, is to be found, most readily, as illustrated in the role of the contrast between the faculty of sight (e.g., as by telescopes), on the one hand, and by harmonics, on the other, in defining Johannes Kepler's uniquely original, paradigmatic discovery of the principle of the organization of our planetary system.

The real world, as it is to be identified by the third of the three listed cases, the science of the followers of Cardinal Nicholas of Cusa's **De Docta Ignorantia**, is usually known in its expression, as its kind of projection, in physical space-time, in the framework of the human senses.¹³

Most notably, this latter, Riemannian, outlook on the universe, is implicit in scientist Albert Einstein's definition of Johannes Kepler's universe as "finite, but unbounded." This means that the universe, in any stage of its existence, is defined by a set of currently relevant principles, as Kepler's principles define an immediate experience of a finite domain; but, as Einstein's reading of Kepler's great work of genius indicates, that the "finite but unbounded" universe, which that domain inhabits, is *anti-entropic*.

Thus, a Riemann universe according to the discoveries of Academician V.I. Vernadsky, is anti-entropic in all three of its typical phases (the Lithosphere, the Biosphere, and Noösphere), but only one phase, humanity, shapes our knowledge of the domain of mankind's immediate existence. It does this through self-reflexive comprehension of the creative actions of the conscious will upon our own and our present planet's future: but, whereas, on the one side, the Lithosphere and Biosphere are developing anti-entropically, but, on the other side, human creativity (anti-entropy) is the product of a human act of knowledgeably conscious intention respecting the future. Furthermore, human existence tends to gain, relative to the trends of the Lithosphere and Biosphere, as we witness this relationship through the willful effort of mankind (in an assigned role as the "assistant creator") to transform the characteristic of our planet Earth, and soon the Moon and Mars, into a future development of the domain of the Noösphere.

The expression of the willful character of human anti-entropy, is located in *the experience of anti-entropy in physical space-time*: e.g., not as a simple, ostensibly

Continued on page 20

13. I clarify this point, respecting "projection," below.

Sarpi: Disconnecting the Mind from the Universe

The following is excerpted and abridged from Michael Kirsch, "Venice and Leibniz: The Battle for a Science of Economy," where references are provided: <http://www.larouchepac.com/node/13834>.

Sarpi's program was to sever the mind from its compatibility with the universe entirely. This was accomplished in three steps:

First, Sarpi defines the nature of the universe, and the nature of actions of bodies in the universe, as reduced merely to the sensual depiction of the bodies themselves, i.e., the fact that they can be described with length, depth, and breadth, and that they move around in certain ways.

Sarpi argues, according to a summary by Prof. Vittorio Frajese (1994):

"The matter of natural things is nothing else than extended body, understood as being what persists through transformations and never ceases to be. The body is indefinite extension, which, delimited by surface, line and point, assumes a shape. It constitutes, of itself, an infinite and unordered continuum upon which infinite orderings and infinite figures may impress themselves. . . . Universals have no existence whatsoever. What do exist are bodies, extended and shaped, which determine and cut into matter so as to make up individual objects which man may perceive through external, passive senses, and matched to one another depending upon how they resemble one another, thanks to an active and internal sense."

The next step, to define how man related to that infinitely boring and extended universe, was based on the "man" of Sarpi's nature.

Since the universe of the unseen doesn't exist, the man of Sarpi's mind has no ideas, but only considers

sensations. Therefore, Sarpi claims that reason is non-existent: "We distinguish between our senses and our reason, only in order to be able to disclaim responsibility for our acts." [This and subsequent quotes are from Sarpi directly—ed.] In this way, all connection

between the sense perceptions observed by the mind back to the mind itself is removed, in effect, severing the senses from their own subjective origin, in which the power of hypothesis lies. The "scientist" is relegated to using descriptive formulas of Sarpi's so-called "laws," to mechanically extrapolate "future events based upon constant repetition of events past."

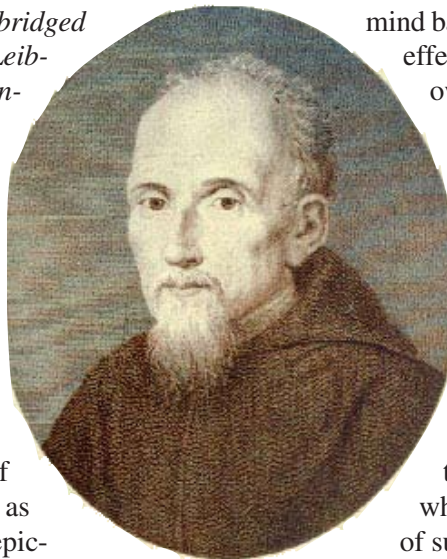
Third, since it is only these kinds of laws which mankind can hope for, in a universe which contains and consists of no universals whatsoever, Sarpi defines the Creator of such a universe as powerful, but not necessarily reasonable, and the created and creation itself, unknowable.

And since there was nothing man could seek to discover for himself or posterity, Sarpi explained that orientation to the future, a key to mankind's commitment to the continuity of discovery, was merely an irrational waste of time. Be degenerate he says: "Do not follow opinion that wears the title of truth, but rather opinion that wears the title of pleasure or usefulness."

The wise man, writes Sarpi, "recognizes that his efforts at obtaining knowledge always come up against the infinite, and, knowing this is beyond his grasp, he stops and comes to no final decision on any matter, deciding to live according to the day-to-day appearance of things and, in public, support those beliefs which are commonly held. . . .

"The end of man, as of every other living creature, is to live . . . simply live in the here and now."

In other words, to free oneself from projecting the imagination into the past or future, and enjoy the present time, not for anticipation of the future, but for itself. Like a beast, forget the past and future, trust not in the mind, live for the present means, enjoy the present pleasures, and let the ends work out for themselves.



Paolo Sarpi (1552-1623)

Continued from page 18

“instantaneous” image. On this account, competent science rejects both the Aristotelean and empiricist views as being intrinsically incompetent, because those views are characteristically entropic (e.g., “zero growth,” or shrinking rates of net growth: entropy). In fact, the survival of the human species depends upon that commitment to anti-entropy; without a human anti-entropy among the human species, mankind were as an ape, a lazy old gorilla waiting for his girl-friend to come pounding on his back, to keep the gorilla-species from dying out.

So, that universe is presented to us as Max Planck had intended, in his opposition to the reductionism of the positivists, and as being essentially harmonic. Hence, we mean the harmonics of “cosmic radiation,” as Kepler’s uniquely original discovery of universal gravitation, rather than a particular universe, would imply.

Those general observations of relevance now stated, we turn our attention to the crucial points to be raised here. At a later point in this present report, we shall turn our attention to some details of the process which I have brushed over in presenting a broad image of the case here. Then, the reasons for this choice of procedure should be, in the main, readily obvious.

Physical Economy

The crucial point to be considered here and now, is the matter of the way in which the human mind performs the functions which define it as human, rather than as representing a special kind of higher ape. So, if mankind expresses a superior, dominating process within the universe, there must be an efficiently corresponding universal principle of action involved in this distinguishing feature of human existence.

This is more than merely strongly suggested by the fact that the power for increase of the potential relative population-density of the human species on Earth, is determined by the efficiently willful characteristics of human creativity’s power to effect now, willfully, the existence of a future higher order in the universe. Some essential aspects of the principle involved in producing such an effect, are now known with a large degree of specificity with reasonably fair approximation. My own contributions to the development of a science of physical economy, as, for example, through my unique successes as a forecaster, are, so far, unique in their role as a competent source of crucial clarification of this actu-

ality.¹⁴ *Attack our enemies from a special flank, that of the future.*

However, as long as we limit our view of the physical causes for the simple increase of human potential relative population-density, we are mired in a crucial intellectual failure to be able to account for the systematically singular quality of the achievements of our species. The essential gains are not simply quantitative, but non-linear and ontologically qualitative.

The efficient character of mankind’s willfully driven increase of human potential relative population-density, is dependent on knowledge of the efficiency of a discovered principle which supplies a foreseeable *quality* of transformation of the future. Whereas the anti-entropy of the abiotic domain and biosphere is not conscious, not scientific, the categorical successes of society in overcoming entropy and creating ontologically higher qualitative states of existence of the human species are an effect produced as if directed “top down,” rather than “bottom up.” Mankind is distinguished from the beasts and flora by *those creative powers of the human mind which define the efficient generation of the future, as if from the action of the future on the present.*

Hence, we have the reflection in living practice, of that Biblical notion, as in **Genesis** 1, of man and woman as made in the likeness of the Creator.

Or, so to speak, to reach a mental state of assured freedom from mere presumptions or superstitions, which is unique to mankind considered as in the likeness of a child of the Creator, we must recognize the expressed principles of progress, as expressing a principle embodied in the crucial notion of a future currently acting upon the present (i.e., anti-entropy), the notion of actually creative ideas as the force which drives the development of man’s efficient role in the shaping of the universe. In other words, an approach consistent with the denunciation, by Philo of Alexandria, of Aristotle’s implicit degradation of God to a creature which had been made itself impotent by imposing an unchangeable, fixed state of the universe, as if it were an already wound-up, wind-up toy, while degrading the Creator Himself to the bestialized likeness of the brutishness of tragedian Aeschylus’ image of a Delphic Olympian Zeus.

14. A competent forecaster, presents new forecasts only some of the time. These are times when a relevant crucial turn in the situation shows itself.

This conceptualization of a science- and Classical-art-driven progress of the human economy which I present here, describes the basis for any competent insight into the notion of economy.

Mind: The Crucial Principle

The commonplace error of presumption which is committed by most persons, even actual or merely alleged sorts of relevant professionals, today, is the habit of believing that there is something like a direct relationship of simple dependency, between the human mind and the processes of sense-perception as such. In one type of such cases, the believer simply takes that presumption for granted. Among the followers of Paolo Sarpi, the modern empiricists (aka “behaviorists”), the fallacy of that piece of foolish belief, assumes a viciously depraved character.

As in the case of Johannes Kepler’s uniquely original discovery of the principle of universal gravitation, the naive believer in sense-certainty is confronted by what is, for him, or her, an agonizing quandary of the following description.

Kepler’s discovery of universal gravitation was premised on a unique kind of evidence, two kinds of evidence respecting the same objective experience. On the one side, looking at the Solar system through actual or imaginary telescopes, we have one species of evidence, visual evidence. From the other side, for what are ostensibly the same targets, we are presented, not with hearing as such, but with phenomena which the mind interprets as tantamount to harmonics.

Therefore, by taking that contrast into consideration, Kepler locates the orbits, with some fair degree of estimation, as if this were a visual image of the planetary array. In his first reading of the Solar system’s planetary array, he had noted a visual approximation of a series of Platonic solids. In his subsequent **The Harmony of the Worlds** he reaches a similar image of the planetary array orbiting the Sun, but, this time, not only from the standpoint of a visual image of the organization of the Solar system, but also from the standpoint of the harmonics of the ordering of the visualized proceedings.

The result of the comparison of the two readings of the organization of the Solar system, is a unique result which fearful physicists have sought to avoid, that they might evade the risk to their careers by substituting the dubious “Titius-Bode law” for the scientific basis of Kepler’s work. This was a choice which the authors of Titius-Bode made in seeking to avoid the painful risk to

academic careers incurred in offending the devotees of the intrinsically, and baldly fraudulent, but academically popular Isaac Newton cult.

It may appear to such evaders that since Titius-Bode appears to converge on the distances implicit in Kepler’s discovery, that the difference between the two presentations can be treated as moot in respect to their origins. That presumption by such spokesmen is false.

What is crucial in the discovery by Kepler, is that two qualitatively distinct identifications of attributed sense-perceptions, the mental function of sight contrasted to the mental function of musical hearing, must be jointly applied, in the fullness of that scientifically mandatory confrontation, to define the discovered universal physical principle of universal gravitation, by means of what might be termed “ontological triangulation”: all of which has nothing at all to do, systemically, with the argument of Titius-Bode. Science is the typical distinction of actual science from shrewd statistical guess-work; in Titius-Bode, no actually efficient, universal physical principle is indicated. Or, in other words, Titius-Bode does nothing offensive to the cult of the followers of Paolo Sarpi, or of Sarpi’s customarily lying lackey Galileo.¹⁵

The Follies of Sense-Certainty

The attempt by some to treat the discoveries of Kepler’s **The Harmony of the Worlds**, as being approximated by Titius-Bode, confronts a truly profound issue of conflicting principles, respecting the most essential type of consideration for defining a competent practice of physical science. The essential distinction of a fraudulent, Aristotelean dogma expressed as the *a-priori* assumptions of **Euclid’s Elements**, from actually competent scientific methods, is the incompetence of the *a-prioristic* presumption of Euclid, as also Aristotle earlier.

There is no “algebraic” form of systemic coincidence among the specifically sensory functions of sight

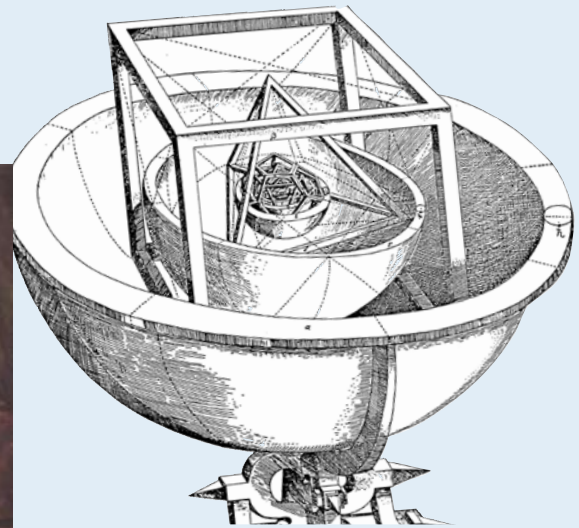
15. Galileo was a figure of the same Sarpi cult as the lying scoundrel Sir Francis Bacon who hated the William Shakespeare whose work Bacon’s circles and their followers suppressed to the extent they could. Notably, the revival of Shakespeare’s works from the influence of the heirs of Sarpi’s and Galileo’s followers such as Bacon, was accomplished by Germany’s leading influence in reviving the work of Johann Sebastian Bach and Gottfried Leibniz, Abraham Kästner. In competent science, there is no categorical separation of competent physical science from competent Classical artistic composition. As the case of Albert Einstein and his violin attests, or the earlier work of Bernhard Riemann’s Lejeune Dirichlet, the creative faculty in physical science is located within the specific mental powers associated with Classical art.

Kepler's discovery of universal gravitation, using principles of both visual and musical harmony, has nothing to do with the "Titius-Bode law."



Johannes Kepler.

Right: Geometrical model of the solar system as nested Platonic solids, from "Mysterium Cosmographicum." Above: Harmonic relations of the planets expressed in musical notation, from "The Harmony of the World."



Fidelio

and hearing, on the one side, and the specifically creative qualities of the human mind, on the other. This is a point which I have emphasized repeatedly in my work as an economist. The function of the human *mind* is systemically set apart from the sense-perceptual functions of the human *brain*; that is to say this as a matter of empirical evidence on this point. To put the point fairly, the human mind passes judgment on the sense-related functions of the human brain, that in a manner comparable to the function of the mental activities of Classical artistic composition. Similarly, no lower form of life than man, either uses fire willingly, or makes the equivalent of a species-jump in the fashion unique to the specifically creative powers of the human mind.

In approaching the issue which I have just located, respecting the lack of any systemic relevance of Titius-Bode to Kepler's uniquely original discovery of a universal physical principle, we must pay attention to the fact that only the systemic contradiction between two leading qualities of human sense-perception, vision versus harmonics, permits us to adduce an actual universal physical principle, as neither vision nor harmonics, treated separately could do. Universal physical principles, when conceived *empirically* in a valid way, represent a function of the *mind*, not the stimulus of the

brain simply by sense-perception.¹⁶

Obviously, without the human brain, the human

16. It is not my intention to provide a thorough treatment of the qualitative difference of mind from brain here. Out of respect for the boundaries assigned to this present report, a few pedagogical approximations must be sufficient. The general, ontological-paradoxical problem which confronts us in the context of these remarks on mind versus brain, is to be approached as a problem presented to us currently, as the fruit of a reductionist view of the organization of the universe, as the a-priori presumptions of Euclidean geometry typify the relevant effects of "brain-washing" by Aristotle, et al. Once we are freed from the childish blind faith in a notion of particles roaming in empty space, to a harmonic outlook, instead, the matter of the imputable "location" of the human creative-mental powers does not require that the human mind exist within the brain as such, but only that the brain-function be controlled by a systemic factor within a universe which is organized harmonically, rather than a scheme of roaming "sovereign particles" in empty space. For example, human knowledge of a discovered universal physical principle, or the like, is implicitly eternal, whereas an individual sense-impression has an ephemeral, when not outrightly doubtful character in its presumed role as an independent event. The human individual, as a personality, partakes of immortality, in the sense that a discovery of a universal principle is immortal, and may exert a seemingly immortal power over chance events. Thus, the present actions on the future become, as expressions of universal principles, the future acting upon the present. This is to be adduced by the implications of Leibniz's (and Percy Bysshe Shelley's) notion of the efficiency of the *dynamic*, as Leibniz defines it, in the "will" of the particular persons of a social process, e.g., Rosa Luxemburg's notion of the principle of "the mass strike," or the concluding paragraph of Shelley's *A Defence of Poetry*.

mind lacks the means to “tune in” on the experienced universe, or to send timely messages through the faculties associated with the living human body. However, in all cases of what can be rightly identified as the discovery of a universal physical principle, for example, or the communication of the act of replication of the actual discovery of an original Classical composition in music, the idea of that specific quality is effectively immortal within society, because its authoritative identity has been created by the human mind, rather than the human brain, as in no other species of living creature.

The mind and the brain are interdependent, but perform functions as of differing organs of the living individual persons. The experience of the brain which we should recognize as sense-perceptions, has its basis in the physiology of the relevant experience; the notion of a principle lies in the immortal experience of the cognitive powers among the persons who share the experience of generating the experiencing of a notion of principle.

The Aristoteleans claim to command a principle, but have no proof that it exists as a dynamic (Classical Greek: *dynamis*) principle of the universe. The Liberals represent a system, that of such as Sarpi, Galileo, John Locke, and Adam Smith, whose notion of behaviorism is an explicit denial of the possibility of human knowledge of any naturally principled form of action.

So, the case of the unique originality of the discovery of gravitation by Johannes Kepler, typifies what may be rightly distinguished as the proper intention of the concept of the individual human “soul.” While the concept of “mind” is not excluded from lower forms of life,¹⁷ the *specifically creative* powers inherent to the human mind, such as the power of discovery of a universal physical principle, are of a specifically unique quality.

These considerations have profound implications for the progress of science today, as I shall now illustrate that point.

Hilbert’s Crucial Error

The more influential of the incompetent approaches to the teaching of either mathematics or physical science in European history, are of two superficially similar, but systemically distinct forms of teaching. The first, usually identified today as a product of the influence of Aristotle and his follower Euclid, is based on the notion of sense-certainty of particular objects of

matter in otherwise empty, infinitely extended space. The second, which has been traced to the medieval irrationalist William of Ockham,¹⁸ by the inventor of the modern version of that doctrine, Paolo Sarpi, insists that man has no possibility of knowledge of the existence of natural principles in the universe, but only the person’s sensation. That doctrine of Sarpi, which is an utterly fraudulent concoction of such followers of Sarpi as Francis Bacon, Galileo Galilei, Rene Descartes, the circles of admirers of the Eighteenth-century Isaac Newton, Abraham de Moivre, Jean le Rond d’Alembert, Leonhard Euler, Joseph Lagrange, Pierre-Simon Laplace, Augustin Cauchy, and the parade of so-called empiricists up to the present date, and so on, has dominated the educational systems and opinion-making of the so-called educated classes of the trans-Atlantic world, and beyond up to the present instant.

That doctrine of what is often called “Liberalism,” is a dominant feature of all facets of trans-Atlantic culture for most of the leading political and related circles of that same part of the planet, and beyond.

The same empiricist belief dominates the understanding and use of currencies, and of credit based on the circulation of such currencies.

Physical Space-Time: The New Conception

The transit from within the orbit of our Moon to Mars and beyond, will inevitably change the way Earth’s people will generate their working mental images of physical space-time. The inevitable shift will be in a direction away from the simplistic notion of objects moving in what is deemed to be more or less empty vast regions of inter-planetary and more distant space.

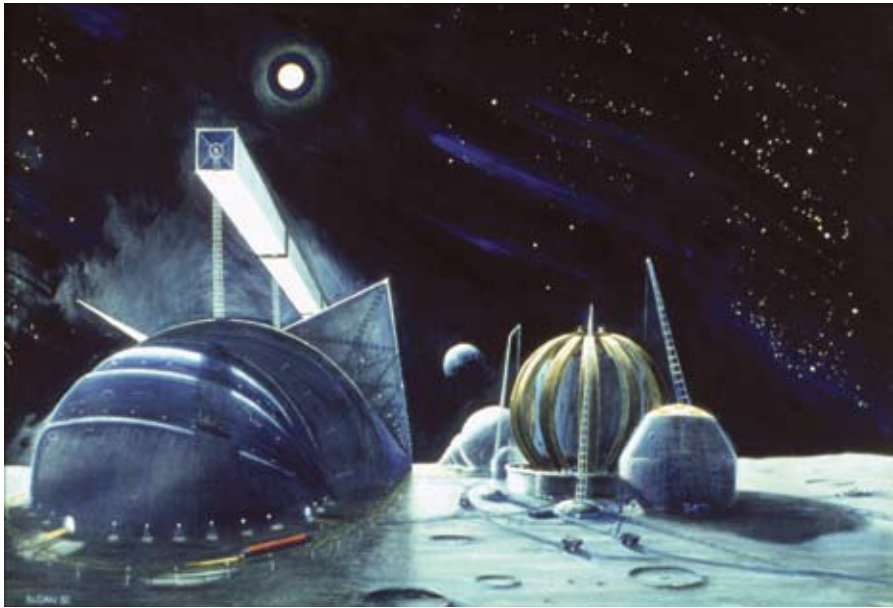
Furthermore, the action of human occupation of the nearest convenient planet, Mars, will be in the form of relativistic physical-space-time power by such suitable, required means as accelerating “thermonuclear impulse” (e.g., Helium-3) technologies. In such a universe, so experienced, there is no “empty space” as the popular idea of “empty space” is read presently.

The best way, and simplest way of describing as much as we presently know are probable challenges, is to shift from the idea of geometries which bear any resemblance to Euclid’s notion, to a densely active domain of physical space-time; there is nothing “empty” out there. Existence is never “empty.” *It is harmonic.*

That, precisely that, will be the way in which we

17. Some might say, such as liberal followers of Sarpi, John Locke, Adam Smith, and Jeremy Bentham.

18. (Lat: Occam)



Christopher Sloan

Artist's rendering of a colony on the Moon. The Moon can be a plentiful source of the Helium-3 that we need on Earth to fuel thermonuclear fusion power.

must now proceed to think of our habitat in near-by solar space, even within the range of what we had been conditioned to identify as space and time in classrooms until now. Space-time will become clearly for us, then, what it is actually presently; it is tuned. It is the domain of the vast depth of cosmic radiation.

Otherwise, in the meantime, action now to change the future will be the domain of our fate, and is so already, now.

It can not be considered mere coincidence, that the new conception of space-time and matter which came into being in the same process and general time-frame as the discovery of atomic and thermonuclear power should have converged, globally, in the way they did. Consider a simpler sort of the challenge of the future.

Had the United States under President Abraham Lincoln, not mobilized the defeat of the British Empire in the U.S. Civil War, the explosion of the development of the U.S. transcontinental railway system would not have occurred, and the British Empire could have, rather confidently ruled the seas for centuries upon perhaps centuries yet to come. It was the effect of the U.S. victory which prompted the revolutionary changes in Germany and Russia, developments which, combined in effect with the explosion of progress inside the U. S.A., prompted the British empire to organize what became, in succession, two so-called "world wars" and the Soviet conflict of the period from the ouster of

Chancellor Bismarck in 1890 through the disintegration of the Soviet Union through, chiefly, the effects of the Andropov and Gorbachov administrations unleashed in 1990-1992. So, the present acts through the future, to deliver the effects of the present.

There are indeed conspiracies in history. Some are active as conscious conspiracies in the opinions of individuals; the most important are made of the same stuff (Leibnizian *dynamics*) which Shelley emphasized in the concluding paragraphs of his **A Defence of Poetry**. So, already during August 2009, a mass-strike effect arose inside the United States, a development set into motion then, which will shape the outcome of 2010.

History is sometimes like a man who takes off with a rocket, but without a parachute, who decides to go up, but thereby sets into motion that process which will bring him down; so the future acts on the present.

So far, U.S. President Barack Obama's tenure is written as if on Belshazzar's Wall, or in the expression on the face of Nero's doomed mother. He is a projectile whose character, which shapes his fate, is written on the skies of the weeks ahead. Morally, he did it to himself, but the defect has been in his character. The probable outcome of that defect, was written in the scheme of events within the future which his own faulty actions unleashed. How it will end up, is not yet determined, but the direction of developments no longer lies within his power to change the general nature of the outcome; the pack is doomed, and that soon. He were wise to go quietly, but with quick steps into the shadows whose embrace will protect him. The future now shapes the present, by limiting the range of actually available consequences which it is given to us to choose.

For him, the Ides of March are written on the clouds above. For us, our fate is mainly grim, but, fortunately, still uncertain. There is little time to choose something which is better than continuing like the fools which most in high places are playing still today.

We must now choose the future we, and the nations of the world require.