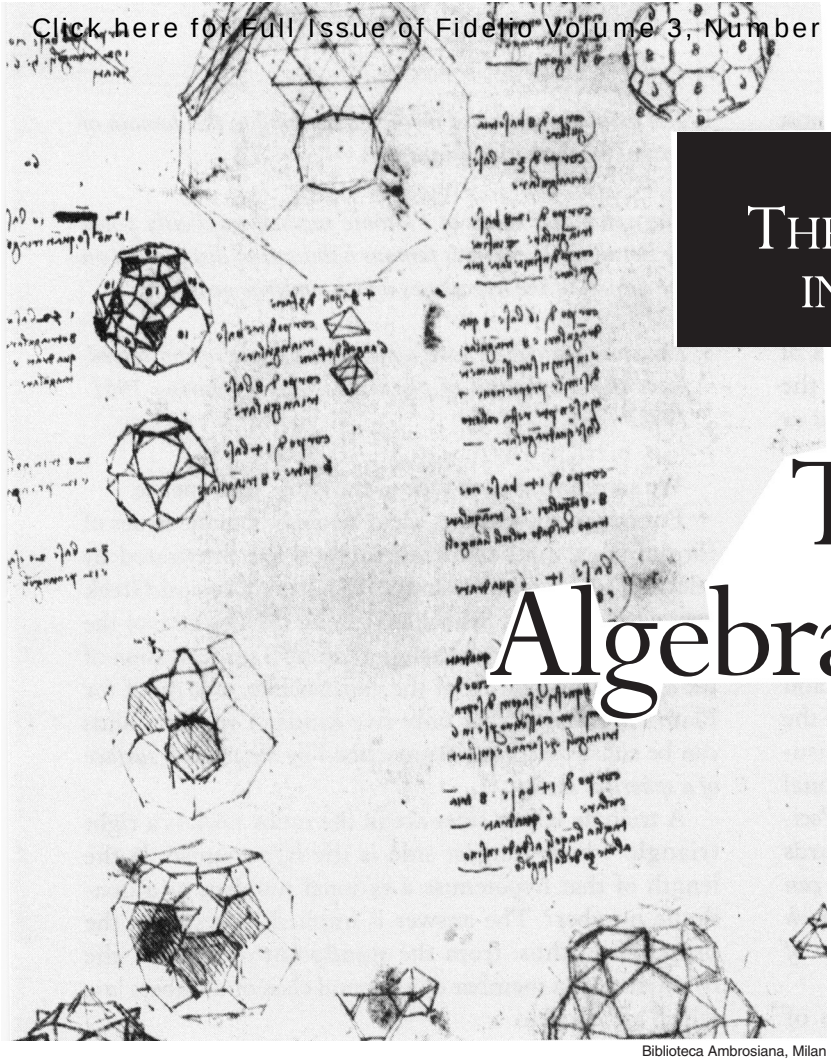

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SYMPOSIUM
THE CREATIVE PRINCIPLE IN ART AND SCIENCE

The Fraud of Algebraic Causality

by Lyndon H. LaRouche, Jr.

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Die Unterscheidung, welche Newton zwischen Bewegungsgesetzen oder Axiomen und Hypothesen macht, scheint mir nicht haltbar. Das Trägheitsgesetz ist die Hypothese: Wenn ein materieller Punkt allein in der Welt vorhanden wäre und sich im Raum mit einer bestimmten Geschwindigkeit bewegte, so würde diese Geschwindigkeit beständig behalten.

—Bernhard Riemann[1]

The central fraud which is incorporated in today's generally accepted classroom mathematics, is succinctly exposed by aid of reference to the fact that the Galileo-Newton algebraic formula for gravitational attraction is derived directly from Kepler's Third Law, and, therefore, according to all formal appearances, is perfectly consistent, algebraically, with that Third Law.[2]

The crux of the point is the following. Despite that formal consistency, that notion of *cause* which is central to the mathematical physics of Aristotle, Galileo Galilei, and Isaac Newton has no ontological existence in Kepler's original discovery of this principle of universal gravitation. Despite the algebraic consistency which appears to underlie the two calculations for gravity, there is an axiomatically irreconcilable ontological difference in physical meaning.

This axiomatic difference accounts, inclusively, for the fact that Galileo and Newton put a merely mechanistic notion of reaction, the term "cause," where Kepler puts the term "reason."

1. *The Collected Works of Berhnard Riemann* (*Bernhard Riemann's Gesammelte Mathematische Werke*), ed. by Heinrich Weber (New York: Dover Publications, 1953; Liechtenstein: Sändig Reprint Verlag Hans R. Wohlend), p. 525. ("The distinction which Newton makes between laws of motion or axioms on the one hand, and hypotheses on the other, does not appear to me tenable. The law of inertia is the hypothesis: If there did exist such a thing in the universe as an isolated material point, and if it moved in space at a determinate velocity, then this velocity would be maintained indefinitely.")

2. Lyndon H. LaRouche, Jr., *The Science of Christian Economy,* in *The Science of Christian Economy and Other Prison Writings* (Washington, D.C.: Schiller Institute, 1991), Appendix V, "How Newton Parodied Kepler's Discovery," pp. 374-377.

Leonardo da Vinci, "Sketches of Polyhedra and Truncations."

Examining this paradox leads us directly to the most profound, persisting conflict within mathematical physics as taught throughout the recent four centuries. Close examination of that paradox will show, that the origin of the issue is the fact that all modern Aristotelians, and other philosophical materialists,[3] either deny the existence of creativity, or, like René Descartes and Immanuel Kant, relegate its existence to the unintelligible domains of superstition: either Kantian "intuitionism" or, in the extreme of the Orphic cult's heritage, a gnostic's *deus ex machina*.

The crucial issue to be considered here, is Galileo's twofold violation of those most fundamental principles of the scientific method which had been employed by all leading discoverers during the preceding two millennia. To wit, *firstly,* Galileo violates the principle of scientific rigor established by Plato's Academy at Athens: the principle by means of which Plato, and also his students and collaborators Eudoxus and Theaetetus, demonstrated the existence of a class of magnitudes called "incommensurables," the which could not be derived from rational numbers. *Secondly,* Galileo falls prey to the fallacy of "scientific objectivity"; he recklessly and foolishly disregards the central principle of Plato's Socratic method: *there can be no competent method of knowledge of the universe which does not account adequately for the existence of the act of valid discovery of a new principle by the knower.*[4]

Those two, fundamental, axiomatic blunders of method by Paolo Sarpi's protégés Galileo and Francis Bacon, permeate all the distinctive features of the work of Galileo, Descartes, and Newton. These are the characteristic, hereditary flaws of generally accepted classroom mathematics today. Examination of those two cited, commonplace axiomatic blunders of accepted classroom and textbook practice, serves here as the appropriate basis for examining the fallacy in the popular notion of "causality."

The Principles of Scientific Method

Within the internal history of science to date, there are three types of axiomatic issues implicitly posed by contrasting Kepler and Galileo on the notion of causality:

1. *The axiomatic issues of method belonging to the domain of formal mathematics (geometry).*

2. *The axiomatic issues of Platonic method implicitly posed by Bernhard Riemann's famous habilitation dissertation on the subject of the hypotheses which underlie geometry.*[5]

3. *The epistemological issue which this present writer solved, from the standpoint of physical economy, during 1951-1952.*[6]

We summarize each type of the issues in sequence.

For our purposes here, the relevant axiomatic issues of formal (e.g., mathematical) method are illustrated by selecting two famous examples from the Classical Greek geometry of Plato's School of Athens: (1) The case of the hypotenuse of the 3,4,5 triangle; and (2) The derivation of the Golden Section from the construction of a proof for Plato's argument, that only five kinds of regular solids can be constructed as circumscribed by *the interior surface of a spherical shell.*[7]

A triangle whose sides are in the ratios 3,4,5, is a right triangle whose longest side is the hypotenuse. Is the length of that hypotenuse a rational number, or a quadratic number? The answer is implied by restating the proposition, thus: from the standpoint of algebra, the hypotenuse is a member of a general class of numbers $|a|_i$, which are equal to

$$[\ (b_i^2 + c_i^2)^{1/2}, \quad |a| < (|b| + |c|)\ ].$$

It belongs to a class of quadratic magnitudes, which the Classical Greeks included among the "incommensurables."

That solution is clear only from the standpoint of geometry, if not so clear from the standpoint of a modernist number theory or algebra.[8] From the standpoint of the methods of geometry, two magnitudes cannot be termed "congruent" merely on the basis of evidence that their agreement appears to lie within less than some

3. The inclusion of the Aristotle of his *Organon* among the materialists here, is no mistake. *Philosophical materialism* is any dogma which is consistent with the axiomatic assumption that ontological knowledge of the actual world is based upon acceptance of formal consistency among nominal definitions of sense-perception, excluding ideas. Thus, all anti-Platonists are intrinsically *materialists:* Eleatics, sophists, Aristotelians, empiricists, positivists, etc.
4. This is also the Christian Platonist's method of *docta ignorantia,* associated with Nicolaus of Cusa's De Docta Ignorantia and later writings.
5. Bernhard Riemann, "*Über die Hypothesen, welche der Geometrie zu Grunde liegen,*" in *Collected Works, op. cit.,* pp. 272-287.
6. Lyndon H. LaRouche, Jr., "The Truth About Temporal Eternity," *Fidelio,* Vol. III, No. 2, Summer 1994, pp. 19-23.
7. Lyndon H. LaRouche, Jr.. "An Economist's View of Gauss's 'Pentagramma Mirificum,' " *21st Century Science & Technology,* Vol. 7, No. 2, Summer 1994, pp. 44-55.
8. Once the Academy at Athens had carried the work of the Pythagoreans to the point of demonstrating conclusively the existence of "incommensurables," it was sheer professional incompetence to attempt to derive a mathematics from the standpoint of the so-called "natural numbers" alone. All formal mathematics must be defined as a product of a set of underlying geometrical axioms; any professional's defiance of the obligation to present proofs in geometrical terms is therefore a fraud against science, a willful *fallacy of composition.*

assigned margin of error. *In geometry, two objects are congruent only if there is coincidence inherent in the ways in which the two are respectively generated, just as, in biology, one distinguishes between marsupials and placental mammals.* In other words, the "equals" sign of formal algebra and the "congruence" sign of geometry are not interchangeable.

Now, consider our second example from mathematics as such.

The usually cited, calculated, algebraic value for the Golden Section is approximately double the cosine (ratio of two sides) of an included acute angle of a certain right triangle, for which the side of a regular pentagon is the hypotenuse.[9] To superficial appearances, this might be seen as either equal, or approximately the value obtained from calculating the algebraic magnitude of the Golden Mean. The widespread error lies not in this calculation as such, but in the assumption that this number is a coefficient which defines the harmonic orderings which Pacioli, Leonardo da Vinci, *et al.* associate with living processes, and Kepler with both living processes and planetary orbits. The commonplace error of assumption made in that way is paradigmatic for the fallacy of Galileo's and Newton's algebraic representation of causality.

Consider here the same issue of principle posed by the hypotenuse of a 3,4,5 triangle. In mathematics (i.e., geometry), *a phenomenon is what it is generated to become. How do Pacioli, Leonardo da Vinci, and Kepler generate the pentagon from which the indicated calculation of a Golden Section's magnitude is derived?* They generate it as Plato did. Since the other four regular solids of the Platonic series are derivatives of the regular dodecahedron, that dodecahedron is uniquely the characteristic of a *transfinite* process of construction, by means of which it is demonstrated that only five kinds of regular solids can be inscribed within the interior surface of a spherical shell.

Since the facets of the dodecahedron are each regular pentagons, the Golden Section gains the derived significance of the process of geometric construction by means of which the pentagon-faceted dodecahedron's uniqueness is demonstrated. Therefore, the determination of the Golden Section is not simply algebraic; it is, rather, the process of construction by means of which the uniqueness of the *spherical* dodecahedron is demonstrated.

It is not the numeric value of the Golden Section which defines the harmonic orderings with which living processes, planetary orbits, etc., are associated. Rather, this harmonic behavior reflects the fact that we exist in a universe which is bounded by a certain curvature of "physical space-time." The harmonic orderings of living processes, planetary orbits, etc., are not a function of some algebraic value given to the Golden Section; they are reflections of the boundedness, the "curvature" of the "physical space-time" in which we exist.

As Plato emphasized, and Cusa, Pacioli, Leonardo da Vinci, and Kepler after him, the domain of space-time geometry has certain "externally" imposed axiomatic features which can be explained only in terms of the fact that that geometry (as we, ourselves) exists in a bounded "physical space-time" of a definite curvature. It is the construction, by means of which we reconstruct Plato's conception of the uniqueness of the Five Platonic Solids, which defines the derived Golden Section's necessary significance to lie not in its algebraic approximation, but rather in its origins as a member of a set generated in this definite way.

This principle of method in Classical mathematics underlies the Athens Academy's notion of non-rational magnitudes called "incommensurables." These include the algebraic (Euclidean) magnitudes, the non-algebraic (transcendental), and the higher transfinite (e.g., the Georg Cantor *Aleph* series). These are ranked in that order by the relative *cardinality,* or *power* of each, such that the type which is of higher cardinality subsumes formally all those types which are of lower cardinality, but none of relative lower cardinality can be made congruent with a higher. In the last type, the *Aleph* series (of virtually null-dimensional magnitude of each term), only relative cardinality is implicitly countable: in first approximation, as a power-series. Thus, it was already clear from the work of the original discoverer of the transcendental value of π, Nicolaus of Cusa, that no algebraic number could ever become congruent with π.[10]

This brings us to the matter of the twofold point of Bernhard Riemann's *Hypothesis* dissertation of 1854.[11] The document speaks for itself, so let us limit ourselves here to drawing out the most relevant implications.

Geometry and Physics

The human perceptual apparatus represents the world of sensory experience to us primarily in terms of vision and hearing.

The geometry of Euclid is an attempt to codify certain assumptions, those which we might tend to make respecting the nature of the visual field as such, without our considering adequately the ontological implications

9. Draw a straight line connecting the first and last of three successive vertices of a regular pentagon. Consider the acute angle formed between either of the sides of the pentagon and this added straight line: $\pi/5$ (e.g., 36°). Half of the length of the constructed straight line is represented by cos 36°.

10. Nicolaus of Cusa, *De Docta Ignorantia,* and *De Circuli Quadratura.*

11. Riemann, *Collected Works, op. cit.*

of the physical developments which we situate as occurring within that visual field.

In contrast to that, study of speech and hearing shows that our physical apparatus of speech and hearing presents a world of vocalized language and singing which is ordered according to harmonic principles inconsistent with the naive axiomatic assumptions of a Euclidean geometry, for example.[12]

Plato is the first known discoverer to present to us an intelligible union of the two, vision and the naturally determined harmonic ordering of vocalized language. Plato shows us, by aid of reference to the five Platonic Solids, that there are harmonic orderings of phenomena in the visual field which correspond to the naturally determined well-tempered octave scale of harmonics in the domain of hearing.

As Riemann emphasized, in the relevant location, he was the first known to have posed the implications of Plato's standpoint in a certain fresh way. This is a discovery which he dates to March 1, 1853, which is the subject of his June 10, 1854 habilitation dissertation. This carefully composed, succinct writing is among the most lucid and profound expositions in all scientific literature. Yet, virtually all the generally accepted authorities commenting on this matter have done contortions to evade certain crucial features in the plain meaning of the text. On this account, one must put to one side all of the generally accepted authorities on the subject of this dissertation, including the partial misreading by Albert Einstein, for example; take Riemann plainly at his word in the original text.

Let us begin, as Riemann does, with the case of space and time as represented by Euclid.[13] It is a natural blunder, that we should attempt, at first, to imagine the visual field as extended indefinitely in straight lines—forward and back, side to side, up and down, and events as occurring at points referenced by means of these straight lines. It were inevitable, that as we take into account such qualities of physical space-time as mass, chemical reactions, and so on, we should attempt, however unsuccessfully, to represent physical processes as a system of events occurring within a Euclidean model of space-time.

It should occur to us, that in attempting to represent physical processes within the terms of space-time, we are representing the mere shadows which the reality of physical processes casts upon our mental image of the kind of "empty space-time" which is the subject of Euclid's *Elements.* We are thus in Plato's "Cave," as famously identified in his *Republic.*

Is there then some means, by aid of which we might supersede the bounds of that nominalist nightmare which is our reliance upon such mere shadows of our visual imagination? In the entirety of his searches through the history of mathematics, Riemann professes to have discovered only three hints as to how this problem of the visual imagination might be superseded. Two of these hints were provided by Carl F. Gauss, echoing the earlier work in the same direction by Plato's Academy at Athens during approximately the two centuries preceding 200 B.C. The third and last was provided by Riemann's own earlier reflections upon the work of the anti-Kant philosopher Johann Friedrich Herbart.[14] On the third point, Riemann's insight, while crucial, indicates the direction in which a solution may be sought; the solution was first supplied by this writer's original discoveries of 1951-1952.[15]

Go back to the Third Century B.C., to the great academician Eratosthenes, whose measurements estimated the diameter of the Earth, by a margin of error of about fifty miles.[16] Similarly, those ancients made credible measurements[17] of the distance of the moon from the Earth, and of the Earth from the sun.[18] We should view these accomplishments of Classical Greek mathematics as addressing the shadowy paradoxes identified by Plato, and by Riemann's habilitation dissertation. We stand upon what appears to us to be the flatness of the surface of the sea or lake on a calm day, and yet we are able to make measurements of shadowy images through which the reality of the sphere-like shape of our planet, and of the distances to the moon and sun are shown to us.

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12. On the derivation, and proof of the well-tempered system of J.S. Bach *et al.,* see *A Manual On the Rudiments of Tuning and Registration, Vol. I,* ed. by John Sigerson and Kathy Wolfe (Washington, D.C.: Schiller Institute, 1992). Just as Bach's chorales prove Helmholtz's apologist, Alexander J. Ellis, to have been a fraud on the empirics of tuning [see Herman Helmholtz, *The Sensations of Tone,* ed. by A.J. Ellis (New York: Dover Publications, 1954)], so the study of the natural genotypes of adult singing-voice species, their naturally determined registrations, and the problems of combining these voice-species in vocal polyphony define the well-tempered tuning as the only "natural" tuning. Confirming B. Riemann ["Mechanik des Ohres," in *Collected Works, op. cit.,* pp. 338-350], in contrast to the fraud on this same matter by Helmholtz, the construction of the human ear also conforms to this well-tempered tuning centered upon C = 256 and A = 430-432.
13. *The Thirteen Books of Euclid's Elements,* trans. by Thomas L. Heath (1925) (New York: Dover Publications, 1956); Riemann, *Collected Works, op. cit.,* pp. 272-273.
14. Riemann, *Collected Works, op. cit.,* pp. 273, 276, 507-520.
15. Lyndon H. LaRouche, Jr., "On LaRouche's Discovery," *Fidelio,* Vol. III, No. 1, Spring 1994.
16. When considered in respect to the Earth's polar diameter.
17. Credible, considering the instruments available.
18. The solar hypothesis was well established among the Hellenic astronomers of that period, centuries before the hoaxster Claudius Ptolemy.

Riemann posed the challenge of doing this in a more general, more modern fashion: decoding the shadows which physics casts upon the visual imagination. In other words, to apply the methods of inference employed by Classical astronomy and Earth geodesy to physical phenomena in general. About two thousand years later, Carl F. Gauss brought the application of these ancient Greek methods of refining astronomical and geodetical measurements into a state of mathematical elegance. We must view Riemann's emphasis in this historical light; Gauss' advanced work on these matters of astronomy, geodesy, and earth-magnetism, provides clues for attacking the shadowy paradoxes of sense-perception.

Riemann's work to this effect may be treated in terms of two functionally interdependent phases. In the first phase, one must consider the methods of measurement to be applied to the geodesy of the paradoxical shadow-realm. This may be identified conveniently as the challenge of measuring the "curvature" of *physical space-time:* reconstructing an image of the physical process from study of the behavior (change) of the shadow which that process casts upon the shadow-world of visual-perceptual space-time. It is useful to name this mathematical problem: "the *geodesy* of physical space-time." In the second phase, we are considering the "subjective issues" which Riemann identifies under the rubric of his criticisms of the work of Herbart: the means by which the human mind may render intelligible to itself those methods of discovery by means of which mankind's power over nature is increased *per capita* and *per* square kilometer. In the second phase, we are addressing the paradoxical question: "What is human knowledge?"

Perhaps the simplest, and also relevant way to grasp Riemann's notions of a general geodetic of physical space-time, is to look at the apparent algebraic consistency of Kepler's and Newton's formulas for gravitational relationships.

Given, the Newton version of the formulation; ask: what is the *curvature* of the physical space-time in which this algebraic formulation is applicable? The answer should be seen immediately; in first approximation, Newton's formula requires a universe whose physical space-time curvature is determined by that set of harmonic relations which Kepler derived from the beginning-point of Pacioli's and Leonardo da Vinci's treatment of the principle of the five Platonic Solids. This should be viewed as a continuation of the successes of the Classical Greeks, such as Eratosthenes, in discovering the measurable geometry of the solar system from measurements made among the shadows locally visible on the surface of the Earth.

We must think of the primary features of our perceptual apparatus, vision and hearing, as screens upon which the shadow of physical reality is projected. We see then the absurdities which must result if we tolerate the *nominalist* dogma of relying simply upon sense-perceptions, in the way in which the empiricists and other materialists do, and Aristotelians more generally, too. By appropriate "geodetic" mappings of the efficient form of relations ("actions") among physical phenomena, we infer a geometry of a different curvature than the zero-curvature space-time of the Euclideans, of Galileo, of Descartes, of Newton. The result we call "physical geometry," or the "geometry" of "physical space-time," a space which is different than the space-time of simple perception, a "physical space-time" whose "geometry" is not the linear (deductive) geometry of visual perception which Euclid's *Elements,* or the dogmas of Galileo, Fludd, Bacon, and Newton wrongly assume.

This illuminates more brightly the fact, that the efficient substance of physical reality exists for man only in the form of a species of ideas which are not the kind of ideas we associate with sense-perception.

The notion of a Riemannian "curvature" of "physical space-time," is the kind of idea which Venetian Aristotelian philosophers and their students, such as Pietro Pomponazzi, Francesco Zorzi ("Giorgi"), Paolo Sarpi, Francis Bacon, Galileo Galilei, Antonio Conti, Isaac Newton, Giammaria Ortes, Lord Kelvin, and all the modern empiricists and positivists, have insisted must be outlawed from science. That was the contention of Paolo Sarpi and his assets Fludd, Galileo, and Francis Bacon, against the work of Leonardo da Vinci and Johannes Kepler. This was the contention which the Venetian Conti and his puppets, such as Voltaire, Giammaria Ortes, Francesco Algarotti, David Hume, Algarotti's pawn Leonhard Euler, *et al.,*[19] made against the *Theodicy* and *Monadology* of Leibniz.[20] This is key to the irreconcilable difference between Galileo's and Newton's notion of *causality,* in contrast to Plato's, Nicolaus of Cusa's, Leonardo da Vinci's, and Johannes Kepler's notion of *reason.*

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19. The members of Frederick the Great's Berlin Academy Voltaire, Maupertuis, and Algarotti were each and all assets of the Venice intelligence service's Abbot Antonio Conti, the latter the inventor of the Newton myth and the coordinator of Europe-wide operations of defamation and other harassment against Gottfried Leibniz and Leibniz's scientific authority. Voltaire, like Maupertuis and Algarotti, was a confederate of Pisa's Abbot Guido Grandi, and also of Giammaria Ortes, in Conti's project to secure the rehabilitation of Galileo Galilei, and to promote the highly exaggerated reputation of Newton as the "British Galileo." Leonhard Euler was for twenty-five years also a member of that Academy, where he functioned as a "mathematician/hod-carrier" for the anti-Leibniz campaigns of Frederick's "favorites," Voltaire, Maupertuis, and Algarotti.
20. *Cf.* Lyndon H. LaRouche, Jr., *Christian Economy, op. cit.,* Appendix XI, "Euler's Fallacies On The Subject of Infinite Divisibility and Leibniz's Monads," pp. 407-425.

So, Riemann situates as the third clue for his dissertation, his own earlier commentaries upon the work of Herbart. We must depart from the Aristotelian empiricist's preferred domain of mere sense-perception, into the domain of that which Plato defines as "ideas," Leibniz as "monads," Riemann as *Geistesmassen,* and the present writer as "metaphor" or "thought-objects."

The Principle of Higher Hypothesis

The principles of human knowledge are not to be first adduced from what modern times recognize as "mathematical physics," but rather from the standpoint of Classical forms of poetry, tragedy, music, and of plastic art-forms such as the paintings of Leonardo da Vinci and Raphael. Nonetheless, it is not merely convenient, but also necessary today, to see the reflections of creativity upon the domain of mathematical formalism. We pose the proposition: how does formal mathematics identify the true principle of *metaphor,* as in poetry, tragedy, and Classical forms of musical composition?

Considered from the standpoint of formal mathematics, such as a geometry modelled upon the conventional Euclid, all human knowledge appears as the product of a combination of four respectively, successively higher levels of intellectual methods of discovery.

On the lowest level of development of human knowledge, there is the method of formal logic. In this case, an expandable list of mutually consistent theorems is underlain by a common fixed set of assumptions, such as the axioms and postulates of a so-called Euclidean geometry. (It is not necessary to explain here why such an array is sometimes called a "theorem-lattice.") On this level, "discovery" is expressed by the proof of the consistency of some new proposition, a proof which establishes that proposition as an additional theorem of the theorem-lattice as a whole.

After that, all higher levels of discovery of valid new principles of human knowledge lie within the domain of *hypothesis,* as Plato defined this.

Given, some well-defined phenomenon, such as an experimental demonstration, whose existence defies consistency with an existing theorem-lattice. That anomalous, or, better, paradoxical result may be solved only by overturning some part or more of the set of interconnected axioms and postulates constituting the "hereditary generating principle" of the relevant theorem-lattice. Once that correction to the array of axioms and postulates is made, the new theorem-lattice defined by this change of "hereditary germ-principle" must be reconciled with the evidence pertaining to the old, formerly established theorems of the overturned theorem-lattice.[21] A validated such axiomatic revolution, producing a new theorem-lattice superior to the old, is a simple *hypothesis.*

Consider the next, higher-order form of discovery.

To illustrate the meaning of the term *higher hypothesis,* reference the given list of the four general levels of cardinality ("power") in mathematics. Looking back across the internal history of mathematics from the vantage-point of Cantor's higher transfinite orderings, the succession of axiomatic-revolutionary changes defining the succession *rational, algebraic, transcendental, Alephs* mathematical types of cardinalities is derivable by a constant method of hypothesis-making. So, in the language of Plato's *Parmenides,* the conception of this type of constant method of hypothesis-making is a *One,* relative to the four *Many* (the four types of cardinalities).[22]

In the course of time and development, valid types of improvements in methods of hypothesis-making have been discovered. These changes do not render useless the earlier methods, but rather introduce new dimensions of power and range of capabilities to human discovery. Plato identifies the principle subsuming such successive advances in quality of higher hypothesis as *hypothesizing the higher hypothesis.* This principle (of hypothesizing the higher hypothesis) ranks higher hypothesis in order of cardinality (relative power); this principle is a One relative to the Many of the arrayed sequence of higher hypotheses.

It is necessary to extend these notions from the scope of the mathematical example given, to include the higher domain of "physical geometry"—"physical space-time," the domain of physics which is reflected as shadows in the field of our visual imagination, our mathematical vision. As Plato pioneers in this work, the examination of the hypothetical conditionality of a geometrical mathematics as such, frees our minds from the hopscotch of logical formalism, and prepares us to resituate mathematics as a tool for mapping the geodesy of the shadows which physical space-time casts upon the visual imagination.

It is the customary folly of the classroom (and elsewhere), to argue that isolated experiment is the basis for

21. For example, the development of so-called "non-Euclidean geometries," as by Gauss, Bolyai, Lobachevski, and Riemann, superseding "Euclidean" formalism.

22. Just as simple hypothesis, expressed as an interdependent set of axioms and postulates, defines the principle of deductive consistency, so a principle of generation of a type of hypotheses, higher hypothesis, defines a higher, governing "consistency" among all members of array (lattice) of that type. Thus, the combination of Euclidean and all non-Euclidean formal geometries is a Many subsumed by a subsuming principle of purely constructive geometry, a principle which subsumes all possible formal geometries developed in the same axiomatic-revolutionary way.

proof of theorems. A popularized sort of pseudo-scientific illiteracy argues that proof lies in the "repeatability" of the phenomena. The function of such experiments is at best negative: nothing is proven by such an individual experimental test of a particular theorem; rather, experiment aids us in uncovering not only outright errors, but, more significantly, the kinds of anomalies which create paradoxes in the set of assumptions brought to the design and reading of the experiment, or to a kindred observation, such as an astronomical one.

The relevant quality of proof is located at no lesser level of conceptualizing than *higher hypothesis.* An historical overview of physical economy is the most immediately accessible illustration of this crucial point:

The only experimental proof of the truthfulness of a change in scientific method of axiomatic-revolutionary forms of discovery, is a resulting increase in the potential population-density of the human species. This is measured statistically as the correlative of changes in the level of realized scientific progress, and analogous forms of progress.

Emphasis is to be placed upon two readily observed sets of facts. First, improvements in the life-expectancy, health, and reproductive demography of society, as measured in dimensionalities of *per capita, per* household, and *per* square kilometer. Second, improvements in the productive powers of labor, also *per capita, per* household, and *per* square kilometer. These two observable sets of conditions are compared with the presence or absence of those changes in culture brought about through application, as technology, of the discoveries considered.[23]

The following two caveats must be included. Just as the intellectual authority of the discovery of a new theorem within a theorem-lattice rests upon a condition of consistency with the "hereditary" axiomatic principle of that theorem-lattice, so the authority of a particular new hypothesis rests upon the particular type of higher hypothesis to which that new hypothesis belongs. Thus, the putative intellectual authority of all such discoveries, of either variety, depends upon the validity of the type of higher hypothesis by which they are subsumed.

That is to emphasize, that every formalist form of theorem-lattice is underlain by a specific set of interdependent axiomatic assumptions: the lattice's underlying "hereditary principle." Each such principle is thus an hypothesis, an hypothesis which is an individual element of the Many hypotheses which are each and all subsumed by (generated by) a specific type of higher hypothesis.

The concept of higher hypothesis, in turn, is defined by the notion of hypothesizing any higher hypothesis as One of Many higher hypotheses. The One array of these Many higher hypotheses, is ordered by a principle of *change,*[24] the principle of change manifest as an ordering of the relative higher rates of increase of potential population-density associated with one choice of higher hypothesis, as compared to another. It is here that the primary form of existence *scientific truthfulness* is located within human knowledge.[25]

Therefore, a reaction to an action does not occur according to some constant mechanical principle, not according to causality as Galileo, Newton, *et al.* define a mathematical representation of their so-called "laws of motion." Rather, the rule is, that the reaction must be according to some universal lawfulness, implicitly God's Law, or *Reason.*

What is the form of God's Law? It would be plain blasphemy in the extreme to suggest that God's laws are fixed in the sense an Aristotelian method implicitly prescribes a fixed list of "Do" 's and "Don't" 's. We must bring into play the distinction which Plato makes between Becoming and Good: as Georg Cantor insists to pedagogically useful effect, the equivalent, contrasted notions of Transfinite and Absolute. The ultimate of the Becoming is a generalization, as a One, of the Transfiniteness which subsumes all possible hypothesizing of the higher hypothesis: the implicit notion of that timeless and universal principle of Higher Creative Intelligence whose self-change orders the ranking in power of the Many, all possible higher hypotheses. God the Creator, is no less than that, and His practice, His Law can be of no lesser quality than that. That, His Law is Reason; that which conforms to the principle of change known as higher hypothesis, is what Kepler and Leibniz signify by *reason.*

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23. See Lyndon H. LaRouche, Jr., "The Truth About Temporal Eternity," *Fidelio,* Vol. III, No. 2, Summer 1994, secs. IV-V, pp. 15-23.

24. The use of capitalized *One* and *Many* here is employed to stress the implicit paradoxes and solution-principle of Plato's *Parmenides.*

25. As noted in the already referenced "The Truth About Temporal Eternity," the generalized notion of hypothesizing the higher hypothesis is equivalent to Plato's idea of the *Becoming.* This notion exists in two forms. In the first, inferior instance, it exists as a *transfinite* conception, the *Becoming;* in the second, as an *absolute* notion, corresponding to Plato's *Good.* This equation of Cantor's "transfinite" and "absolute" to the "Becoming" and "Good," respectively, of Plato is qualified in the location referenced. The difference between the transfinite and absolute notions, is between "physical space-time" and the same universality of all possible "physical space-time" free of the distinctions derived from introducing the notions of space and time. In physical space-time, development is defined by its position in physical space-time; in the absolute, development is the One which subsumes every time and everywhere. That latter One is a principle of Pure, Efficient, Creative Intelligence.

The Physical Implications of This Distinction

Take as an illustration of this distinction the case of the development of the principle of *universal least action* by Leibniz and Johann Bernoulli.[26] Bernoulli's work on refraction of light in a medium of constantly increasing density, showed that curvature's manifest correspondence to the primary isochronic curvature, the cycloid. This is an example of a Riemannian unique measurement of the curvature of physical space-time, a measurement effected in terms of the shadows which the actual universe casts upon the domain of the visual imagination.

This demonstration satisfied the issues of both "shortest time" (brachystochrone) and "constant time" (isochrone). This showed, in terms of the preceding work of Christiaan Huyghens and Ole Rømer,[27] that the treatment of motion by the algebraic methods of Galileo, Descartes, and Newton must be superseded by the higher geometry of the transcendental domain.

That is sufficient identification of the brachystochrone case for our purposes here. The relevant point situated at the center of that case, is the relationship between Leibniz's notion of *least constraint*[28] and Kepler's use of *reason* where the empiricists put *cause*.

Formally, as the term may be attributed to Plato, Nicolaus of Cusa, Leonardo da Vinci, Kepler, or Leibniz, for example, *reason* signifies the rigorous employment of those faculties of valid discovery of principle coinciding with what has been termed "hypothesis" here, and in other of this present writer's locations.

This discovered principle has the approximate force of an estimation of *God's Law* [*natural law*], which the impulse for action in this universe must obey. The natural law's principle acts upon the impulse for action as a *constraint;* the bending of the impulse to that constraint may be viewed as analogous to a "bending" of the action according to what appears to our visual imagination as a curvature of physical space-time. The imagination of a bending of the shadows of reality serves thus as the representation, in a mathematical way, of our knowledge of the reality so reflected.

Thus, among the most relevant predecessors of Riemann's 1854 dissertation on hypothesis is the work of Johann Bernoulli and Leibniz, in using the characteristics of the general principle of refraction of light to demonstrate Leibniz's principle of *universal least constraint*.[29] The fact that the shortest distance in time corresponds to an isochronic pathway, the primitive cycloid, suffices to prove that vision itself is not located within the algebraic space of the Galileo-Newton notions of causality.

Leibniz, Bernoulli, *et al.,* employed this crucial experiment to discredit the reliance upon algebraic methods by the Cartesians and Newtonians, and to insist upon the non-algebraic (transcendental) domain instead. However justified and important that correction was (and remains), this must not be read to the effect of locating causality within the transcendental, rather than the algebraic domain. One must not forget the agency, creative reason, by means of which the ascension from the algebraic to transcendental domain was accomplished: one must focus upon *the act of discovery* which effected this axiomatic-revolutionary change to a mathematical domain of higher cardinality. From the standpoint of the claims to final authority by the high priests of today's generally accepted classroom mathematics, the implication of these two combined considerations—the matters of curvature and the act of its discovery—is devastating.

This brings us to the final step in the core argument of our point: the ontological relevance of the economics proof of the principle of hypothesizing the higher hypothesis. First, consider the outline of the proof:

1. The ontological actuality of the existence of any discovery, whether of a new theorem, or a new principle of nature (an hypothesis of the Platonic quality), is the method employed to *generate* that discovery. In the instance of a consistent new theorem of a theorem-lattice, the method is the hypothesis which is the method

26. See Johann Bernoulli on the "brachystochrone" problem, in *A Source Book in Mathematics,* ed. by David Eugene Smith (New York: Dover Publications, 1959), pp. 644-655. *Cf. A Source Book in Mathematics, 1200-1800,* ed. by Dirk J. Struik, (Princeton, N.J.: Princeton University Press, 1986), pp. 391-399.

27. Christiaan Huyghens, *A Treatise on Light* (New York: Dover Publications, 1962).

28. Leibniz's notion is not to be confused with later empiricist efforts to concoct a contrasting, mechanistic principle of "universal least action." The first instance of the latter, fraudulent concoction was Maupertuis' claim that he had been the first to discover a principle of least action. This Maupertuis brag was such a brazen fraud that even Maupertuis' former patron, the notorious Voltaire, was provoked to break openly with him. There were also protests against the folly of Maupertuis' scientifically illiterate brag from other immediate associates of the Berlin Academy, in addition to the protesting correspondence from the famous Aristotelian fanatic, and opponent of Leibniz, Christian Wolff. It is useful to note, in the context of the recent decades' antics by the famous "Primate among Parasites," that the same Maupertuis invented the dogma copied by Giammaria Ortes [*Riflessioni sulla popolazione delle nazioni per rapporto all'economia nazionale* (*Reflections on the Population of Nations in respect to National Economy*) (1790)], which was later plagiarized by Thomas Malthus [*An Essay On Population* (1798)], which was the stipulated basis for the methods introduced to biology and social policy by Charles Darwin, and which the Huxley tribes succeeded in embedding in the axiomatic basis of modern empiricist biology and sociology.

29. See footnote 26.

of that theorem-lattice. In the instance of a succession of theorem-lattices of respectively higher cardinality (power), we have a lattice of hypotheses, each ordered with respect to the others in terms of cardinality, and all subsumed by a constant method of generating such a succession of hypotheses, an higher hypothesis.

2. In both examples, every new discovery poses the issue of truthfulness of prior knowledge. (a) In the inferior case, the valid new theorem of a theorem-lattice, the prior knowledge, if measured in theorems, is tainted by a demonstrated *fallacy of composition;* however, the principle (the hypothesis) commonly underlying the generation of all the valid theorems of that lattice, both old and new, is affirmed to be *relatively* truthful, *transfinitely truthful.* (b) In the superior case, the discovery of a new hypothesis supersedes the claims of the previously existing hypotheses; each prior hypothesis suffers the taint of *fallacy of composition,* relative to the new. However, the succession of such discoveries, if they are of a (transfinite) type of discovery, is affirmed to be relatively truthful.

3. In both cases, it is the transfinite relative One which is relatively truth, and the terms of the subsumed Many terms, each taken by itself, is shown to be tainted by *fallacy of composition.* In all cases, the truth lies only in the transfinite Becoming, the type of principle of axiomatic-revolutionary discovery employed, not in the experimental facts associated with the particular case. That type of principle of discovery (e.g., higher hypothesis), rather than any particular hypothesis, is always the ontological location of relative truthfulness.

4. This poses the formal question, whether the relative truthfulness of higher hypothesis is merely the truthfulness of the observer (truth of commentary), or whether this knowledge represents *efficient* truthfulness, in the ontological sense? If the principle of higher hypothesis employed is shown to correspond to something which bounds externally the phenomena of change in natural processes, such as the apparent laws of motion, then that correspondence shows the relative truthfulness of the knowledge of principle to be ontologically efficient, rather than merely contemplative.

The fact, that technological progress in the productive powers of labor causes an increase in the potential population-density of the human species, in terms of consumption and productivity *per capita, per* household, and *per* square kilometer, reflects the process of scientific progress, premised upon Plato's Academy at Athens, and unleashed by the mid-Fifteenth Century Golden Renaissance. The fact that the increase in humanity's (re)productive power correlates with the measurable increase of power (cardinality) of the geometrical-mathematical representation of the succession of discoveries employed, shows that the anti-Aristotelian, Platonic principle of creative discovery underlying the Renaissance and its heritage is the relevant standard of ontologically valid truthfulness, and the relative falsehood of the arguments raised by the Enlightenment and other opponents of that Renaissance.

It would be an error to imply that this progress has been solely, or even almost entirely the result of progress in natural science so-called. What we are able to demonstrate formally in mathematical terms reflects the same principle nunderlying creative composition in the Classical (e.g., anti-Romantic, anti-modernist) forms of poetry, drama, music, and painting. It is the whole development of the mind, as poetry, drama, music, and painting typify such breadth, which is the generator of progress, as the creative compositions in Classical art-forms are the principal means by which the individual's capabilities for creative scientific work are developed.

The function of mathematical physics is properly defined in formal terms as Riemann's hypothesis dissertation defines it. We act upon, and are acted upon by a universe unseen by our sense-impressions, a universe whose imaginable reflections are the shadows which the real universe casts upon the screens of our combined visual and auditory imagination. By aid of the scientific tricks of a higher sort of "geodesy," the task of mathematical physics is to decode the actions which are represented to us by means of those sensory shadows, to adduce the reality of that real universe which exists only outside the ken of our mere sense impressions.

If we can prove in such ways that there are changes in the shadowy actions which cannot be accounted for by the action of shadows, as shadows, upon shadows, but that these actions belong to a universe which has a different curvature than that of our visual imagination, we have shown that Plato was right on this point, and all of his critics in fundamental and pervasive error.

In that case, the notion of the ontologically primary expression of existence is shifted away from Aristotle and his quibbling, "Trotskyist-like" imitators. What is ontologically primary is the *change* upon which datum the geodetic measurement of physical space-time is premised.[30]

In that case, then we cannot project "laws of motion" from assumptions respecting percussive or radiant inter-

30. This is the *change* of Heraclitus, and also the *change* which appears as the given hint for the solution of the ontological paradox posed by Plato's *Parmenides.*

actions among seen or assumed[31] shadows. Rather, we must demonstrate that the laws of motion, or analogous action of change are of the form of laws which act "externally," as outside constraints, upon the motion of the shadows. These laws are represented by our highest appreciation of the principles, of the form of higher hypothesis, which have been generated by creative discovery as our present state of knowledge. Thus, we must substitute the universality of "least constraint"—constrained by the law reflected to us as higher hypothesis—in place of the mechanistic Galileo-Newton hypotheses respecting motion.

We must see Kepler's development of the first comprehensive mathematical physics from the starting-point of the uniqueness of Plato's five regular solids as a prime example of the application of this principle of least constraint prior to Leibniz. Hence, Kepler employs "reason," where his plagiarists, the inferior Galileo and Newton, put the mechanistic term "cause."

Once we have adduced the relevant application of such a principle of least constraint, the relations among the actions reflected to us as shadows are to be judged according to the common constraint which those interacting actions must satisfy. Thus, the notion of a definite, non-zero curvature of the physical space-time reflected as shadows upon the visual imagination, is the most important working conception in all mathematical physics.

In Conclusion: Metaphor

The other principal topics bearing upon this matter have been more or less adequately treated afresh in previously published recent locations (in addition to those treatments of the same matters in print or public lectures one or several decades earlier). Nonetheless, the following feature of the matter of metaphor requires a bit of special emphasis here.

All rational human knowledge is derived from the beginning-point of a rigorous definition of the absolute distinction between a mental act of valid creative-mental discovery and a mere deductive opinion, the latter premised upon citing some authority. Without a grounding in that prerequisite, all said in the name of philosophy in general or science in particular is unproven assertion. The Platonic notion of higher hypothesis, as I have repeatedly emphasized the provable (regeneratable) reading of that notion, is the precondition for all competent statements on matters of fundamental principle in philosophy in general, or science in particular. It is here, in respect to an explicit notion of such higher hypothesis, that all truthful human knowledge is rooted, in that all notions of ontological reality are rooted.

The principal difficulty throughout European civilization (in particular) today, may be fairly described as merely a difficulty of false opinion. That false opinion is derived from Venice's Sixteenth Century and later reassertion of the authority of Aristotle's method. The central feature of that Venetian damnation of the human soul is typified by the cases of Pomponazzi, Henry VIII's Zorzi, by the influential Bellarmino and his contemporary Paolo Sarpi. The common ruse for that Venetian damnation of the soul is the Venetian's war against Cardinal Nicolaus of Cusa's method of *docta ignorantia,* the Venetian's argument that the basis for knowledge is the interpretation of sense-impressions, excluding consideration of those kinds of ideas by means of which axiomatic-revolutionary discoveries in knowledge were achieved.

Thus, on these grounds, for example, no adherent of Aristotle's method can be a Christian, or a Jewish follower of Moses. For, that which separates man from the beasts, which places man above the beasts, is the power of creative reason, the quality of creative reason which defines man as in the image of the Creator. Creative reason is the substance of that human soul which the Aristotelian Pomponazzi insisted he did not possess (except, perhaps, in the Orphic way, of being awarded one on his entry into Hades). Creative reason is *imago dei,* is *capax Dei;* without it, there is no *imago Dei,* no *capax Dei.*

Here, in the matter whether the poor have creative reason (and, therefore souls), lies the key objection to Christianity by the Venetian oligarchy. That is the international Venetian oligarchy headed by the ruling "Primate among Parasites" of our time, the "Doge of Edinburgh's" British Royal Family.[32] For these oligarchs, like the evil tyrants of Canaan's thalassiarch Tyre before its imitators, Venice and the London Levant Company, the lower classes must not be educated "above their station," or fed too well, lest those lower classes become more numerous than the better classes find tolerable, or, might even become misled to believe, that members of the lower classes are at least as much in the image of the Creator as those decadent, one might say even "degenerate," royal and other oligarchical families of today.

In short, if the understanding were to spread, that each of us is equally in the image of the Creator at our birth, by virtue of possessing creative powers absent in the beasts, the time allowed for the continuation of usury, Malthusianism, and other expressions of oligarchical

31. "Assumed" = inference of the existence of unseen discrete objects, in the sense of sense-impression's objects, as, for example, in the very small.

32. Or, perhaps, in deference to Prince Philip's long leadership of the anti-Christian, anti-human, World Wildlife Fund, shall we say, more strictly, the "Brutish royal family"?

degeneracy upon this planet might be greatly foreshortened. That, the oligarchy of this planet will not tolerate. Hence, the perpetuation of the Venetian Party, whose current headquarters is generally considered to be London's financial center, the monarchy, and the lackeys who attend to those reputed potencies.

Putting this point most inelegantly (but without error), the rise of the human species' potential population-density above that of the higher apes is due entirely to what are fairly, if loosely described as improvements in culture, improvements which are entirely the product of new ideas generated through mankind's capacity for the kinds of changes in ideas which formal logic must regard as "axiomatic revolutionary." *Man, unlike all other species,* is a species which reproduces itself through the production of ideas, ideas whose existence depends upon the special faculty, however mutilated, which exists even within those oligarchs who may deny its presence within themselves. Thus, the history of mankind is the history of ideas, a history which cannot be judged competently except by reference to that agency which all Aristotelian and analogous method implicitly denies to exist: creative reason, that which sets the existence of mankind above the beasts.

The consciousness of this distinction is the essential quality of the individual's ability to achieve a *valid* sense of personal identity. Whenever one either effects an axiomatic-revolutionary discovery, as in scientific hypothesis, or a comparable achievement in art, or, failing that, nonetheless re-experiences the act of such discovery by earlier scientific discoverers or creative Classical artists, one is participating in an idea, a principle which is itself of "world-historical" importance and benefit for all of humanity. In this way, and only in this fashion, can the individual participate in fulfilling the work of generations before, and contributing to the advancement of all humanity, present and future.

The person who has achieved a conscious sense of his or her participation in history through individual powers of creative reason, ceases to be an individual within the immediate, local here and now of a human herd, and becomes consciously a participant in humanity as a whole. That person is no slave, no serf. That person is qualified to vote intelligently, to speak in the councils of self-government, and to be elected to responsible office in those processes of self-government, or some other executive function in society. In a prudent society, no lesser qualification is demanded as prerequisite for the individual's performance of any among those functions. Without such qualifications, the individual is a tragic wretch, either perhaps a Don Quixote, living shrewdly in a world of fantasy, or, a Sancho Panza, who could never govern an island, because his head cannot govern the passions below his own waistline.

For such reasons, since Paolo Sarpi and his faction elected it were better to take over and corrupt the new institutions of science, rather than seek to suppress them by brute force, the principal concern of Sarpi and his followers has been to work toward the general "dumbing down" of the human species through the exclusion of all consideration of the creative principle of discovery from the mathematical and related representations of science. Sarpi played a direct hand in arranging this practice, through such assets as Galileo, Robert Fludd, and Francis Bacon. Descartes and Newton typify the long list of intellectually corrosive, Venice-controlled figures in the history of actually and putatively scientific institutions. In the Eighteenth Century, the Berlin Academy's Voltaire, Maupertuis, Algarotti, Euler, Lagrange, Lambert, and the French Encyclopaedists typify those corrupted figures of influence operating within scientific institutions directly under the control of Venice intelligence agents, such as Conti and Algarotti, to the purpose of eliminating the heritage of Cusa, Leonardo da Vinci, Kepler, and Leibniz from science. Immanuel Kant, the Marquis de LaPlace, Augustin Cauchy, and the circles of Germans and others under the control of Britain's Lord Kelvin, typify the continuation of this Venice tradition during the Nineteenth Century.

Thus, because of the influence of Paolo Sarpi's cult of empiricism, and kindred influences, one of the more popular hallmarks of pseudo-scientific practice is that tactic employed by the ever-juvenile *idiot savant,* John Von Neumann, in his own and Oskar Morgenstern's *The Theory of Games and Economic Behavior,* in which the authors premise Von Neumann's entire dogma upon the axiomatics of a "Robinson Crusoe model."[33] Similarly, the naive, or miseducated student of science, deludes himself that his observation of the "repeatability" of a phenomenon is in the nature of scientific proof, or, similarly, that science is statistics. The failure to see one's individual self as *imago Dei* and *capax Dei* in terms of consciousness of generation of hypothesis by means of creative mental acts, is the key to toleration of a quality of academic serfdom, is key to the unfortunate condition of a man who might have become a scientist if he had met the first prerequisite, of knowing himself to be in the living image of the Creator by virtue of conscious deployment of his own creative powers of hypothesis.

The "Robinson Crusoe" model was directly a reflection of the influence of the Sarpi school's version of Aristotelian empiricism, the dogmas of Francis Bacon, Galileo Galilei, Thomas Hobbes, René Descartes, John

33. John Von Neumann and Oskar Morgenstern, *The Theory of Games and Economic Behavior,* 3rd ed. (Princeton, N.J.: Princeton University Press, 1953), chap. 1, "Formulation of the Economic Problem," pp. 1-43.

Locke, Isaac Newton, David Hume, Adam Smith, Jeremy Bentham, *et al.* This model begins with man as an individual beast, the solitary individual, governed by an inner repository of what Adam Smith describes with the words: "Nature has directed us to the greater part of these by *original and immediate instincts.* Hunger, thirst, the passion which unites the two sexes, the love of pleasure, and the dread of pain, prompt us to apply those means for their own sake, and *without any consideration of their tendency to those beneficent ends which the great Director of nature intended to produce by them.*"[34]

This same argument, copied directly from such Venetian agents as Maupertuis and Giammaria Ortes, posed so in Smith's 1759 *Theory of the Moral Sentiments,* served as the basis for his notorious dogma of the "Invisible Hand" in his famous anti-American tract, the 1776 *Wealth of Nations.*[35]

In historical reality, human existence is the result of the generation (and regeneration) of valid new higher hypotheses, hypotheses, and theorems, an accomplishment achieved in no other way than through development and exercise of those creative powers of individual minds which the Aristotelians such as Pomponazzi and the empiricists deny to exist, and which the agnostic Aristotelian Immanuel Kant of the *Critiques,* like Orphic Gasparo Contarini, professes to be unknowable this side of Hades. Thus, the vital interest of the human species is the social role of the creative mental powers of the individual in producing and reproducing the ideas upon which the continued existence of society as a whole depends absolutely. Thus, the only moral individual is one whose adopted primary self-interest is not what Smith terms "original and immediate instincts," but, rather, precisely a preoccupation with those kinds of ideas which are formulated and employed in "consideration of their tendency to those beneficent ends" which are plainly identified in the Judeo-Christian Book of Moses, *Genesis* 1:26-28.

The entire empiricist/Enlightenment method of the Seventeenth and Eighteenth Centuries is premised upon the same irrationalist Aristotelian principle which Smith presents in the cited, radically gnostic[36] version. Empiricist method always returns to two presumptions. First, the Hobbesian, Lockean presumption described by Smith, of man as the primal-instinct-governed individual actor and observer as the "cell-form" of all knowable reality. Hence, Robinson Crusoe as the aboriginal founder of political-economy and "chaos theory." Second, the dogmas of Aristotle's method of deductive irrationalism: the denial, by evasion or other means, of the existence of a "divine spark of reason" in the individual person, the denial of a quality of creative reason which is typified by the axiomatic-revolutionary overthrow of each and every claim made by Aristotle respecting either existence or the interpretation of phenomena and dogma.

For more than two thousand years, Aristotle has been the most influential adversary of reason and science, and the most potent force in the weakening of Christianity through resort to that corrupting method. Were it not for the corrosive influences of empiricist Paolo Sarpi and his like, the corruption of science by Sarpi's Venetian methods, as Galileo and Newton typify this, would have been obvious, had it ever come to exist within the leading institutions of science.

Typical of the institutionalized problem of our decadent civilization of today: "Political science" is a pseudo-science, invented by the "Madame Blavatsky" of the French and German Enlightenment, the notorious Madame de Stael.[37] Rip that lying abomination out of our universities, to reside with astrology, witchcraft, Malthusianism, and phrenology among the pathetic superstitions which set poor ignorant wretches apart from sane men and women. In the vacant place in academia so provided, place the study of dirty Venetian and kindred politics within the history of science. Had there not been such dirty politics in the highest places of political authority within the institutions of science (and the charitable oligarchs who fund, and thus control science's peer-review and educational programs), the mechanistic notion of causality would never have supplanted the principle of reason upon which such figures as Plato, Cusa, Leonardo, Kepler, and Leibniz founded it.

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34. Adam Smith, *The Theory of the Moral Sentiments* (1759) (emphasis added).
35. This 1776 work was the product of an assignment given to Smith by his employer, the British East India Company's Lord Shelburne, beginning 1763. That assignment was to prepare work which would assist Shelburne's British Venetians both in prosecuting London's wars to realize the objective finally realized in 1815, to subjugate France, and in crushing the upstart American colonist's insistence upon economic independence and self-government. Smith was assigned to work with the network of Abbot Antonio Conti's Voltaire and Physiocrats in France and Burgundian Switzerland, to devise a dogma of political-economy which was an adaptation of French Physiocrat dogma to the mercantile and financial inclusions of late-Eighteenth-Century British philosophical radicalism. From the standpoint of economics, the principal targets of Smith's enterprise were the continental cameralists in general, and Colbert and Leibniz in particular. Modern "chaos theory" is no more than a ideological buncombe, dredged out of the gutters of mathematical formalism, packaged to restate the moral indifferentism of the cited passage from Smith's *Theory of the Moral Sentiments.*
36. Clearly, Adam Smith's "Invisible Hand," Senator Phil Gramm's remarkable achievement in vulgarizing even the vulgar Professor Milton Friedman, and the modern "chaos theorists," are each and all preaching a secular form of a "mystery religion," in the full-blown, Delphic heritage of the Apollo-Dionysus-Orpheus cult.
37. *Cf.* Michael J. Minnicino (unpublished manuscript).