

Pieter Bruegel the Elder,  
'The Fight Between Carnival  
and Lent,' 1559 (detail).

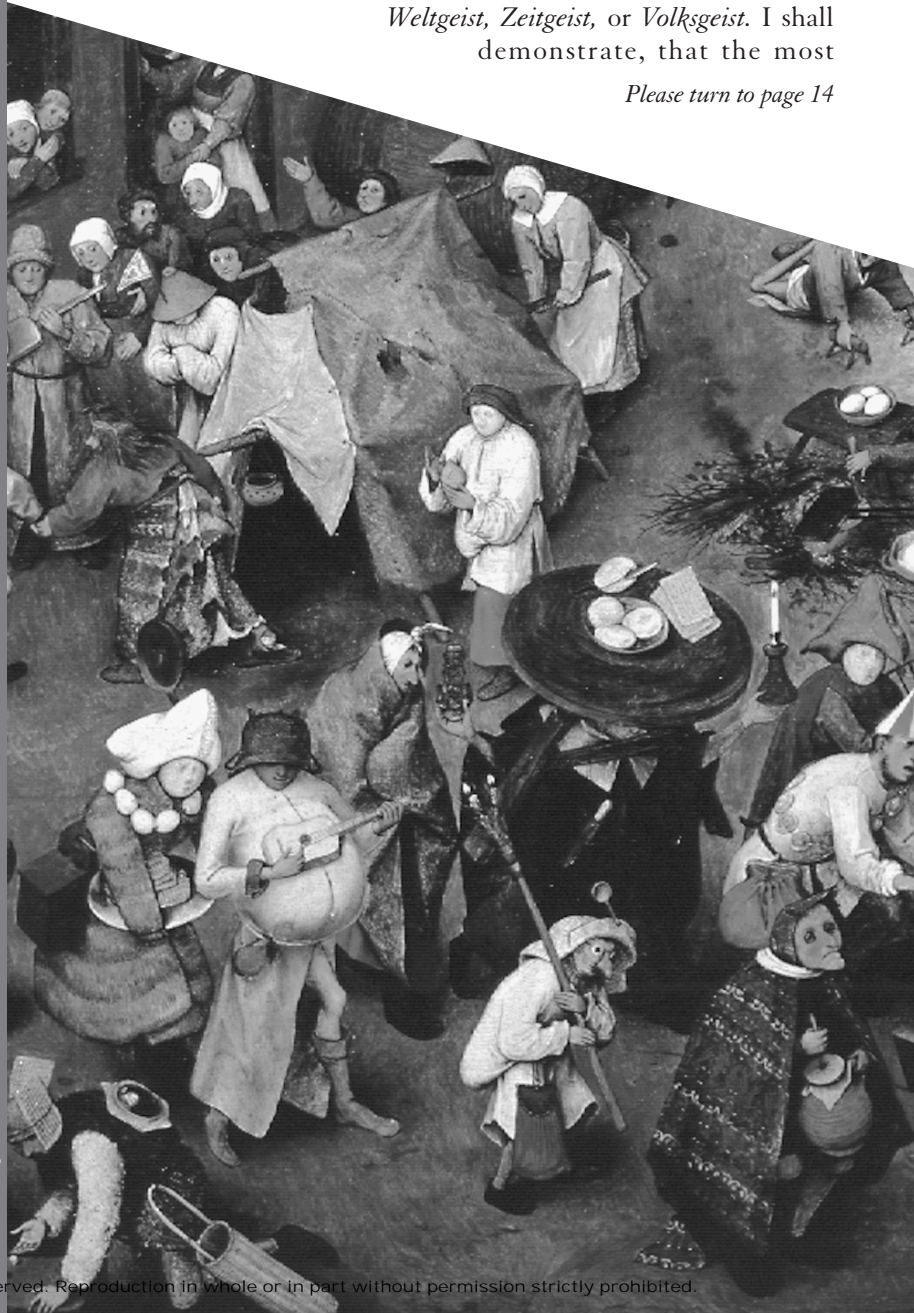
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My purpose here is not to dissect a corpse, but to cure the living of a potentially fatal mental illness.

On the surface, the pervasive degeneracy of today's popular culture, seems to have been unleashed by the rock-drug-sex counterculture introduced to the U.S.A., from Britain, as a new mass-culture, since the middle of the 1960's. In fact, today's popularized, existentialist counterculture, is merely the terminal phase of an approximately century-long, global process of degeneration of the culture of European civilization. I shall show here, that that foregoing judgment of mine is not to be viewed as a mere matter of my choice of taste, but corresponds to a scientifically determined matter of truth; nor is the phenomenon an inevitable outgrowth of that mystical process which G.W.F. Hegel and his crony, Karl F. Savigny, identified, as the *Weltgeist*, *Zeitgeist*, or *Volksgeist*. I shall demonstrate, that the most

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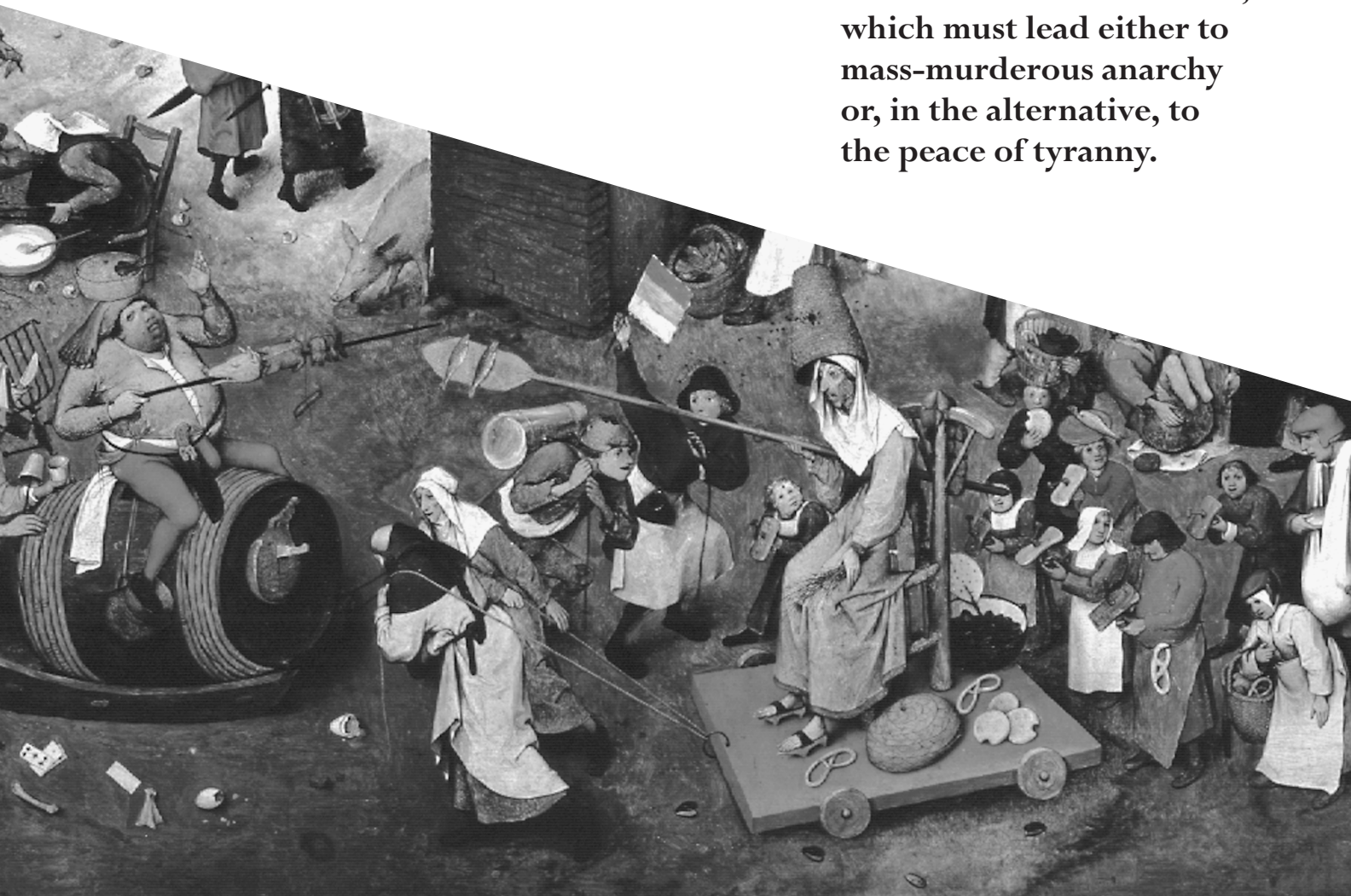
Etich Lessing/ART Resource, NY

# The Classical Principle In Art and Science

by Lyndon H. LaRouche, Jr.

September 29, 1997

Classical art has the specific function of educating the passions, and thus providing the individual within society that personal moral character on which the successful emergence and continued existence of a democratic republic depends absolutely. Otherwise, the idea of a society governed by the majority opinion among immoral men and women, is a contradiction in terms, which must lead either to mass-murderous anarchy or, in the alternative, to the peace of tyranny.



recent three decades is distinct from preceding phases, as it represents the terminal phase of a century-long process of popular cultural decay.

The argument to be demonstrated here, is, specifically, that the present existentialist trend in current, relevant majorities' academic and other opinion, is most fairly described, as a form of mass psychosis. As a psychosis, it is, in historical perspective, as Barbara Tuchman's *A Distant Mirror*<sup>1</sup> implies: an epidemic mental disorder, akin to the spread of the Flagellant and related, lunatic cults during the middle of Europe's Fourteenth-century "New Dark Age." The proliferation of wildly gnostic and even outrightly satanic charismatic cults, including the late Queen Victoria's British-Israelite cult, echoes, and typifies, the mass-insanities spread in the name of religion, during that "New Dark Age."

Like Europe's mid-Fourteenth-century proliferation of mass-psychotic cults, the collapse of European culture to today's levels of morbidity, did not occur all at once, nor has the Classical European culture of 600 B.C.-A.D.1900 vanished entirely, even at this point. Around the world, as during Europe's middle- to late-Fourteenth century, there is still a relative, if diminishing handful of scientists, as of performing artists who can reproduce the levels of thinking represented by the greatest poets and musicians of Nineteenth-century Europe and North America.

However, those qualifying exceptions noted: In the main, in virtually all parts of the world, as typified by the spread of the satanic cult of rock into religious services, even into the churches in Rome, the recent cultural state of affairs is a disaster inflating itself into a catastrophe. As for science: typified by the influence of the celebrated "ozone hoaxster" F. Sherwood Rowland, most recent science graduates no longer know what science is.

Today's trends in popular culture parallel syphilis, tuberculosis, or AIDS. It was not spread as an epidemic of sudden death, such as bubonic plague; it has developed as a lingering, degenerative disease. It is, in fact, a mental disease, which must be considered, functionally, as either an expression of mass psychosis, or as tantamount to a mass psychosis. That is, this popular culture represents systematic damage to that specific mental function which distinguishes the human species from the beasts. It represents the degeneration of the functioning of the individual human mind, from the characteristically human reliance upon cognitive capabilities, to domination by a relatively bestial, "lemming-like" emphasis upon "politically correct," emotional-associative behavior.

In U.S. history, for example, the high-water marks in North American culture are represented by the close associates of the principal architect of our freedom, Benjamin Franklin, and the rallying of this republic to become its true self, by President Abraham Lincoln. As the very language of the 1776 U.S. Declaration of Independence and of the Preamble to the U.S. 1789 Federal Constitution expresses this, the circle around Franklin adopted the leading ideas of Gottfried Leibniz, in rejection of the moral degeneracy characteristic of the British empiricism of John Locke. Boston opium-trader, Manhattan banker, and Confederate slave-owner, typify the moral degeneracy which our patriots were obliged to combat within our own borders, and from abroad. The crushing of the treasonous Confederacy, under the combined leadership of Henry Carey, Abraham Lincoln, and Generals Grant and Sherman, continued to be the high-water mark of morality in the U.S.A., into the generation which fought World War II, and slightly beyond. However, unlike Presidents Franklin Roosevelt and Jack Kennedy, Presidents Teddy Roosevelt, Woodrow Wilson, and Calvin Coolidge were in no sense patriotic, or even moral. It was the rise of the influence of the defeated Confederacy to power in Washington, once more, through such spawn of the Confederacy as Teddy Roosevelt and Ku Klux Klanner Woodrow Wilson, which marks the extended process of moral decay of U.S. culture over the course of this century to date, a moral degeneracy which accelerated under the post-Kennedy rise of the rock-drug-sex youth-counterculture, to become the hegemonic influence in academic life today.

Until now, the last gasp of mass-based, true patriotism in the United States, was the role of the Lincoln tradition's influence on President John F. Kennedy's generation, in mustering support from themselves and their children, for the great Civil Rights resurgence of the early through middle 1960's. After the events of 1968, morality, culture, and the Franklin-Lincoln tradition of patriotism, seemed to have vanished from the opinion of the majority, sunk into the quicksand of the countercultural swamp of "post-industrial" utopianism.<sup>2</sup>

Thus, over the course of the recent three-hundred-odd years, since the dictatorship of William of Orange, estab-

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1. Barbara Tuchman, *A Distant Mirror: The Calamitous Fourteenth Century* (New York: Alfred A. Knopf, 1978).

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2. President Lyndon Johnson's sponsorship of two Civil Rights bills typifies this generational character. Many among those who had come to adulthood under the leadership of President Franklin Roosevelt, had experienced a reactivation of the American patriotic heritage of Franklin and Lincoln; in later years, however reluctantly, sometimes this represented a moral impulse within them which they found it difficult to resist. For the most part, that quality of moral impulse vanished with the impact of the 1964-1970 countercultural takeover of the "'68ers'" generation.

lished in England in the events of 1688-89, the ebb and flow of culture and morality in English-speaking North America, can be traced in terms of generations. The post-World War II generations have been, overall, a cultural disaster. Only a great cultural shock, analogous to the period of Civil War under President Lincoln, could bring the members of those generations back from post-industrial fantasy-life, into the realm of reality.

The prompting of today's moral and cultural decay in the U.S.A. and Western Europe, is more quickly, and usefully recognized as the combined impact of the 1962 "missiles crisis," cover-up of the Kennedy assassination's perpetrators, and nightly TV images of the Vietnam War, into terrifying the overwhelming majority of the "Baby Boomer" generation into a mass, "lemming-like" flight from reality, into the so-called youth-counterculture of the middle to late 1960's.<sup>3</sup> The results of that "shell-shocked" state of virtual mass cultural psychosis have been, first, the spread of an existentialist counterculture echoing the doctrine of Nazi philosopher Martin Heidegger and such Heidegger clones as France's Jean-Paul Sartre, Jacques Derrida, and Frantz Fanon. Second, over the course of the recent thirty years of erotic "Post-Modernism," the university students of the mid-1960's have come to occupy nearly all the topmost positions in government, business, education, the artistic professions, and the mass entertainment and "news" media.

Once more, what I have expressed, thus, is no mere opinion. It is a hard, rigorously scientific fact. Nor, do I gloat over the sad condition into which so many among my fellow-humans have been plunged by today's popular culture. My purpose here is not to dissect a corpse, but to cure the living of a potentially fatal mental illness. The timeliness of my exertion to this latter purpose, is located in my certainty that the "Pearl Harbor-like" effects of the ongoing disintegration of the present international financial and monetary systems, can be employed to an effect akin to the anti-Windsor effect of the murder of Princess Diana, as a "reality shock," to reverse the youth-counter-

cultural revolution of the mid-1960's, to shock today's fantasy-ridden "Baby Boomer" and "X" generations into a sense of reality.

Yes, during the Truman years, there was cultural decay among a fairly estimated ninety-five percent of the returning veterans of World War II. The reliance on search for truth went out the window, replaced by a compelling sense of the importance of "political correctness" in choosing mate, career, and opinions expressed in public, or even in the privacy of the bedroom.

However, during the 1946-1966 years, among university populations (in particular), the form of corruption common among campus beneficiaries of the "G.I. Bill of Rights," was typified by concern to earn the degrees which would gain well-paid and prestigious careers within a society still dominated by a cultural orientation toward investment in the benefits of scientific and technological progress. Education became, more and more, a pursuit of the popular, erotic notions of what current opinion acknowledged as prestige and family financial security, without the distracting, often contrary burden of searching for truth.

Unfortunately, most of those students (and their professors) were morally corrupted, in the sense of Jena Professor of History Friedrich Schiller's famous concept of the *Brotgelehrte*: in my free translation, "people who are trained to sing for their suppers, not for the sake of music." During the Truman, Eisenhower, and Kennedy years, the cultural "status" still enjoyed by the idea of "benefits of scientific and technological progress," fostered a shadowy approximation of respect for truthfulness, in the guise of occasional expressions of respect for the general idea of scientific and analogous rationality.<sup>4</sup>

That was no longer true after the takeover of the minds of the majority of "Baby Boomers," under the influence of the anti-science virus embedded in the core-belief of the true believer in "post-industrial" utopianisms. For relevant, affected strata of "Baby Boomers," that "cultural-paradigm shift" removed all semblance of governance of behavior by notions of some absolute obligation to considerations of rationality and morality. Morality was replaced by "Ethics," in the sense of "politically correct" agreements among persons of mutually irreconcilable principles and factual belief. The "ethics"

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3. Although these events triggered the susceptibility for the wildfire spread of the "youth counterculture" of the middle to late 1960's, a thorough treatment of that pathological effect must not overlook the powerful, cumulative impact upon suggestible young minds of "mind wars" indoctrination of the population, during the interval from approximately 1951, into the 1975 collapse of the government of South Vietnam. Without the "mind wars" indoctrination of the population, as led by the London Tavistock Clinic and Institute, and coordinated through the U.S. networks of Britain's Brigadier Dr. John Rawlings Rees, Eric Trist, the circles of Dr. Kurt Lewin, and by the Tavistock-connected networks of the so-called "Frankfurt School," the campus "Baby Boomers" of the middle to late 1960's could not have been brainwashed into adopting the specific type of "rock-drug-sex youth counterculture."

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4. This was complicated by the influence of H.G. Wells and Bertrand Russell, as typified by the radical nominalism (e.g., William of Ockham) spread through channels such as the utopian, sociology-dominated "science fiction" fads, especially those of the past fifty years. The "Ozone Hole" hoax of F. Sherwood Rowland typifies the degree to which the practice of the Ockhamite positivism of Bertrand Russell clones Norbert Wiener and John Von Neumann had degenerated by the early 1970's.

of the variously so-called “therapy,” “encounter,” or “sensitivity” group, became the hegemonic substitute for morality and reason within the ideological core of the “Baby Boomer” generation. Thus, that ration of that stratum, may sometimes be better described as the “Baby Boomer degeneration.”

A study of history shows, that a properly crafted approach to inoculating “Baby Boomers” and others against the potentially negative effects of the oncoming “reality shock,” is the only tactic by means of which this cultural degeneration might be abruptly reversed, and this civilization thus rescued from what would be, otherwise, its “lemming-like” plunge into self-induced, inevitable doom.

The first step is to diagnose the illness: to identify the relevant symptoms, and to track these disabling symptoms to their causes. To that purpose, the first steps examine the most relevant symptoms as expressed in three domains: music, literature, and the issues of the centuries-long dispute, since Johannes Kepler, over the mathematical calculus. The second, final step, is to show the commonly underlying source of these three classes of symptoms.

## The Case of Wilhelm Furtwängler

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The leading figure of Twentieth-century musical life is the celebrated conductor Wilhelm Furtwängler. All the other great ones of this century, such as Pablo Casals, for example, have been co-thinkers of Furtwängler’s practice respecting the performance of music. Furtwängler’s use of the descriptive expression, “performing between the notes,” or “performing from behind the notes,” points our attention directly to the crucial issue of all Classical musical performance, and, implicitly, to such other expressions of great Classical art as are to be found in literature, and in Classical forms of plastic arts from Scopas and Praxiteles, through Leonardo da Vinci, Raphael Sanzio, and Rembrandt. It is also the fundamental principle of science, as science was defined by Plato and his Academy, by Nicolaus of Cusa, and by such outstanding followers of Cusa’s founding of modern physical science as Luca Pacioli, Leonardo, Johannes Kepler, Gottfried

Leibniz, Carl Gauss, and Bernhard Riemann.

In short, for all competent Classical musicians,<sup>5</sup> the performance of music is not the “interpretive performance” of the notes on the written musical score. Those notes are no more than the poor, linear footsteps, left behind in the pale sand of the score, left by the being which had first walked there. As Furtwängler emphasized, in various statements on this matter: a great musical composition, as reflected by such footsteps, is the product of a cognitive, creative process which occurred within the mind of the composer. He emphasized, repeatedly, that the task of the performing musician, is to relive the process of cognition by which that composer generated that composition. I echo him, thus, in insisting on the principle, that although the performer must walk in that composer’s footsteps, using the specific notes and other indications supplied by the composer, it is the performer’s (and, also the audience’s) reliving of those processes which occurred within the mind of the composer, the which must govern the performance of those notes, rather than a stylized interpretation of those mere notes as such.

To perform Wolfgang Mozart’s work, you must gain not only technical performing skills, but you must also recapture within your own mind, the way in which Mozart thought, within the privacy of his own, sovereign cognitive processes of musical composition. You must relive being Mozart, in the same sense that one can know a principle of nature, only by reliving the sovereign cognitive processes mustered by the original discoverer of that principle. This will be made clearer at relevant later junctures in this report.

In order to reconstruct the composer’s process of composition, the performing artist must locate the composer, functionally, within the actual historical setting in which the composer had lived and worked. Thus, the early composition of a Josef Haydn was situated historically, chiefly, in the intersection of the reflected influence of Johann Sebastian Bach, as reflected through the influence of Carl Philipp Emanuel Bach’s work, upon Haydn’s native, Italian-influenced, South German musical tradition of the middle Eighteenth century. Wolfgang Mozart’s work was strongly influenced, earlier, by the two Haydn brothers, and, beginning the early 1780’s, by intensive study of the well-tempered polyphonic methods of J.S. Bach.

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5. The use of the term “Classical” here signifies not merely the Classical literature, as from J. S. Bach through Brahms, but other music which satisfies the standard of the Classical principle, as Haydn, Beethoven, Brahms, and Brahms’ protégé Dvořák addressed the Classical potential of certain actual, or potential qualities of folk-song. “Classical” is employed, thus, in the sense of rejection of such

forms of degeneration into eroticism expressed by Romantics such as Claudio Monteverdi and Franz Liszt, and the Modernist, Post-Modernist, and the satanic fad inhering in both the rhythms and lyrics of “rock.” Respecting “Modernists” and “Post-Modernists,” to raise the issue of competence, is comparable to debating the artistic qualities of smell exuded by ripe garbage.

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*Mozart, in Vienna, presents the score of his opera "Don Giovanni."*

Beethoven was situated, chiefly, in that modification of the Italian tradition imposed by J.S. Bach, Haydn, and Mozart. The work of all Nineteenth-century Classical composers, including Schubert, Mendelssohn, Schumann, and Brahms, is permeated by the overreaching influence of Bach, Haydn, Mozart, and Beethoven. Even Romantic opponents of the Classical method, such as Franz Liszt, or Hugo Wolf, parodied the Classical tradition at the same time that they expressed their intent to reject it.

Notably, beginning with his compositions centered around the six "Haydn Quartets," Wolfgang Mozart used his higher comprehension of the implications of J.S. Bach's *A Musical Offering* (and, at least, implicitly, also Bach's *The Art of the Fugue*), to establish a new method of composition, known, generically, today, as *Classical motivic thorough-composition*. As former *Primarius* of the Amadeus Quartet, Norbert Brainin, discovered, some decades ago, Mozart's dedication of that set of six quartets to Josef Haydn, reflects a specific debt to Haydn, Haydn's pioneering of a method of motivic composition in his own, six "Russian Quartets," Opus 33. In musicology, almost the entirety of the leading work of Beethoven, some of the work of Schubert, of Schumann, and, most notably, Brahms, continues a tradition of motivic thorough-

ough-composition typified, in germ-form, by Mozart's Köchel 475 *Fantasy* on Bach's *A Musical Offering*.

Thus, to approach the performance of any Classical composition, from Haydn through Brahms (most notably), one must read Bach's establishment and development of well-tempered polyphony, as Mozart, Beethoven, and others traced the method of motivic thorough-composition to its origins in Bach. The first task of the performing artist, is to become steeped in that work of two centuries, to have relived, in the performer's own mind, the succession of musical-compositional discoveries which each composer represented in respect to his, or (e.g., Clara Schumann) her predecessors. Each composition must be reexperienced by the performing artist from

that standpoint. Each composition, so historically situated in that way, must be reexperienced, as a process of composition, within the mind of the performing artist.

Compare this case, for music, with my use of Riemann's 1854 habilitation dissertation<sup>6</sup> as a point of reference, for describing the mental processes by means of which a validatable original discovery of physical principle is generated within the same, sovereign cognitive processes of the individual mind.

## How Leibniz's Calculus Is Untaught

For our purposes here, it is useful to recapitulate what I have stated in numerous earlier locations as a defense of Leibniz's calculus against the usually accepted classroom misrepresentation of that calculus, as supplied by

6. Bernhard Riemann, *Über die Hypothesen, welche der Geometrie zu Grunde liegen*, paragraphs 1 and 2, in *Bernhard Riemanns Gesammelte Mathematische Werke*, ed. by H. Weber (New York: Dover Publications reprint, 1953). Hereinafter identified as [Riemann: *Werke*].

Augustin Cauchy. The hoax of linearization in the small, as argued by Antonio Conti's Dr. Samuel "Samiel" Clarke,<sup>7</sup> as restated, more rigorously, by Leonhard Euler, by Cauchy, and others, expresses the same pathological state of mind in mathematical ideas about physical science, as the defective mental condition of those celebrated musicians whose methods Furtwängler opposed.

Bernhard Riemann's essential significance in the history of science, is, that he was the first to liberate mankind from a deluded, Aristotelean interpretation of Euclid's geometry.<sup>8</sup> Riemann, basing himself most immediately on Carl Gauss's implicitly "non-Euclidean" development of a general theory of curved surfaces,<sup>9</sup> defined every validated principle of nature as having the function, within a general notion of physical-space-time manifolds, of a "dimension" in Euclidean geometry. Implicitly, the ideas of space and time, themselves, existed for Riemannian physics solely as experimentally validated principles of physical space-time, rather than as "self-evident," axiomatic presumptions.<sup>10</sup>

Furthermore, Riemann argues, that, although such discovered, and experimentally validated principles had a certain independence from one another (hence "dimensions"), one could not adduce the internal metrical qualities of physical space-time merely from those "dimensions" themselves. One must take into account the fact, that the metrical characteristics of any physical space-time manifold are themselves the subject of experimental determination.<sup>11</sup> That latter notion, of such a metrical

characteristic, is the notion of curvature, as curvature attains its metaphorical expression in the higher reaches of the extended orders of hypergeometries envisaged in the relevant work of Gauss and Riemann. In other words, the interaction among the "dimensions" of a physical space-time manifold is expressed, in metrical terms, as the experimentally established Gauss-Riemann curvature characteristic of action which is internal to that manifold.

That takes us back to Johannes Kepler, as well as to the interrelated notions of *Analysis Situs*, and of the families of catenary-like curvatures, as both were presented by Leibniz. Our focus here, should be upon the grounds Kepler proposed to future mathematicians, the development of what became Leibniz's calculus. Our attention is also referenced to Vol. VI of the collected works of Carl Gauss, on the subject of astrophysics, specifically Gauss's unique success, beginning 1801-1802, in determining the orbits of the then recently-discovered asteroids. To keep the argument as simple as possible, begin with this discovery of those orbits by Gauss.

The historical setting, and the immediate facts of the matter, are presented in rather full detail, for the benefit of the reader who would wish to check the present writer's reading from those sources: in the published Carl Gauss *Werke*, the associated, published, collections of Gauss's correspondence, and a rather rich supplementary literature, including relevant primary sources presented. With those assurances supplied, we summarize the par-

7. See, "The Controversy Between Leibniz and Clarke," in *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*, ed. by Leroy M. Loemker (Dordrecht, Netherlands: Kluwer Academic Publishers, 1989), pp. 675-721. Dr. Clarke was Isaac Newton's controller, acting for the relevant chief of Venice's foreign-intelligence service at the time, the same Paris-based Abbot Antonio Conti (1677-1749), who deployed Voltaire, Physiocrats such as François Quesnay, and such Leibniz-haters of Frederick II's Berlin Academy as Pierre-Louis Maupertuis and Leonhard Euler. It was Conti who invented the Isaac Newton of today's popular legends. Newton's own scientific accomplishments were relatively trivial, as John Maynard Keynes has documented the reality of the long-mysterious chest of Newton papers. [See "Newton the Man," in *Newton Tercentenary Celebration* (Cambridge: Cambridge University Press, 1947), pp. 27-34.] The work often attributed to Newton was done by other associates of the London Royal Society. Newton's unworkable parody of Leibniz's 1676 version of the calculus, is typical. It was the Conti network's Leonhard Euler who later set forth Clarke's argument on the calculus in the form copied by "Cauchy's fraction."

8. *Ibid.*, p. 272.

9. *Ibid.* See also, *Carl Friedrich Gauss Werke* ["*Werke*"], in 12 volumes, plus correspondence (Hildesheim-New York: Georg Olms Verlag, 1981): *Theoria residuorum biquadraticorum*, I (1828) and II (1832), Vol. II, pp. 65-148; *Allgemeine Auflösung der Aufgabe die Theile einer gegebenen Fläche so abzubilden, dass die Abbildung dem*

*Abgebildeten in den kleinsten Theilen ähnlich wird* (1822: Copenhagen Prize Essay), Vol. IV, pp.189-216; *Disquisitiones generales circa superficies curvas* (1828), Vol. IV, pp. 217-258. The subject-matter of the latter two Gauss papers (the necessary, non-linear self-similarity of the trajectory of lawful processes in the infinitesimally small, to the same trajectory in the large) is of crucial significance respecting Gauss's original solutions for the orbits of the asteroids Ceres and Pallas [*Werke*, Vol. VI], and for appreciating the physical implications of the axiomatic difference between the original Leibniz calculus and the bowdlerized version of it (e.g., the "limit theorem," or "Cauchy's fraction") popularized by the notorious plagiarist, Leibniz-hater, and political and scientific adversary of the Ecole Polytechnique's Gaspard Monge, Augustin Cauchy.

10. Riemann, *ibid.*

11. "*Es muss also entweder das dem Raume zu Grunde liegende Wirkliche eine discrete Mannigfaltigkeit bilden, oder der Grund der Massverhältnisse ausserhalb, in darauf wirkenden bindenden Kräften gesucht werden,*" Riemann, *op. cit.*, p. 286. In that context, "continuous manifold," as distinct from "discrete," refers to a process determined by a continuous principle of action, whether or not the affected interrelations among the phenomena within that manifold are themselves continuous or discrete in form. Such continuous processes lie, ontologically, in the domain which Plato identified as "higher hypothesis," which corresponds to Leibniz's usage of the term "*Analysis Situs*."

ticular case in the manner and degree needed to indicate the relevant, crucial point under consideration at this moment.

Gauss's calculations of the orbits of the relevant, then just recently observed astronomical bodies was Gauss's first notable application to physics of the revolutionary methods he had featured within his ground-breaking *Disquisitiones Arithmeticae*.<sup>12</sup>

The principle which Gauss applied was that set forth by Johannes Kepler: the lawfully determined trajectories of motion in physical space-time must be understood as reflecting some universal physical principle which is as much manifest in the smallest conceivable interval of that trajectory, as in the large. Kepler's concern to this effect was heightened by his concern with the fact that the orbits of the planets were elliptical, rather than circular. That concern pointed to the importance of our ability to measure non-constant curvature, even in observations of very small intervals of the trajectories. For this, Kepler proposed that future mathematicians develop a calculus capable of addressing the problems of measuring non-constant curvature of extremely small intervals of action.

This had led Leibniz to his initial, 1672-1676 successes in developing an integral and differential calculus, as reflected both in the work he submitted to a Paris publisher, in 1676, and in the surviving manuscripts of his work in this subject-area, in the Hanover archive, from the 1672-1676 interval. In the context of Kepler's concern: given, a non-linear curvature within an infinitesimally small interval of a trajectory, how might we measure that curvature, and how might we integrate a complete trajectory (e.g., orbit) from that measurement?

This is the characteristic difference, which shows that Newton's work provides no calculus at all, not even a defective one. This is also the characteristic difference, which points to the axiomatically fraudulent assumptions underlying Cauchy's well-known derivative fraction.

Gauss applied this Kepler-Leibniz principle of the calculus, as he himself had addressed the relevant conceptual problems of an experimental mathematical physics in his *Disquisitiones*. This led to Gauss's remarkable success,

in surpassing everyone else in the only successful adducing of the orbit of Ceres from the same array of observational data employed by others in the same period. Whereas the others relied upon what we would fairly describe as curve-fitting approaches to an array of observed points, Gauss concentrated on finding several intervals of observation which had the same curvature, and extrapolating from that congruence to project the entirety of the relevant Keplerian orbit with the harmonic characteristics which Kepler had prescribed for a missing planet in a specified orbit between those of Mars and Jupiter.

At this point, the reader should be informed that these considerations, pertaining to the dispute over the axiomatic underpinnings of a calculus, have a distinct, decisive relevance for competent understanding of the musical principle cited by Furtwängler. Once this point is grasped, it is feasible to render transparent those specific, cognitive characteristics of the mental-creative processes of the individual person which are the place of generation of all validatable discoveries of physical principle, and all valid expressions of composition and performance of Classical works of music, poetry, drama, and plastic art-forms. On that account, the writer is accountable for his making a credible effort to identify that relevant aspect of the issue of the calculus even to the proverbial "non-mathematical" reader.

To that latter purpose, I borrow an illustration presented by my colleague Dr. Jonathan Tennenbaum, a problem he presented as a challenge to the audience, during a recent, summer conference at Oberwesel, Germany.<sup>13</sup> From the standpoint of an observer at a fixed point on the surface of the Earth, the sun appears to make a daily, circular orbit of the Earth. Yet, by means of observation from the surface of the Earth, it has been known for nearly 2,500 years (at least) that the Earth orbits the sun, an orbit which we know to be elliptical, as Kepler has already shown us. Therefore, solve this paradoxical juxtaposition of circular and elliptical orbiting.<sup>14</sup>

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12. (Leipzig: 1801) The republication of the original, Latin edition of this extraordinary work occupies Vol. I of the *Werke*. There are good German and English editions extant. A good modern education in mathematics and physics would feature the student's reworking of this Gauss work as a central, and controlling feature of the combined secondary and undergraduate education in scientific method. This work either reflects the leading work of Gauss's predecessors, since Classical Greece, or serves as a most convenient pedagogical benchmark, by aid of which the work of Gauss's predecessors may be brought into focus for critical understanding of the leading issues of modern scientific practice.

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13. When a member of that audience challenged me, after Dr. Tennenbaum's address, to solve the paradox, I declined to do so, for reasons I explained at that time. He had presented this as one of a series of paradoxes, which the individual members of the audience must solve by their own powers. I limited myself to restating the same paradox in my own preferred terms, indicating that the solutions to my own and Dr. Tennenbaum's formulation of the case would be identical.

14. This was already known during the Third century B.C., centuries prior to the willful hoax perpetrated by Claudius Ptolemy. There was never an honest reason for any authoritative institution, in the Roman Empire, or later, to believe that the sun orbited the Earth.



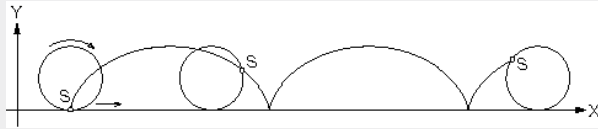


FIGURE 1. The curve traced out by point *S* (the sun) as its circular orbit rolls along the “*X*” (time) axis, is a cycloid.

Place a circle, representing the apparent daily orbiting of the Earth by the sun, such that the circle’s center is initially placed at the intersection of a two-dimensional, Cartesian graph. Let the “*Y*” axis represent the position of the sun in that orbit, and the “*X*” axis, time. Thus, the apparent rotation of the sun around the Earth will generate the image of a cycloid [SEE Figure 1]. However, the position of the observer on Earth is changing relative to the Earth’s orbiting an elliptical pathway around the sun. Thus, the cycloid generated is not a simple cycloid, but a quasi-cycloid (called an “epi-cycloid”), which rolls along the elliptical orbit, rather than a Cartesian straight line [SEE Figure 2].

The images of space-time determined by the geometric products of cycloid and conic sections bring us into the domain of the famous curve known as a catenary,

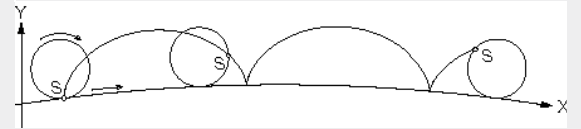


FIGURE 2. The Earth’s elliptical orbit makes the apparent daily motion of the sun an epi-cycloid.

and of related functions. If we continue in this direction, into Riemann’s revolutionary principle of physical space-time,<sup>15</sup> we depart the domain of Euclidean notions entirely, into the domain known as hypergeometric functions. In this domain, from the catenary into still higher geometrical cardinalities, the Cauchy theorem (e.g., “fraction”) has no existing correspondence to reality.<sup>16</sup>

15. Riemann, *op. cit.*

16. Relevant is Gauss’s introduction of his students to the domain of hypergeometry, as reported by Ludwig Schlesinger [*Werke* X, 2, p. 102] [SEE Figure 3], also by R. Fricke [*Werke* VIII, p. 103] [SEE Figure 4], and Riemann’s related representations, such as a figure he supplied as part of his *Vorlesungen über die hypergeometrische Reihe* [*Werke*, Appendix, p. 93] [SEE Figure 5].

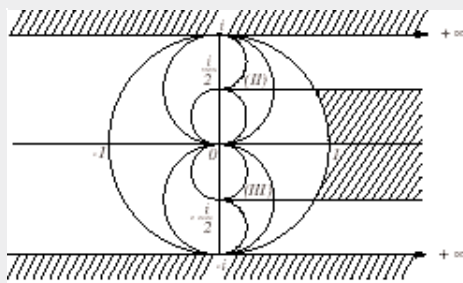


FIGURE 3. Diagram by Ludwig Schlesinger.

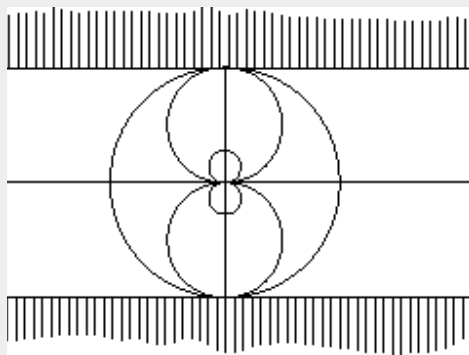


FIGURE 4. Diagram by R. Fricke.

In his work on the arithmetic-geometric mean and hypergeometric functions, Gauss invented what became known as the “modular diagram,” which portrays the internal relationships among entire families of functions, as defined by their underlying geometrical characteristic (“modulus”). Each locus represents a family of functions with a common modulus: these families are related to each other by transformations which “map” the indicated regions onto each other in a “conformal” manner.

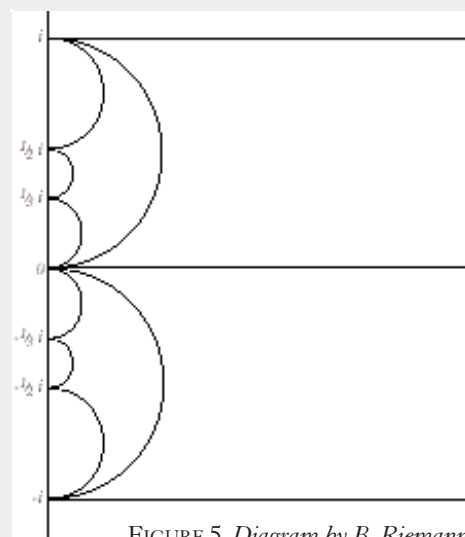
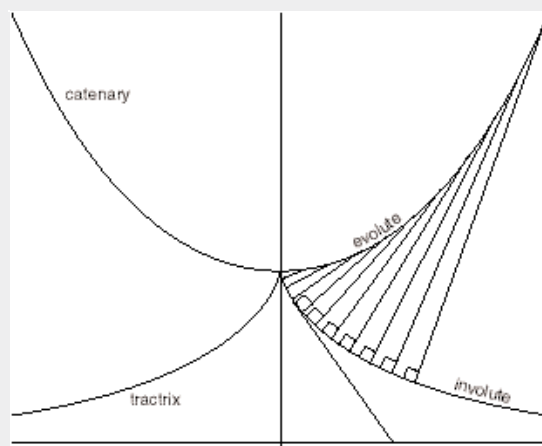
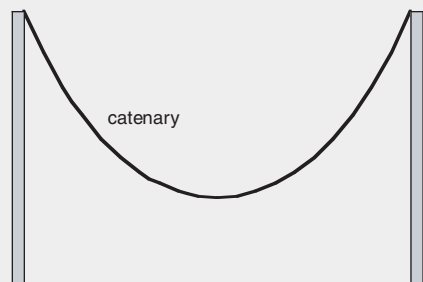


FIGURE 5. Diagram by B. Riemann.

FIGURE 6. A catenary is the curve formed by suspending a rope between two points. The endpoint of a taut thread unwound on a catenary, traces out a curve called a “tractrix.” The perpendiculars to the tractrix are tangent to, and envelop, the catenary; this is called an involute-evolute relationship in geometry.



Notable, is Leibniz’s extensive attention to the implications of René Descartes’ refusal to accept the existence of the catenary [SEE Figure 6]. For our purposes here, to show Leibniz as a follower of Kepler and forerunner of those notions of hypergeometry presented by Gauss and Riemann which are relevant for the subject of our present paper, it is sufficient to excerpt the Loemker edition’s translation of two citations from Leibniz himself:

Besides quantity, figure in general includes also quality or form. And, as those figures are equal whose magnitude is the same, so those are *similar* whose form is the same. The theory of similarities or of forms, lies beyond mathematics and must be sought in metaphysics [e.g., *metamathematics, hypergeometry*–LHL]. Yet, this has many uses in mathematics also, being of use even in the algebraic calculus itself. But, *similarity* is seen best of all in *situations* or figures of geometry. Thus, a true geometric analysis ought not only consider equalities and proportions which are truly reducible to equalities, but, also, similarities and, arising from the combination of equality and similarity, congruences.<sup>17</sup>

. . . It is a very true and indubitable law of nature, that the same thing, so far as in it lies (always persists in the same state) . . . a law which both Galileo and Gassendi, and some others as well, have long held. . . . [N]ot only did Kepler observe the very beautiful law of nature, according to which bodies describing a circular or curved path strive

to leave it in the line of the tangent straight line (others may have preceded him in this), but, he already made clear that application of this law which I consider essential in making clear the cause of gravity. This is apparent from his *Epitome of the Copernican Astronomy*. . . .<sup>18</sup>

As Kepler emphasized, the planetary orbits are forms whose similarities, including self-similarities, reside in the forms themselves, forms associated, dependently, with both position, and with the species of harmonic characteristics defined by Kepler’s treatment of both observed, and *unobservable* orbits. Crucial is the case of the orbital characteristics which Kepler calculated for that which Gauss measured, approximately two centuries later, for asteroid fragments of a missing planet. Kepler derived this *necessary* orbit for a missing, exploded planet from a principle of formal similarities, exactly as Leibniz defined *Analysis Situs*. Thus, Gauss’s success, achieved by Gauss’s choice of method, represents a devastatingly crucial experimental proof-of-principle, supporting Kepler’s and Leibniz’s conception of a calculus, against the method of Descartes and of empiricists such as Newton, Clarke, Euler, and Cauchy.

In summary of that particular argument, the facts to be considered, are principally two.

More simply, in physical space-time, there exist trajectories, whose characteristic metrical qualities are non-constant (e.g., non-linear) in the extremely small interval, such as the infinitesimal. Small as it may be, the curva-

17. Loemker, *op. cit.*: “On Analysis Situs,” from pp. 254-255. [I have added necessary corrections to the translator’s punctuation, resisting temptation to supply other improvements–LHL]

18. *Op. cit.*, p. 395. [Some punctuation supplied–LHL]

The principle which Gauss applied was that set forth by Johannes Kepler: The lawfully determined trajectories of motion in physical space-time must be understood as reflecting some universal physical principle which is as much manifest in the smallest conceivable interval of that trajectory, as in the large.

*Johannes Kepler instructs his sponsor, the Emperor Rudolf II.*



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ture in the infinitesimal is similar to the curvature of the trajectory as a whole. Thus, the presumption of the Cauchy fraction, while convenient for purposes of engineering calculations, where no issue of principle is involved, is absurd relative to a calculus suited to proof-of-principle arguments respecting physical reality.<sup>19</sup> The notion of “linearization in the small,” as proposed by Clarke, Euler, Cauchy, and others, can not be supported.

More deeply, in the exemplary case of planetary orbits, we are dealing with phenomena which are repetitive over the relatively longer term, such as thousands of years. Looking into those orbits more deeply, we find that the changes in characteristics of the orbits appear to be repetitive, in terms of tens of thousands, hundreds of thousands, or millions of years. Such hierarchies of repetitiveness appear to us as suggesting “laws of the universe,” *patterns of similarity* which, in fair approximation, lie outside the reach of any ordinary action among particular objects; indeed, it appears that these patterns of similarity subsume, in the sense of bounding, the allowed possibilities for interaction among particular objects within the system. Planetary orbits, and recurring patterns in observed stellar constellations, have long exemplified this case.

Thus, Leibniz’s allusion to the term “metaphysics.” Like Dr. Tennenbaum’s referenced example, the concentric (i.e., hypergeometric) trajectories defined by such very long cycles within the solar system, represent a con-

tinuing principle of action. This principle, we associate with the most inclusive, long-term component we can adduce, as we situate the apparently circular, daily, cycloidal orbiting of the sun, around the Earth, with the superior, elliptical, annual orbiting of the Earth around the sun. As in the case of the small aberrations which the solar cycle imposes upon each infinitesimal interval of the daily apparent orbit of the sun, so, the longest solar, galactic cycles must be manifest as curvature within the smallest interval of all observed events. That difference in curvature within the infinitesimal, thus reflects the true trajectory of our solar system, our galaxy, over even billions of years. That difference, rightly adduced, contains the key to the trajectories of the relevant portion of the universe over the relevant very long time, up to the point we can introduce further such alteration in the relevant concatenation of principle.

Hence, Leibniz’s insistence upon “non-constant curvature” as a standard of reference for measurements within the infinitesimally small. Hence, Gauss’s stunning success, in contrast to his ostensible competitors, in defining the Keplerian harmonic characteristics of the orbit of Ceres.

The presently “politically correct” standard of the mathematics classroom, the well-trodden pathway of linearization in the infinitesimally small, the notion of Clarke, Euler, Cauchy, *et al.*, thus becomes a pseudo-scientific absurdity, the instant we depart from the practice of consideration of nearness to zero as a crude, but useful engineering approximation, into attempting to define physical principles according to such crudities. The fur-

19. E.g., Riemann, *op. cit.*, “III. Anwendung auf den Raum,” pp. 283-286.

ther into astrophysics, and into time, we extend our inquiries, the more refined our conception of universal principle must be; similarly, the more we penetrate into regions of smallness previously unexplored.

The case of Descartes' silliness, in denying the existence of the catenary curve, is relevant. In contrast to Leonardo da Vinci, who discovered the catenary/caustic phenomenon of natural principle, Descartes is an Aristotelean (or, to quibble, a neo-Aristotelean), who argues from the naive reading of a Euclidean geometry of space-time, and, therefore, excludes, even hysterically, everything which can not be derived from that in a simple-minded, deductive way.<sup>20</sup> Leonardo, his follower Kepler, Leibniz, Gauss, and Riemann, insist that reality is located in a non-Aristotelean, Platonic reality, a universe which man knows through the success of man's creative cognitive powers in discovering validatable principles through which mankind's power over the universe is willfully increased. In other words, physical laws are products of those qualities of individual mental activity which generate those newly discovered principles, by means of which the universe's submissiveness to the human will is increased. In other words, the universe was pre-designed to submit only to those qualities of the individual human mind which express *natural law*, those qualities of cognitive potential which define every man and woman as not as oligarchical and other evil society defines slaves and serfs, as "wretches," not "worms" before the throne of some pagan's "Emperor God," but as beings whose essential goodness is that they are "made in the image of God."

This is a notion which escaped the comprehension of the slyly contemplative oligarchical lackey, Aristotle, and of those submissive mentalities which follow Aristotle in such an oligarchical, licky-lackey-like tradition.

So much said, thus far, the time has come to turn to the mental processes, located behind the opaque screen of sovereignty of the individual person's cognitive processes, processes by means of which validatable discoveries of physical principle are effected, as they can not be effected by any alternate means. It is in those mental processes, that the secret of our ability to discover the laws of the universe is lodged. Thus, the precondition for scientific

truthfulness, is the rigorous exploration of those mental processes, by means of which validatable discoveries of principle are achieved. Therein lies the essence of the Classical principle of art and science.

## Relativistic Physical Space-Time

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Situate the foregoing within the context provided by my sundry, earlier published treatments of the subjects of metaphor, and of "The Essential Role of 'Time-Reversal' in Mathematical Economics."<sup>21</sup> That summary is supplied here, so as to define the context indispensable for situating a specific point respecting the connection between non-linearity in the infinitesimally small, and that functional distinction which sets the human individual absolutely apart from and above all other species. Summarily, step by step, that context is the following.

1. The evidence upon which the proof of that essential distinction depends, is the fact that there is no similarity in species-determination of *potential relative population-density*, between the human species and each and all of the higher apes, or any other animal species. Under the conditions of the past two millions years, the ecological potential of all higher apes, combined, has never exceeded several millions individuals. In contrast, the human population of this planet reached 100 millions during Hellenistic times, and, although it had not exceeded several hundred millions by Europe's Fourteenth century, rose rapidly, as a result of the Fourteenth-century establishment of the European form of modern national economy, to more than five billions today.<sup>22</sup>
2. The proximate source of this distinctive achievement in human economy, is the discovery and employment of validated discoveries of principle by the action of individual persons' developable sovereign cognitive potentials. Scientific and technological progress, so ordered, defines that advancing mastery of nature responsible for

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20. The development of the concept of the catenary, and its relationship to the tractrix, was initiated by Leonardo da Vinci, but its modern elaboration was chiefly the work of Christiaan Huyghens and Gottfried Leibniz, during the latter decades of the Seventeenth century. (Cf. Christiaan Huyghens, *The Pendulum Clock*, trans. by Richard J. Blackwell (Ames, Iowa: Iowa State University Press, 1986), Parts II and III.) The issue of the catenary was among the several principal foci of Leibniz's demonstration of the essential incompetence of the methods of René Descartes and Isaac Newton.

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21. E.g.: "On the Subject of Metaphor," *Fidelio*, Fall 1992 (Vol. I, No. 3); "Mozart's 1782-1786 Revolution in Music," *Fidelio*, Winter 1992 (Vol. I, No. 4); "On The Subject of God," *Fidelio*, Spring 1993 (Vol. II, No. 1); "History As Science," *Fidelio*, Fall 1993 (Vol. II, No. 3); "The Essential Role of 'Time-Reversal' in Mathematical Economics," *Fidelio*, Winter 1996 (Vol. V, No. 4).

22. E.g., "The Essential Role of 'Time-Reversal' in Mathematical Economics," *op. cit.*

increase in mankind's potential relative population-density.<sup>23</sup>

3. The most appropriate method of reference, for representing this role of scientific and technological progress, is that derivable from Riemann's revolutionary definition of the geometry of physical space-time, his 1854 habilitation dissertation.<sup>24</sup>
4. The form of individual's mental activity, by means of which mankind's increasing power over nature is effected, has the same form as the generation and resolution of metaphor, the latter the defining distinction of Classical forms of poetry, music, drama, and plastic arts.<sup>25</sup>
5. The interdependent functional relationship between science, and Classical art, so defined, is the key to the superiority of Classical art (and science) over all known alternatives. The exemplary case-study for this purpose, is an examination of the superiority of the modern nation-state over the oligarchical forms of society traditional to morally inferior cultures of ancient Mesopotamia, Rome, Byzantium, European feudalism, or, for comparison, the morally, vastly inferior Aztec culture. It is the role of Classical art-forms in shaping the moral outlook of society, which makes possible forms of society in which high rates of scientific and technological progress, combined, can be sustained.

It is my best judgment, with much experience to support that conclusion, that the case for the Classical principle is most readily demonstrated from the standpoint of fundamental discoveries of physical principle. Once that is done, the case for Classical art-forms follows readily. We now proceed accordingly.

On condition that we are clear as to which of these meanings we are referring to in any situation, we need not be troubled by the fact that there are two distinct, alternate meanings for the term "science," neither of which excludes the other, but neither of which should be mistaken for the other. Simply, typified by the existence of solar-astronomical calendars internally dated to Central Asia during the period the Vernal Equinox was in Orion (circa 6,000-4,000 B.C.),<sup>26</sup> man developed and used discoveries

which we would classify as adoptable by modern science, but which were made by societies in which the *idea* of science either did not exist, or we have no evidence sufficient for us to conclude that that idea did exist.

The first absolutely certain evidence we possess, to show that the *idea* of science existed in some culture, pertains to Classical Greek culture. Although there are constructions which lie within the bounds of scientific topics in the remains of ancient Mesopotamian cultures, there is no evidence of the *idea* of science from those cultures; in fact, those cultures were hostile to the *idea* of science.<sup>27</sup>

The case for Egypt is of a significantly different quality than the inferior Mesopotamian cultures. Classical Greek culture's renaissance, during the early centuries of the First Millennium B.C., was significantly dependent upon the beneficial influence of the related cultures of Egypt and Cyrenaica. Plato, who is the most important authority on such matters, makes repeated, strong references to this debt of Solon and his predecessors to assistance from Egypt. This coincides with evidence, that Egypt, from about the Seventh century B.C., or, perhaps even earlier, sponsored the Ionian Greeks against the maritime insolence of the Canaanites, in the eastern Mediterranean, and the Etruscans against the Canaanite influences and maritime strength in the western Mediterranean. Certainly, the astronomy of the Egyptians was impressive, especially when contrasted with the inferior Mesopotamian practice. Did the idea of science as such exist among these Egyptians? Perhaps, among some. So far, positive evidence of the idea of science there, is wanting.

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27. Mesopotamian culture is divided into two phases. The first phase is that of Sumer, a non-semitic ("black-headed") people, probably representatives of an Indian Ocean region maritime culture, related to the "Harrappan" culture of the western region of the Asian subcontinent. This culture interacted with a pastoral, barbarian, Semitic population of the region. The collapse of Sumer preceded a later emergence of a syncretic, Semite-based culture. The lunar calendar of the region typifies the cultural backwardness of the area, relative to more highly developed cultures in other parts of Asia and in Egypt. We owe to a curious, pseudo-Christian, gnostic, "British Israelite" cult, which grew up in Seventeenth-century England and dominated the reign of Queen Victoria, the Nineteenth-century Biblical archeology fad which implicitly claimed that God stood in Mesopotamia to launch Creation. In summary, this cult asserted that the "Ten Lost Tribes of Israel" had migrated to the British Isles, and that the British people, not those the British racists viewed as "the upstart Jews," enjoyed the claims to an Old Testament Covenant, that according to the Padua Old Testament derived by Martin Luther *et al.* from the tradition of the Babylonian Talmud. Hence, British Biblical Archeology, which was premised upon blind faith in Anglican Bishop Ussher's British-Israelite myth of Creation as occurring (in Mesopotamia) in 4004 B.C.

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23. *Ibid.*

24. *Ibid.*

25. "Mozart's 1782-86 Revolution in Music," *op. cit.*

26. Bal Gangadhar Tilak, *Orion* (1893). Tilak's dating (which we have adopted as relevant for our purposes here) of these Vedic calendars was adopted from the work of German astrophysicists.

There is a single crucial idea, which distinguishes Classical Greek art and science from what we know of the highest levels achieved in ancient Egypt. Compare Classical Greek sculpture, as typified by the work of Scopas and Praxiteles, with both Egyptian and Archaic Greek sculpture. It is useful to see a parallel to this in the superiority of western European Classical plastic art-forms, over their archaic Byzantine rivals. Classical plastic art, captures *change* in mid-motion. Archaic art is dull, shallow-minded, its claims to meaning relying upon a device of pseudo-irony, that form of madness known as *symbolic* inference. All Classical art is premised upon the unfolding of an idea; all Classical art is premised upon the sense of beauty which the innermost cognitive processes of the individual mind experience from those works of art whose content is change as we describe that throughout this present report. Such contrasts of Classical to Archaic art, typify the evidence of Classical Greece's relatively unique historical contribution to all of human history and civilization.

For those not fortunate enough to have learned Classical Greek, your case is not entirely hopeless. We can offer the following advice, as modest compensation.

In some respects, in approaching the study of Classical Greek culture, there is, potentially, a significant, if but partially compensating advantage to be derived as a tactic for dealing with relative ignorance of the Greek language itself. Once again, this is not to recommend ignorance of the language, but to point out *the advantage of being forced to overcome that difficulty*. In such a fix, one is obliged to adduce the *ideas* of Greek culture, without becoming excessively occupied with the peculiarities of the language itself; instead of becoming obsessive, as pedants are wont to do, into falling into useless, distracting debates, respecting the meaning of words, we are obliged to supersede the mere words, to search out, and prove the *ideas*. Those literate in Classical Greek were urged to do the same.

That approach to the Homeric epics, the Classical tragedies, and Plato's works, supplies us a precise insight into Classical Greek science, as that science was practised by the founders of modern experimental physics, Nicolaus of Cusa and such among his professed followers as Luca Pacioli, Leonardo da Vinci, Johannes Kepler, and Gottfried Leibniz.

For example, the present writer's first, adolescent encounter with the method of Plato, was the works of Leibniz. Decades later, turning to an intensive study of Plato's dialogues, the writer not only discovered that he already knew Plato's method, chiefly from Leibniz's own mastery of that method, but that he had been devoted to that method during the intervening decades. Illustrating

that argument here and now, provides the backdrop for our treatment of Riemann's fundamental contribution to the theory of knowledge. Indeed, the title, method, and content of Riemann's habilitation dissertation, each and all express, explicitly, and, even more, implicitly, the scientific conceptions and method of Plato, as this present writer learned that method, first, from Leibniz. To that point, consider a few relevant highlights respecting the Classical Greek mind.

The Homeric epics, carry us into a domain, in which no event, in Heaven, Earth, or Hell, occurs, except as a tangle of interactions among the gods, the lesser immortals, and mortal men and women. Since, during recent decades, North Americans, and others, have come to prefer the virtual reality of television's news and entertainment fantasies, to reality, it should not be so difficult for our contemporaries to imagine a domain in which mortal men and women were certain that they knew and mingled with the pagan gods and immortals in precisely the manner depicted by the Homeric epics.

Then, rereading those epics through the eyes of the later tragedians Sophocles and Aeschylus, what emerges is a new phase in Classical Greek thought. From tragedies such as *Prometheus Bound*, we see the Ulysses of the *Odyssey* in a fresh way. Prometheus proudly suffers prolonged immortal torment, to the purpose, that by withholding the secret of Zeus's impulse for self-destruction, Zeus and his pack of Olympians might be assuredly destroyed, that for the benefit of all mankind. Contrary to the Romantic reading supplied by Goethe's *Prometheus* poem,<sup>28</sup> the tragic figure—the "Hamlet"—of *Prometheus Bound*, is not Prometheus, but Zeus! (Before one presumes to read Classical Greek, one should be able to read by rising above words, to the *ideas* which control the ordering of mere words, as from above.) In this way, science—Prometheus—will free mankind from the pagan gods, and from those oligarchical forms of rulership whose image those Olympians apotheosize in their fictive persons. Thus, the poem of Solon is to be read.

Then, in the aftermath of Aeschylus, come Plato's dialogues. Plato: Promethean man, whose enemies are, the oligarchical tradition of Babylon, the Delphi cult of Gaea-Python-Dionysus-Apollo, and the oligarchical lackey Aristotle. Such are the origins, and this the manner of birth, of the Classical Greek idea of science.

As Aeschylus underlines the point, Prometheus is not guilty of *hubris*. Zeus is. Apollo is. Gaea is. Python-Dionysus-Satan is. Men and women are made in the image of God, to exert mastery over the universe,

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28. As, also, in its song-setting by Hugo Wolf.

through the cognitive powers of discovery of principle made innate within each of them. It is Zeus, by oppressing those made in the image of God, who defies and insults the Creator with his own virtual existence. Speak then, of Satan-Zeus, or Zeus as Pretender to the throne of Satan. There, lies the *hubris* in that drama.

How does this power within men and women proceed to exert its competency? I have given the answer in the form specified by Plato, and find the most suitable form of expression of that discovery to be implicitly the relativistic notion of an unfolding physical space-time supplied by Riemann's referenced dissertation.

If we are each even merely reasonable persons, at any moment of our life, we proceed from a certain established belief, a belief which we have tested, and have found to appear to coincide efficiently with the evidence of our experience. But, then, we are confronted, repeatedly, with evidence as firmly grounded as that upon which our current beliefs were premised; and, yet, our past beliefs insist, that the new evidence could not exist in the universe as we have believed it to be. This contradiction, since it is based upon two opposing elements, each equally grounded in the ontological actuality of our interactions with the universe, constitutes an ontological paradox, in the sense of Plato's *Parmenides* dialogue.

By the nature of things, we can not resolve this paradox by any means derived from deductive reasoning. Either the past belief denies the existence of the contradictory body of evidence, or it does not. If it does, in fact, then the old beliefs must be toppled from their position of authority, and replaced by a new belief, which accepts reality. Sometimes, no answer to this paradox is found from among living persons; or, if solutions are proposed, they fail to meet rigorous standards of experimental validation. That paradox may remain, thus, unresolved, over generations. Yet, sometimes, in response to such chal-

**Prometheus is not guilty of *hubris*. Zeus is. Men and women are made in the image of God, to exert mastery over the universe, through the cognitive powers of discovery of principle made innate within each of them. It is Zeus, by oppressing those made in the image of God, who defies and insults the Creator with his own virtual existence.**

*On orders from Zeus, Prometheus is tortured for bringing fire to man.*



Corbis

lenges, the mind of someone proposes that a certain principle, when it proves experimentally valid, enables us to purge the old belief of its error, and to thus establish the required new belief. If such a proposed solution is supplied, we must test it; does the proposed principle have an efficient existence in the universe? Does its existence, then, resolve the difficulty?

Ah, but, then, the real problem is posed by the very fact of such success. Whence did we derive the proposed, subsequently validated solution? By what miraculous agency, was this solution generated? By what process, did that agency, generate that solution? Is this the agency, which expresses man and woman each made in the image of God? Let us restate the same matter in terms of reference coinciding with the burden of Riemann's dissertation.

First, Riemann revolutionizes geometry by noting that each so-called dimension of geometry, including the notions of sense of space and time, to the degree the notion of those dimensions is valid, is not axiomatically self-evident, but has, and must be defined, by means of an experimental basis. This must be a quality of experimental validation corresponding to a discovered principle of physical space-time. Such a physical-space-time geom-

etry, whose axiomatic basis is experimentally defined, is called a *physical-space-time manifold*. Each discovery of an experimentally validated principle, the which resolves an otherwise unsolvable ontological paradox, adds a new principle to the repertoire, and leads to the superseding of the previously established manifold, preceding belief, by a new manifold. *The successive ordering of such a series of manifolds, defines a relativistic physical-space-time.*

Riemann warns, that these extensible, discovered principles, do not, by themselves, sufficiently define the metrical characteristics of the newly defined physical-space-time manifold. We must also find, experimentally, the metrical characteristics (e.g., Gaussian “curvature”) of the specific manifold associated with those principles. Thence comes the notion of the calculus specific to Kepler, Leibniz, Gauss, and Riemann.

Riemann outlines the form of this process of revolutionary progress in physical science, but does not explicitly address the matter of agency in that location. On this matter of agency, he makes a passing reference to the anti-Kantian philosopher, Johann Friedrich Herbart, but does not amplify the significance of that reference there. We find a significant hint as to Riemann’s thinking on this matter of creative agency in some posthumously published metaphysical papers, most notably on the subjects of psychology, metaphysics, and principles of the theory of knowledge.<sup>29</sup> Here, he associates agency with the generation of Platonic *ideas* (*Geistesmassen*), in the strictest sense of Plato’s usage, and, of Leibniz’s Platonic *Monadology*.<sup>30</sup>

On this latter point, we have Riemann’s use of the term *hypothesis*, in exactly the sense Plato and I define the use of that term. For Plato, as in my writings, the simplest expression of “hypothesis” is not as a synonym for “conjecture,” but, rather, as typified by the underlying set of definitions, axioms, and postulates of the deductive entirety of Euclidean geometry. To similar effect, the discoveries of principle which overturn the ontological paradoxes inhering in an established hypothesis, generate a new hypothesis, the which incorporates the validated new principle generated as a solution to the relevant paradox; that is precisely the composition of a Riemannian succession of physical-space-time manifolds.

In that setting, the metamathematical ordering-principle, which Leibniz locates under the rubric “*Analysis Situs*,” the which determines the ordering of such a Riemannian succession of manifolds, corresponds to what Plato defines as an *higher hypothesis*: an hypothesis which subsumes the ordering of a succession of hypotheses

29. *Zur Psychologie und Metaphysik*, and *Erkenntnistheoretisches, Werke*, pp. 509-525.

30. Loemker, *op. cit.*, pp. 643-653.

(manifolds). The notion of Platonic ideas lies, ontologically, within the bounds of higher hypothesis.<sup>31</sup> The generative principle which subsumes the potential for validatable hypothesizing of the higher hypothesis, corresponds to the notion of that agency which enables individual minds to generate validatable discoveries of principle, as solutions for otherwise insoluble ontological paradoxes. This developable, sovereign agency within each human individual, is the substance of “man and woman made in the image of God,” the quality of the human individual which sets all persons absolutely apart from, and above the beasts.

This notion of the role of higher hypothesis as a general solution for all ontological paradoxes, is typified by Plato’s *Parmenides* dialogue. The Eleatic Parmenides serves, as a dramatic figure, in that dialogue, as typifying the axiomatic incompetence of all expressions of reductionism: the materialists, the sophists, the rhetoricians, such as Isocrates, and anticipates the form of sophistry associated with the evil Isocrates’ spy within Plato’s Academy of Athens, Plato’s, and Alexander the Great’s mortal adversary, Aristotle.

The apparent difficulty is, that there is no deductive mode in which this agency, or its action can be explicitly represented. In scientific education, for example, we can express the ontological paradox in terms of language, graphic representations, and actual experimental demonstrations. The proposed results of the discovery, the proposed solution, can be represented in the same terms of communication as the statement of the paradox. The design and conduct of the experiment, which tests for efficient existence of proposed new principle, can be similarly represented. The crucial step, the action of the creative mental processes of the individual mind of the discoverer, can not be represented in any such manner. Nonetheless, the existence, and efficiency of that invisible action can not be denied.

Look at this same proposition from the vantage-point of the teacher and pupils, in a Classical humanist mode of education. The students in that classroom, preferably approximately fifteen to eighteen in number, are assigned

31. E.g., an ordering of successive refinements (improvements in efficiency) of higher hypothesis, is designated as “hypothesizing the higher hypothesis.” In each case, the *ontological* quality of *change*, represented by transition from one hypothesis, or higher hypothesis, to another, corresponds to remedying an experimentally demonstrable fallacy of composition in the preceding hypothesis, or, simply, the exclusion of a falsely assumed principle. Similarly, in Plato, the timeless principle (an attribute of “the simultaneity of eternity”), under which a valid process of hypothesizing the higher hypothesis is subsumed, is termed the *Good*, which, in Plato, is a synonym for the *Unknown* (monotheistic) *God* of the Apostle Paul’s account.



to replicate the original mental act of discovery of some validated physical principle. If those students are successful, they will experience, in their own minds, each of the indicated steps of the original act of discovery. To wit:

Step	Description
(1)	They will be presented, preferably by aid of an experimental demonstration, with the prompting ontological paradox. <i>This is representable.</i>
(2)	They will, if successful, replicate the original discovery, as a proposed solution for the predicament represented by that paradox. <i>This is not representable.</i>
(3)	They will identify the proposed principle of solution which they have generated during Step 2. <i>This is representable.</i>
(4)	They will design, and, hopefully, conduct, a proof-of-principle experiment, to determine the validity of their solution. <i>This is representable.</i>

Yet, it is precisely the second step, which reflects the distinction between that pupil and a mere beast. It is that step, which represents the essence of mankind's relationship to the universe. It is that step, which is the essence of *science*. It is that step which is skipped, or even denied, by virtually all commentary on science in particular, or human knowledge in general, in today's academic, and related practice and belief.

Contrary to the pivotal fallacy, and fraud of each and all among Immanuel Kant's *Critiques* and associated notions of aesthetics: "not representable," is not "unknowable."

The immediate difficulty underlying the problem of representing the action of generating the discovery of a validatable physical principle, is the fact that this action occurs within the bounds of the individual mind's sovereign cognitive processes. Outsiders can not view it by any methods which would substitute for peering into the mental life of the individual by means of sense-perception. Hence, Kant's folly, and that of the materialists, empiricists, and positivists generally. This difficulty is not, however, an insuperable obstacle to knowing "what

the other fellow is thinking."

Pose the issue in the following terms. *How do we know a discovered physical principle?* We come to *know* a principle, as distinct from *merely learning* to mouth a politically correct verbal formulation of a mere doctrine, *by reenacting the mental act of discovery*, as identified by *Step 2* in the illustration supplied immediately above. By reenacting all four steps, a student is able to relive, more or less exactly, the thought-processes of original discovery within the sovereign domain of the individual mind of the discoverer as much as thousands of years past. In the Classical humanist classroom, of, hopefully, fifteen to eighteen pupils and a qualified teacher, this same quality, of connection through replication, is expressed as the approximately simultaneous occurrence of that act of discovery, within the separate cognitive processes of several or more of those pupils. Thus, one mind learns to recognize the ideas in another mind, despite the absence of any possibility of sense-perceptual representation of those processes.

The class of thought-activity which corresponds to such non-perceptible relations among minds, is the class of Platonic *ideas*. All thoughts which merit the name of "knowledge," have the form and content of such ideas. *Hereinafter, restrict the use of the words "idea, ideas" to this meaning: concepts generated by the cognitive processes otherwise associated with the generation of experimentally validatable principles which serve as solutions for the type of ontological paradoxes which we associate here with Classical science and art.* The principle of scientific knowledge, is the principle of such modes of replication, the means by which true individual human "insight" is generated.

If we have replicated the generation of an experimentally validated physical principle within the sovereign cognitive processes of our individual mind, we *know* that validated experience. By committing ourselves to replicate each such principle of the historical development of Classical science and art in that way, rather than merely "learning the answer" from textbook and classroom drill, all of the knowledge (*ideas*) we have gained in that way represents the same four-step experience. The mustering of the agency of creative solutions for ontological paradoxes becomes a recognized, developed capability within us, a capability we may recognize in the relationship between paradox and validated solution in the private mental activity of others. All classes of knowledge so developed, belong to the class of Platonic *ideas*, ideas which exist above the level of sense-perception.

Hence, the founder of the most successful form of Classical Humanist education, Schiller's follower Wilhelm von Humboldt, echoed Schiller exactly in assigning to Classical Humanist modes of secondary education the

task of developing the *moral character* of the student through precisely this cognitive reenactment of the great discoveries of artistic and scientific principle in the history of *ideas*. The rejection of this principle of ideas, and of Classical education, is key for understanding the accelerating rate at which both U.S. education and morality have degenerated at such extraordinary rates, under the influence upon the “Baby Boomer” generation and its progeny, of the past thirty-odd years of “post-industrial” utopianism.

All scientific and Classical-artistic ideas are of this class of Classical Humanist, historically grounded, cognitive development. Since the idea of Classical culture, begins with Classical Greece, the term “Classical” has signified an education rooted in a pre-adolescent child’s wrestling with the Homeric epics.

Despite the indicated difficulties of representation, we are enabled to know a considerable amount concerning both the agency of creative cognitive processes, and its characteristic modes of action. For example, as Plato emphasizes, in passing, in his *Parmenides*, the ontological quality of cognition is *change*. This is not “change” in the sense of the mere differences among fixed objects; it is “change” in the sense, that the existence of objects is the process of change by means of which the existence of those objects, *ideas*, is generated. The experimentally validated transition, from one physical-space-time manifold, to one of higher order, typifies such a principle of change. It is the principle of change itself, which is ontologically primary.

Riemann’s habilitation dissertation points us toward some other facts we may know about this agency and its action. The aggregation of validatable principles which has been passed down to us through the described method of replication, represents a physical space-time manifold (and sequence of successively superseding manifolds) in Riemann’s sense. Thus, in physical science, we know the action not merely as a principle of ontological change, but this process of change has an implicitly hypergeometric structure, as adumbrated by the notion of such a manifold of manifolds.

Pause here for reflection. Restate the idea we have just referenced.

Return to the standpoint of our earlier discussion of the intrinsic non-linearity essential to the infinitesimal interval of lawful trajectories. Return to the principle of non-linear self-similarity in the congruence between a process which expresses non-constant curvature as a whole, and its curvature in its infinitesimally small intervals of action. For Nicolaus of Cusa, in the founding work of modern experimental physics, his *De docta ignorantia*, as for his followers Pacioli, Leonardo da Vinci,

Kepler, and Leibniz, and for Gauss and Riemann: The curvature of processes of that type, expresses, immediately, a lawful principle of change—self-similar, non-constant curvature in both the large and the very small, rather than curvature as the asymptotic boundary of mechanically, algebraically interacting, linear impulses. Where physical principles are the subject-matter of cognition, the generation—the existence—of those principles, in the mind, is of the order of ontology whose primary content is change *per se*, just as the act of discovery of such principles expresses nothing but such change *per se*.

Now, turn, to consider the general content of human communication from that standpoint of reference. Return to the subject of Classical art.

## Sacred and Profane Love

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The case of the U.S.A.’s “Baby Boomer” is fairly extended to the same generation in the rest of the Americas and Western Europe. It is found, with some secondary differences noted, in the former COMECON states, and in parts of Asia such as Japan and Southeast Asia. The same pathologies, with somewhat different expressions, are found in the spread of moral and cultural disorders of earlier generations. What is notable about the generation of the U.S. “Baby Boomers,” throughout most of the world, is the special circumstances under which this generation has lived out much of its adolescent and all of its adult life to date.

The subject of Classical art-forms is always *ideas*, as we have identified the notion of Platonic ideas in science. It is that emphasis on ideas, so defined, which identifies the significance of the term “Classical” as applicable to both science and art. The apparent difference between Classical art and Classical science, is, that, while the method of both is the same, as we have outlined the four-step method for discovery of validated physical principles, the subject of Classical art is the creative process as such, as distinct from the application of that creative process in the discovery of physical principle.

In Classical art, the emphasis upon the ideas has a twofold expression. On the one side, the emphasis is upon the passion for ideas, upon that quality of emotion which is characteristic of the concentration which drives the individual mind to valid discoveries of principle. This passion, called *agapē*, or “sacred love,” is otherwise referenced, as in Plato’s dialogues, as the compelling passion for truth and for justice. That is the passion of science. Secondly, in Classical art, sacred love is situated as the appropriate quality of relations among persons, as within a good society, social rela-

tions defined by sharing of discovery of principle. These are the social relations based upon those cognitive processes of mind otherwise associated with the original or replicated discovery of physical principle. In Classical art, this is to be recognized as the *aesthetic principle*.

In poetry, for example, the composition and performance of the poem, is dominated by the same four-step process we have identified for discovery, and rediscovery of a validated physical principle. In place of the kind of subject-matter we associated with posing the discovery of a physical principle, in Classical poetry, as in all such forms of art, the ontological paradox is expressed as Classical *metaphor*, as an ironical form of contradiction in attributed formal meaning to the same subject of reference. It is a truthful resolution of that contradiction, provoked within the mind of the audience, which constitutes the Classical artistic *idea* in poetry, music, tragedy, or Classical forms of plastic arts.

The relevant distinction between Classical and vulgar art forms, is most efficiently posed by the Nineteenth century's contrast between the Classical method of composition common to the work of Beethoven, Schubert, Schumann, and Brahms, versus the Romantic method of Hector Berlioz and Franz Liszt. The key phrases which typify the apparent distinctions in form of composition, are the terms "chromaticism" and "passage work." Neither "chromaticism" *per se*, nor "passage work" *per se*, appear in the keyboard compositions (for example) of Beethoven, Schumann, and Brahms, even though deranged performers often purport to find those qualities there.

Nonetheless, although the negative aspect of Heinrich Schenker's influence on Furtwängler, prompted him to inappropriate toleration for Richard Wagner's productions, Furtwängler applied the Classical principle to his performances of Romantic compositions. For me, the most notable illustration of this fact and implications, is my first hearing of a Furtwängler performance, an HMV pressing of his conducting of a Tchaikovsky symphony, which I encountered during my several weeks post-war sojourn at an Army replacement depot, outside Calcutta, India.

I had never heard a Tchaikovsky performance which I could consider serious music until that time. The difference was not in the work of the composer, but the conductor. Notably, I knew immediately, from hearing that recording, that Wilhelm Furtwängler was no Nazi, something which those relevant moral degenerates, Hans Haber, Margaret Mead, and Nazi philosopher Martin Heidegger's life-long admirer, Hannah Arendt, could never have understood.<sup>32</sup> There was no lack of authentic-

ity in Furtwängler's reading of Tchaikovsky; it was a truthful performance, which presented the musical idea which most conductors have left buried under a morbid emphasis on Tchaikovsky's eroticism.<sup>33</sup> The difference between the agapic Furtwängler, on the one side, and the irrationalist eroticism of pro-Romantic Hitler, Goebbels, and von Karajan, on the opposing side, is Furtwängler's adherence to Reason, as the agapic principle expressed in the act of valid discovery of physical principle, and in the aesthetic principle, as this was elaborated, against the Romantic irrationalist Kant, by Friedrich Schiller.

In Classical motivic thorough-composition, as in all Classical poetry, tragedy, and plastic art-forms, one begins with a metaphorical juxtaposition of two intervals, according to the method underlying the six-part Ricer-care from Bach's *A Musical Offering*, the method, premised upon the hearing of implicit polyphonic inversions, as presented in the form of compositional exercises in Bach's *The Art of the Fugue*.

This method, developed up to that point by Bach, rested upon his establishment, through compositional work, of what we know as a well-tempered polyphony premised upon Middle C at 256 cycles and A at approximately 430 to 432 cycles. This tuning corresponds to the naturally determined characteristics of registration and range of the palette of voices used in polyphonic choral work. If one drives the pitch higher, not only will prolonged performance at A=440 or higher bring damage to the professionals' singing voices, in most cases, but the

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32. During the immediate post-war occupation of Germany, occupation officials Hans Haber and Mead played key roles in seeking to have Furtwängler banned from the conducting podium, alleging he was a "Nazi." Nothing could have been further from the truth. It was stop-watch performer Herbert von Karajan, Hermann Goering's favorite "oompah" band-master, whom Joseph Goebbels attempted to put into Furtwängler's post at the Berlin Symphony. The public reaction to Goebbels' effort, prompted him to back off; von Karajan's appointment to that post had to wait until the post-war occupation. Notably, pro-Nazi philosophical impulses were characteristic of such close "Frankfurt School" associates of the anti-Semitic Heidegger as Theodor Adorno and Heidegger's sometime lover and life-long admirer Arendt. At one point Adorno needed to be reminded that he, because of his Jewish pedigree, had no future career opportunities under Hitler's regime, and, taking that astonishing but sound advice to heart, he fled to the United States, to spread his Nazi-like existentialist pollution here. Irrationalist Arendt, similarly, later echoed the nihilist Adorno in writing her version of Nazi-like Hermann Hesse's *Steppenwolf*, her treatise on "the authoritarian personality."

33. An insightful comparison of Tchaikovsky with Brahms, is provided by Gustav Jenner, *Johannes Brahms als Mensch, Lehrer unter Künstlern: Studien und Erlebnisse* (Marburg an der Lahn: N. G. Elwert'sche Verlagsbuchhandlung, 1930). There, Jenner reports and compares his encounters with Tchaikovsky, in Hamburg, and in Leipzig, with Brahms, in the course of choosing Brahms to become his mentor.

effects upon registration will tend to destroy polyphonic transparency in performances. The results of significantly lowering the pitch have related, undesirable effects.

The art of singing was more or less perfected with the emergence, during no later than the early Fifteenth century, of what came to be known as the Florentine school of *bel canto* voice-training. All modern Classical musical composition and performance, are premised upon the principles made transparent, for both singing voices and the imitation of those voices by the instruments, by the impact of that *bel canto* voice-training method upon polyphonic performances. The consequent development of a well-tempered scale, and its standardization by Bach, opened the mind of the composer and audiences to a deep principle of musical composition implicit in *bel canto* polyphony: the implicit scale-inversions accompanying the expression of any polyphonic interval or combination of intervals. Without well-tempering, the rational use of this natural, contrapuntal characteristic of the polyphonic mode is not feasible. Bach's *A Musical Offering* and *The Art of the Fugue*, serve as the launching-point for the Classical motivic thorough-compositional tradition, of Haydn, Mozart, Beethoven, Brahms, *et al.*

Classical music is a product of the polyphonic singing of Classical forms of poetry. This music's development springs from the natural tuning inhering in the genetically determined characteristics of the human speaking/singing voice, the natural tuning of speech implicit in the consonant-accented palette of vowels.<sup>34</sup> The modern tendency, toward either compressing the tuning and dynamics of ordinary speech, and also recitation of poetry, to narrow bandpasses, or to coloring utterances with raucous noises of one sort or another, is to be seen as unnatural, an uncivilized decadence in the arts of communication. It is from the singing voice that artificial musical instruments, chiefly stringed and wind instruments, were developed to serve as parodies and companions for the human singing voice.

The essential function of all art, as typified by the case of Classical music, is the expression of *ideas*, as we have supplied a strict definition for the use of the term *idea* here. There is, for example, no artistic way to read text. One must read text, to express not the content of the text itself, but the ideas which lie outside the text, as the idea corresponding to a solution lies outside the paradox which impels the discovery of that solution. Once we have apprehended that idea, by solving the paradoxes posed by the text and its context, we must use the words

provided, but must utter them in a manner dictated entirely by the discovered *idea*, which lies above and outside those words themselves. In that statement, we have said nothing respecting art in general, which Furtwängler did not argue, repeatedly, for music. That said, we are at the core of the issue to which this report is devoted.

The existence of such controlling ideas depends entirely upon the principle of truth-seeking. As in scientific discovery, so in art; we must substitute nothing for the adoption of a truthful solution to the form which ontological paradox assumes within the realm of art: *metaphor*. Since art deals primarily with the social relations among the sovereign cognitive processes of relevant persons, art situates that passion associated with the original, truthful discovery of ideas within the person, with the social relations among persons. This is the passion of Classical art, its distinctive passion.

The distinction to be emphasized, on that account, is the opposition between the erotic quality of passion for objects of Hobbesian and Lockean notions of self-interest, to the agapic quality of passion for those truths which correspond to the interest of mankind as a species. We are speaking of those truths which are presented most clearly when the individual mind is elevated above the silly person's narrowly perceived self-interest, family interest, and so on, elevated to emphasis upon one's interest, as a mortal individual inevitably soon to die, whose vital self-interest is to live as much of mortal life which remains, in such a manner as to secure a rightful identity, as having lived as a servant of the interest of humanity, to dwell thus forever in the Creator's realm, the simultaneity of eternity.

If this passion for truth controls artistic expression, as it must also control science, the result is the artist whose performance expresses the relevant idea, in the terms which the composer of that work of art has provided to this purpose.

Thus, as Schiller and his follower Humboldt emphasized, the purpose of Classical art, and Classical humanist education, is to develop the moral character of the individual person, by uplifting that person into the realm of Classical ideas. The perfection of artistic composition and performance, like the perfection of the process of discovery of scientific truth, is both the means, and also the goal of all true art, and all true science.

Returning, briefly, to a focus on the example of music. Contrast what I have just stated with the contrary views of humanity's enemies from within modern European civilization. On the verge of the outbreak of World War II, the same advocate of the anti-Classical Romantic school, Joseph Goebbels, who had attempted to supplant Furtwängler by von Karajan, was responsible for rallying

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34. On the subject of the human singing voice, 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).

the British to outlaw natural well-tempered polyphony, by assembling a London conference, which decreed the elevation of “standard pitch” to the untruthful A=440 cycles earlier, unsuccessfully decreed by Beethoven enemy Clement Prince Metternich’s Vienna Congress.<sup>35</sup>

Romanticism is older than Claudio Monteverdi and the Seventeenth and Eighteenth centuries’ English and other empiricists. This is more readily understood, if we substitute the generic term, “erotic,” for “Romantic.” All divisions within art, are between the art composed and performed according to that Classical principle illustrated by our four-step representation of discoveries of principle, art which is based upon the passion called *agapē*, and those which are motivated by what are termed “profane,” “materialist,” or “erotic” impulses. The *Liebeshod* of Richard Wagner’s *Tristan und Isolde*, is the distilled expression of the profane, and of the principles of chromaticism and passage-work in the so-called Romantic School of Liszt, Berlioz, Wagner, *et al.* We shall turn to the political motivations for promoting Romanticism against Classical principles, in our conclusion of this report; at this present instant, it is sufficient to identify the difference.

Kant laid down the principles of Romanticism, as the central feature of his Critiques. The widespread Nineteenth-century degeneration of German culture, as typified by Fichte, Hegel, Schopenhauer, Franz Liszt, K.F. Savigny, *et al.*, was partially the fruit of Kant’s corrupting influence, and partly a parallel to that. Modernism found roots in the moral degeneration of France, especially that which took over under Lord Palmerston’s asset, Napoleon III. And, so on. The pitiable turn which existentialism and “Post-Modernism” find among today’s

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35. One contemporary European conductor has presented the case, that Wolfgang Mozart was murdered, not by Salieri, but by the imperial *Geheimpolizei*, on the orders of Metternich’s notorious predecessor, Wenzel von Kaunitz, as Chancellor of the Austro-Hungarian Empire, and that Beethoven himself was the victim of spy operations against him by Metternich’s *Geheimpolizei*. In the case of Beethoven, the evidence is clear; much of the nonsense respecting Beethoven’s personality and professional opinions and practices, is the documented result of manipulation of the literary record by the *Geheimpolizei*. In the case of Mozart, more than a mere circumstantial case exists; during the same brief period, an entire roster of protégés of the deceased Emperor Joseph II died sudden deaths, in the context of allegations, by political factions close to the Chancellery, that they were suspected of being Prussian or French spies. Beethoven’s life was doubtless prolonged by the fact that his favorite pupil and friend, for whom Beethoven composed both his “Archduke Trio” and *Missa Solemnis*, was a prince of the Hapsburg family. There was a clear political motive, among the Holy Roman Empire’s ruling body of princes, for killing leading Classical composers of that time. We shall indicate that, appropriately, in the conclusion of this report.

“Baby Boomers” and their offspring, is a historically specific variation on an old theme.

When, in the usual case, Baby Boomers attempt to recite the text of poetry, or when they speak of matters bearing upon science, they show a lack of sense of truthfulness. Their pitiful manners of utterance are not designed as vehicles for truthfulness, but, rather, what passes for “political correctness” among those strata upon whose favorable opinion of them, their sense of social identity has come to rely. There is no true passion for real ideas in their utterances, no zeal for truth. They are like the characters of *Waiting for Godot*, lost souls, cast upon the shores of a Post-Modernist purgatory, a close-of-the-century Kafka-esque nightmare, knowing that some uncertain destiny awaits them, wondering whether they should prefer that destiny to be Heaven, or, preferably, Hell. A “mid-life crisis,” the hallmark of the “Me Generation,” seems the natural adult state of being of such unhappy beings.

## The ‘Look-At-Me’ Generation

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During the recent three decades of “Post-Modernist,” moral and cultural degeneration of European civilization, we have come to a time in which we live in a vast, global, intellectual slum.

This is reflected, for a few among us who have some familiarity with the great actors and musicians from earlier generations, in the fact, that the typical modern actor, or public speaker, of the “Baby Boomer” or “X” generation, is a clumsy, apparently empty-headed, “Post-Modernist” bore, incapable of understanding the most elementary principles of artistic composition in speech or music. This defect in those popular, and other performers and their audiences, correlates with their prevalent hostility to any motive so unbearably “heavy,” so offensive to contemporary liberals’ “political correctness,” as a commitment to the knowledgeable discovery of truth. When these persons speak, or sing, one senses they have no idea in their heads, at least not in the sense we have defined that term’s usage here. If they recite Shakespeare, they were likely to simulate the late Sir Laurence Olivier playing Richard III, which is to say, doing his customary imitations of Marlon Brando’s mumbling.

When one hears a “Baby Boomer’s” attempts to recite poetry, one’s thoughts may wander to reflection upon the training of the Manhattan *débutante*, or, her lower-priced parody, the future eligible bride (or, groom) being reared in the would-be social-climbing “plebeian” household. Usually, in such cases, the lessons in dancing, or singing, or

musical instruments, and so on, are not given to produce an artist, but, rather an eligible mate for an upwardly-mobile orientation in future marriage-ties. Such a child is trained to sing for its supper, not for the benefit of music. Sometimes, the child so victimized actually becomes an artist, or a scientist. However, if that young person should come to place scientific truth, or the equivalent qualities of Classical artistry, above what social climbers regard as an orientation toward "success," the ambitious parent will express long-suffering, or not-so-long-suffering, keen disappointment ("But, we sacrificed so much to do the best by you") in the progeny's failure to adhere to the implied moral responsibility for repaying the social-climbing parent's devotion to vicarious social success.

A typical result of such parental and other societal victimization of the Baby's Boomer's mind, is the artist who goes on stage to show how well he or she can perform, not to communicate the idea represented by that which is performed. For the audience, the test is: While you were watching and hearing the play, were you impressed by the actor playing the part, or by the part he or she was playing? Were you impressed by the style with which the part was performed, or by the seeing the part itself so clearly that, for the moment, the person playing the part escaped your attention? Were you impressed by the manner in which the poem was recited, the song sung, or, rather, gripped by the idea which governed the exposition of the terms of that poem, that song? Was the personality who played the part, an athlete who used the poem, the song, as a gymnasium in which to display his or her body, instead of using himself, or herself, as a medium for conveying the idea contained within that composition?

Consider the manner of speaking of great Classical artists, from the writer's generation, or, better, a generation earlier. Now, compare that performance with the manner of speech of a successful university graduate from the "Baby Boomer" generation. What is the difference?

What about dynamic range? The Classical artist had a large range, an easy movement from one singing-voice-like registration to another, and, a good placement to match, such that a wide-ranging counterpoint of dynamics, registration, tempo, and so on, proceeded so neatly that one rarely noticed the differences in quality of enunciation as the drama unfolded. One heard the part being performed; one heard the unfolding idea. One's inner attention was commanded, and focussed. The stage, the setting, and kindred trappings were dissolved into the reality of the drama ongoing. A tension of that sort commanded attention, not to the actor, but to the part he or she portrayed, and not so much to that

part, as to the idea which unfolded as the drama proceeded. One had the sense, in recalling the experience of witnessing a good performance, that the actors did nothing which distracted from the parts represented, and idea portrayed.

Compare that with the "Baby Boomer." What has gone so profoundly wrong with that generation? One is reminded, of the upwardly-mobile mother's voice, saying to the child, and, obliquely, to the watchers, "Show them how you can dance." Then, think of the contemporary artist on stage; do you see the adult artist less, and the little girl showing "how she can dance," more? How cruel that mother was; but, forgive her, for she knew no better, and, she wished to know no better.

Shift to the conference, where the speaker is reading from the prepared text of the speech. Can you recognize the little boy, the little girl, reciting poetry for the guest, at mother's instruction? The address itself, may, in fact, be written with the intent to convey something which passes for an idea. Even in such exceptional cases, the delivery by the speaker is rarely successful to that end. More often, it is an empty exercise in mere rhetoric, or dry deduction, to attempt to persuade the audience either to adopt some slogan, vote up some motion, or bill, or simply to admire the speaker's affected self-importance. One is reminded of a line of *Hamlet*, from the beginning of the Act II soliloquy:

. . . Tears in his eyes, distraction in's aspect,  
A broken voice, and his whole function suiting  
With forms, to his conceit? And all for nothing!  
For Hecuba?  
What's Hecuba to him, or he to Hecuba,  
That he should weep for her? What would he do,  
Had he the motive, and the cue for passion  
Which I have? . . .

He is not conveying ideas; he is reciting text. He is not performing the music; he is merely interpreting the notes in a style to fit his conceited aspiration to his own self-importance.

"Look at me!" So, above the recitation impinging upon the ears of the audience, his silent voice, from within his tormented self, shrieks its anxiety from a distance several octaves higher than the mere mortal ear can hear. So, too, she. "Forget the part. Forget the song. *Look at me!*" Does the audience admire this? Perhaps, to admire as might the customers observing the merchandise presented in the bordello's parlor, or, the same thing transposed to the Las Vegas stage, or the Hollywood screen.

That "Baby Boomer's" stylized recitation of text, of notes of the score, that erotic flight into Romanticism, has pitifully nothing to do with artistry, or with *ideas*. Emil

Jannings, crowing the part of the “The Professor” in *The Blue Angel*, was far, far more convincing; one thought, then, of the Apostle Peter’s worst moment.

Hear Furtwängler. One must relive the experience of the composer’s process of composition of the work to be performed.

I add to Furtwängler’s advice, the qualifying statement: That that process of increasingly perfected method of well-tempered, polyphonic, motivic thorough-composition, which Wolfgang Mozart adduced from study of the six-part Ricerare of J.S. Bach’s *A Musical Offering*, embossed upon the Classical composers who followed him, through Brahms’ last compositions, a conception of a musical idea as a perfectly coherent process of continuous change, akin thus to the kinds of non-constant curvature, situated, self-similarly, in the very large, as in the infinitesimally small, which Kepler, Leibniz, Gauss, and Riemann have shown to us. This non-constant curvature, is expressed in well-tempered polyphonic successions of modalities. This begins with the prompting utterance of an explicit pair of intervals at the outset, and their implied fugal inversions, and unfolds, and unfolds, and unfolds from there, until the release of the tension of that successive, self-similar ordering of change, as the resolution which marks the completion of the composition as a unified *idea*.

The performing artist, must be so thoroughly steeped in that idea by the composer, that when the performance of the piece is delivered, nothing alien to that process of change is heard by the audience. In the relative infinitesimal of the interval of change in process, one must hear in the mind the anticipation of, the yearning for the resolution which marks the completed utterance of the musical idea. That is “performing between the notes.” That, not a mere stylized reading of the notes of the score, is artistic performance.

Such quality of artistic performance has another name: *truth*. Such a performance of Mozart, Beethoven, Schubert, or Brahms, for example, is the only *truthful* performance of those works.

You prefer “popular music.” Some might argue it is better that you do so; since, where there is no truth, the only lie is the existence of those who prefer such entertainments.

The lie is their poor lives. They have been sometimes called the “Me Generation.” In general, they have abandoned any purpose in life, and, in payment for this, their conversion to a religion of liberalism unburdened by concern with historical truthfulness of one’s own existence, they have been rewarded with the gift of a new disease, from the pages of Arthur Miller’s *Death of a Salesman*: the “mid-life crisis.” They are committed to no ideas outside

their existentialist experience of being “thrown into that jungle of sensory experiences” which is this damned “post-industrial” utopia. This is not the “Me Generation,” as much as it is the “Look-At-Me Generation.”

It is not that all Baby Boomers are incapable of ideas; they are *potentially* capable. Rather, for about thirty years, they have been continually in utopian flight from reality. They are in flight from that realm of truth, which is the only climate in which ideas can flourish.<sup>36</sup> They are still in flight from the unbearable realities which closed in upon them during the early through middle 1960’s, and have yet to find the courage to return from the fantasy-land of “post-industrial” utopianisms; indeed they will cling to their fantasy until someone burns it down, as is likely within relatively short order, these days. Real ideas terrify them; they prefer to have none, and are offended by those whom they suspect of such subversive interests. They are in terror-stricken flight from truth. Thus, they have come to dwell, through the mirror of an adolescent’s “Look-at-me” fantasy, into a recurring Kafka-like nightmare, a deconstructionist’s fantasy, where the “politically correct” Red Queen’s words mean whatever she wishes to interpret them to mean. They would prefer to mouth text, than actually to think, and usually do so, both in speech and in song.

## Classical Art and Politics

For all known human existence, prior to the Fifteenth-century Golden Renaissance and King Louis XI’s founding of a reconstituted France as the first example of a modern nation-state, mankind lived in obscene societies. Despite the differences among these societies, they shared the common, characteristic misfortune, that over ninety percent of all persons within that society lived as virtual “human cattle,” as slaves, serfs, or in like or worse condition. This is what we know of human archeology and history, until the Golden Renaissance brought about a great change, the establishment of the modern nation-state and national economy.

The artistic purpose underlying the establishment of the nation-state, is to supersede rule by oligarchies and lackeys, by a form of government which is premised upon constitutional obligations to provide a course of self-development of nations, in which each person is

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36. As we go to press, two relevant bits of wit, have been supplied by some of my merry friends. (1) How many “Baby Boomers” does it take to screw in a light-bulb? Only one. He just stands holding the bulb while the whole world turns around him. (2) How long does it take for a “Baby Boomer” to change a tire? It depends. You know, the tire must really wish to change.

**The high-water marks in North American culture are represented by the close associates of the principal architect of our freedom, Benjamin Franklin, and the rallying of this republic to become its true self, by President Abraham Lincoln. The circle around Franklin adopted the leading ideas of Gottfried Leibniz, in rejection of the moral degeneracy characteristic of the British empiricism of John Locke.**

*Benjamin Franklin, the "Prometheus of the 18th Century," conducts electrical experiments.*



pre-shaped by the heroic Abelard of Paris, by Dante Alighieri, and Nicolaus of Cusa's *Concordantia catholica*, as initiated through the selected instrumentality of the Dauphin who became France's Louis XI, gave us the first approximation of a form of society consistent with the nature of the individual human personality as made in the living image of God.

Because of the success of the oligarchical faction, in resisting this reform within continental Europe, the best approximation of a modern nation-state to appear in post-Louis XI Europe, up to the present date, is a mixed form, partly dedicated to human

treated in a manner dictated by the principle that he or she is made in the living image of God. In short, that society must be regulated in a manner consistent with the human nature of every individual being made, so, in the living image of God.

This means national government, as the agency which must exist if the rights of such individual, highly mortal persons, are to be realized. Without national government, there is no efficient existence of individual human rights. Before the establishment of King Louis XI's France, individual human rights existed only in the dreams of the greatest philosophers, or in the fairy-tales told by fools; and, so it would become, again, if the institution of the modern sovereign nation-state were supplanted by that return to feudalism, or even to barbarism, either result the consequence of replacing the nation-state by supranational regulatory institutions.

As I have elaborated the case elsewhere, the constitutional design of the United States, as provided by Benjamin Franklin, and reaffirmed by President Abraham Lincoln, is the highest moral achievement of statecraft in human existence thus far. The dream of the modern nation-state, sought by Solon of Athens, and by Plato, as

progress in general, but with progress conditional upon submitting to the overreach of a continuing residue of the feudal oligarchical classes and their Henry A. Kissinger-like licky-lackeys. The U.S.A. is the only nation-state existing during the recent two centuries which is based upon an original Constitution, that of 1787-1789, which is dedicated efficiently to the principle that each man and woman is made in the image of God. Yet, unfortunately, as President Abraham Lincoln was summoned to remind us, we have suffered much from the influence of the same oligarchical influence which suppurates in Europe.

The traditional enemy of the United States was always, and continues to be, the British monarchy. That monarchy is still an imperial power, in its present camouflage as the British Commonwealth. Through its domination of that Commonwealth, it wields control over the most important roles of such supranational authorities as the United Nations Organization (U.N.O.) and such U.N.O. attributes as the International Monetary Fund (I.M.F.), World Bank, World Trade Organization (W.T.O.), the supranational arm of the British monarchy known as the imperial Anglican Communion, and the sundry supranational "environmental" and related con-



ventions associated with the Worldwide Fund for Nature of London's imperial Prince Philip. Over the recent two-hundred-twenty-odd years, nearly all among the treasonous elements within the United States have been co-thinkers, admirers, or, often, outright agents of our chief adversary, that British monarchy. Three types of such elements are most notable: Boston-centered opium-trafficking partners of the British East India Company, New York bankers in the tradition of Jeremy Bentham's Aaron Burr and Palmerston's treasonous August Belmont, and the type of slave-owner who served British interest in establishing the Confederate States of America (C.S.A.).

Thus, as the case of the present Federal Reserve Chairman, Ayn Rand cultist Alan Greenspan, typifies this, the constitutional institutions and practices of the United States and its government are corrupted by submission to the pack of international usurers otherwise dominating Europe. In short, since Pope Julius II's treasonous betrayal of the League of Cambrai to the enemy of mankind, Venice, the presently existing form of nation-state, throughout the world, has been of a mixed form, nearly always under the corrupting influence of a powerful feudalistic class of usurers, such as the London, Paris, and Wall Street gang today, but, until most recently, with competing features which approximate the constitutional prerequisites of a nation-state and national economy.

This political consideration is indispensable for understanding the ebb and flow in the fate of Classical forms of art.

Classical art is as Solon's poem, Aeschylus' *Prometheus Bound*, and Plato's dialogues imply. It is the expression of that faculty which presents men and women as made in the living image of God, the truth-seeking compulsion and capacity for generating *ideas* for practice. Thus, Classical art begs for, and expresses the form of relations, among persons and nations, which are appropriate for all human beings. Such relations are impossible in a society which is not better than "half-slave, half-free," in which some part of the population is degraded to a condition mimicking that of "human cattle," the condition of a post-industrial society as envisaged in public utterances of that avowed admirer of Alvin Toffler's utopian fantasies, Britain's former chief editor of the London *Times*, Lord William Rees-Mogg.

The form of social relations cohering with Classical art and science, is an abomination to the lords, ladies, and lackeys of the feudal landed aristocracy and financier nobility. There have been individual members, even some families of the landed feudal aristocracy, who

have been dedicated to fostering Classical forms of art and science. However, with the class-conscious oligarchical institutions, matters are seen differently. It is recognized, as Friedrich Schiller stated, that Classical methods in art, science, and education, by fostering the development of the moral character of the population, nourish a passion which will not tolerate a lackey's sort of self-debasement, but will work to liberate society of the disease of oligarchism. Thus, the class-conscious oligarch insists upon using Romanticism, Modernism, Post-Modernism, and pestilences such as a rock-drug-sex youth-counterculture, to undermine the morals of the general population, and thus make the oligarchs sit more easily in their chairs.

Thus, Chancellor Wenzel von Kaunitz's hatred of that which Wolfgang Amadeus Mozart represented, and the same *Geheimpolizei's* later operations against Ludwig Beethoven, under the infamous chief pimp of the Congress of Vienna, Clement Prince Metternich. This is expressed by the political decree of the Congress of Vienna, which ordered the official musical pitch to be raised to the standard of Czar Alexander I's bandmaster, A=440. In the same way, the systematic destruction of Classical art-forms, now nearly completed, has been dictated by the oligarchical usury-class, through the work of such funded agencies as the "Frankfurt School" of Adorno and Arendt, Brigadier Dr. John Rawlings Rees' London Tavistock Clinic, and the Unification of the Sciences project launched, in 1938, under the co-sponsorship of Bertrand Russell and Robert M. Hutchins. That self-avowed witch, rabid Malthusian, and Furtwängler- and LaRouche-hater Margaret Mead, and her later association with the Josiah Macy, Jr., Foundation, exemplify the campaign to destroy Classical art and science alike.

Why the hatred? Why do those of uncouth disposition go so far, as to attempt to eradicate such art? Simply, as Schiller argued, Classical art has the specific function of educating the passions, and thus providing the individual within society that personal moral character on which the successful emergence and continued existence of a democratic republic depends absolutely. Otherwise, the idea of a society governed by the majority opinion among immoral men and women, is a contradiction in terms, which must lead either to mass-murderous anarchy or, in the alternative, to the peace of tyranny.

Classical science and art coincide with truth, and with the nature of man and woman made in the living image of God. That which opposes Classical art, proceeds from hatred against truthful devotion to the moral principle of the Classical forms.