

geometers identify as “multiply-connected,” this in the sense understood by Kepler and Leibniz, and as stated by Gauss and Riemann. In any real situation, every principle in the universe, which has any significant effect within terms of reference being considered, is interacting.

The crucial point I am developing at this place in my statement, is that the totality of all valid discoveries of universal principles presently known to our society, is representable, and that in the most meaningful way, as a multiply-connected manifold of the Kepler-Leibniz-Gauss-Riemann type. The elementary practical issue which this fact poses to the economists and other statesmen, is: *What is the practical expression of the correlation between an accumulation of validated physical principles of such types, and an increase in the potential per-capita power of a society in, and over our universe?*

In the case that the discovered solution to a physical paradox needs to be proven by a constructed experiment, or analogous methods of experimental observation (as in astronomy), the crucial validation of the discovery in an experimental way, has a most interesting implication. The refined form of experimental apparatus, designed to test the hypothesized new principle, is of the same form as the discovery of a new generally applicable machine-tool design. Lazare Carnot’s work on the design of machines, and the development of these experimental methods by the pre-Louis XVIIIth 1794-1815 Ecole Polytechnique under the direction of Gaspard Monge, led directly, and also indirectly, to breakthroughs in both scientific experimentation, in methods of production, and new advances in Leibniz’s principles of the use of heat-powered machinery.

In summary of this connection: *The refined design of a crucial experimental apparatus and procedures, crafted to test the validity of a proposed universal physical principle, points the way of the machine-tool designer to the application of a validated such principle in the form of improved kind of product-designs, and improved designs of productive processes. That is the direct link between a valid discovery of a physical principle in science, and the expression of that discovered principle as an increase of mankind’s per-capita and per-square-kilometer power, within and over the universe.*

Thus, we have, on the one side, an accumulation of validated physical principles generated by science. On the other side, we have those same discovered principles, as an increase of mankind’s per-capita and per-square-kilometer power in and over the universe. Let us describe such a set of validated principles, to present date, as a set of principles designated by the indefinite number *n*. In technical language: these principles are interconnected in the form of a multiply-connected, hypergeometric manifold of the Gauss-Riemann type. On the other side, we have that increase in the productive powers of labor which is made possible by use of this accumulated set of principles.

In order to realize that potential benefit of science as an

improvement in the general welfare of mankind, it is necessary to reorganize nature around us according to those principles. This requires not only agreeable changes within the organization of production and design of products. It also requires comprehensive changes in the relationship between a total population and the total area which it inhabits. Usually, we refer to the latter types of changes in our environment as *basic economic infrastructure*. Transportation systems, water-management systems, forestation programs, agricultural land-management of both land in use and reserve land, power systems, communication systems, sanitation programs, general health care, general education, and so on, are actions taken, usually either by government or under the direction and regulation of government, which make our total environment one coherent with the level of our knowledge of physical principles.

Then, we must break the envelope of science. It is an integral part of our responsibilities for leadership in shaping the laws and public administration of our republic, that we must go beyond the bounds of physical principles as such, to treat education and culture in much the same way we have described physical science and technological progress here.

2.3 Classical art: How decisions are actually made

Thus far, some, perhaps many readers wonder, if what I have reported so far oversimplifies government’s role in the physical-economic defense of the general welfare. The prejudices prompting such suspicions are well known, and widespread.¹⁶ Since such anticipated objections are a significant, and continuing part of recent decades’ popular opinion, those objections are errors which must tend, repeatedly, to mislead our government to ultimately disastrous, wrongheaded assumptions, especially concerning the way in which a science-driver orientation impacts the totality of the policies and other circumstances affecting the population’s general welfare. To correct such currently popular prejudices, I now turn your attention, first, to the cultural issues posed by physical science itself; I follow that by addressing the broader aspects of the matter of culture, from that same point of reference used in addressing matters of physical science.

16. I am wryly amused when such criticisms of my work appear, as they often do. Ironically, the more frequent, customary criticism of my writing, is that I should have greatly simplified my statements. One needs to recognize, that one of the most popular forms of sophistry among U.S. citizens today, is the demand by many, that every subject be oversimplified. That folly is often asserted on the premise that keeping things simple is the democratic way. That popular prejudice against scientific precision, is the cause of so many citizens’ being robbed of their wealth and their rights; one might say, that the quickest way to swindle an American is to “simple” the American out of his, or her life itself—simply do not bother him with such complications as the fine print in the contract.

Today's popular misconception of what a scientist actually does, is an esoteric fantasy which defines the scientist as an odd sort of species, one which secretes science as a cow might secrete milk. That, and similar popular delusions about science and its methods, are responsible for the general ignorance of that not only indispensable, but crucial role, which Classical methods of artistic composition play, in making possible both scientific discovery itself, and in bringing about the successful application of the contributions of science to the improvement of mankind's power in and over the universe.

By "Classical composition," I mean the use of the term "Classical" as a reference to the purposes and methods of such forms of artistic compositions as the plastic art of the ancient Scopas and Praxiteles, and the modern Leonardo da Vinci and Raphael Sanzio. It also signifies the tragedies of ancient Aeschylus and Sophocles, and modern Shakespeare and Schiller. It also means those principles and modern methods of singing and Classical musical composition developed successively by such exemplars of the Florentine *bel canto* principles of singing, as Leonardo da Vinci, J.S. Bach, Wolfgang Mozart, Josef Haydn, Ludwig van Beethoven, and Johannes Brahms.

Under the heading of "Classical artistic composition," we must also include those proper, recently abandoned traditions of Classical public and higher education, on which the continued viability of our sovereign nation-state republic depends absolutely, especially at the level of scientific and technological practice required to continue even what might be defined, today, as a modern standard of general welfare for the population as a whole. All of these and related issues of Classical methods of artistic composition, bear directly upon the crucial, functional nature of that difference which sets human beings absolutely apart from, and above lower forms of life.

Contrary to the empiricists, also contrary to those fanatical kinds of irrationalists called Romantics—such as Immanuel Kant and neo-Kantian Professor K. Savigny, art is not a matter of mere "personal preference," nor custom. The proper function of art, especially the Classical appreciation of that indispensable function, has a meaning not only as exact as the meaning of physical scientific discovery; but, the very existence of a validatable discovery of physical principle, in science, has a form and origin identical with that of a valid Classical artistic composition.

The common root of actual science, and actual expressions of Classical artistic composition, is that faculty of *reason* which can not be represented by either deduction or induction, but, only by those means through which validatable solutions to true paradoxes are generated *within the sovereign cognitive processes of an individual mind*. No valid fundamental scientific discovery was ever made by anyone, or that discovery ever actually reenacted in another mind, in any different way than this. This same principle of discovery, is

the characteristic feature of any competent form of classroom practice in public or other education of your family's children, adolescents, and young adults.

Since I have elaborated this important matter at length in many other published locations, it is permitted that I shall limit myself to a summary explanation of this matter here: enough to make the practical meaning of the point, and its strategic importance, clear.

Think: What happens within the mind of the individual scientist, for example, when that individual generates a validatable new discovery of universal principle as a solution for what is, formally, an otherwise unsolvable physical paradox? The meaning of the question will be clearer, when we pose the case of a student, being educated in a good school, and given the same paradox, reenacts that child's own version of the original experiencing of that same discovery, with more or less the same result as the original discoverer. After examining that example, we shall show the same mental processes as occurring in an artistic discovery, or in the musical performer's rediscovery of the composer's idea to be replicated in the mind of the member of a cultivated musical audience. By this means, we show the way in which a science-driver commitment, when embedded within a nation's policy-shaping imperatives, tends to promote those policies and customs which, in turn, promote the general welfare.

In the case of the student's reenactment of the experience of the original discoverer, the student's confidence in the ongoing process of education, persuades the student that the paradox is an honest one, that a solution exists, and that the solution can be discovered with no additional means required, beyond the student's education thus far. This quality of confidence, when fostered in the student by the truthful teacher, is an essential, emotional part of the educational process. Unless that student's naturally human play-drive had been crushed, yet once again, by bad rearing and worse classrooms, the prospect of solving a puzzle which must have a reachable solution, is, for any happy and healthy child, a joyfully exciting experience in itself. Such is the quality of motivation—*passion is the more appropriate term*—which fosters the later development of the best professionals. The child's mind, together with its potential for energized and extended concentration-span, is highly motivated—*is impassioned!*—by the prospect of discovering a valid solution.¹⁷

When a successful such classroom or analogous enterprise has been completed, what do we then have in hand, as evidence of the process which has just transpired within the sovereign processes of the mind of that child, adolescent, or young adult? How do we know those processes within the

17. On the distinction between this quality of play-drive, as it occurs in a child's happy play with an animal pet, and the human play-drive of that child itself, see my discussion of Friedrich Schiller's remarks on *Der Gegenstand des sinnlichen Triebes*, in my "The Substance of Morality," *Executive Intelligence Review*, June 26, 1998, *passim*.



Violinist Norbert Brainin, formerly of the famed Amadeus Quartet, and pianist Günther Ludwig in rehearsal, December 1988. “The proper function of art,” LaRouche writes, “especially the Classical appreciation of that indispensable function, has a meaning not only as exact as the meaning of physical scientific discovery; but, the very existence of a validatable discovery of physical principle, in science, has a form and origin identical with that of a valid Classical artistic composition.”

child’s mind, for which we possess no means by which to observe those processes *directly*? Contrary to Immanuel Kant’s irrationalist view of this problem, we have the means to know what the child’s mind has done in synthesizing a valid replication of an original discovery of validatable universal principle. We have the means to know that with the greatest possible sense of certainty. Join me, in defining that relevant evidence.

First, there is the passion and joy of the journey just successfully taken by that child’s mind. The quality of the passion which the child’s mind has experienced, is most notable. It is precisely that quality of passion which Plato, in Book II of *The Republic*, for example, employs as his special meaning for the Classical Greek term *agapē*. In that location, Plato presents this as a passion for what is truthfully justice. More broadly, this reflects Plato’s—and my own— notion of the equivalence of the passion to practice truthfulness and justice in all matters. This same passion is presented by the Apostle Paul in such a notable familiar location as *I Corinthians 13*. This is the good child’s seemingly innate passion for truth and justice, the prompting of that child’s seemingly instinctive expressions of anger and sadness, which we may often observe when the child senses falseness or hypocrisy in his, or her parents, playmates, or others. This wonderfully childish sense of *agapē*, is a quality which we, even as adults, continue to feel strongly in ourselves, for as long as we remain truly human.

That is the point at which the emotionally healthy child’s passion for truth and justice, even in play with animal pets, brings into view a quality of directedness which reflects the

difference between that human individual and the animal’s quality of play-drive, as the latter defines the pet’s play-relationship to that child.¹⁸

Second, there are several crucial points of common reference, by means of which one person’s mind may recognize the creative—cognitive, noetic—processes which another mind has experienced in an original reenactment of a validatable form of discovery of (for example) physical principle. There are: a) The recognition, in common, of the relevant paradox; b) the recognition of the notion of the insolubility of that stated paradox by formal methods, such as deduction-induction; c) the recognition of the conceptualizable identity of the passion which, when summoned, provided the mind with the needed concentration-span to reach the discovered solution; d) the recognition that the demonstration, shared by both, that the discovered principle solves the original paradox as defined. With aid of such points of reference in common, the two minds in question will tend to generate a conception—a more or less distinct concept, analogous to the way in which the mind registers the identity of a person’s *active face*—of that noetic experience, cognition, which is otherwise invisible to the senses of an external observer. The idea of the discovery,

18. The Fifteenth-Century founder of modern science, Nicholas of Cusa, would agree with my emphasis on the fact that the relationship is of the pet to the child. Cusa references such relationships as the inferior species’ participation in the higher one. The fact that the play-drive of the pet intersects the cognitive function of a higher species, mankind, functionally, through the play-drive of the child, enables the pet to participate in a faculty, the cognitive potential of the child, which is not available in any inferior species.

although not visible to the senses of an external viewer, now has, thus, an identity, ready to receive its proper christening with an appropriate name.

For purposes of simplifying the illustration, situate that same kind of experience among a group of teachers and pupils in the same good school. Imagine a school formerly typical of the so-called Classical Humanist education, such as that of the French Oratorians who taught Lazare Carnot, or of the Schiller-Humboldt reform of education in Nineteenth-Century Germany. In such a school, the students are repeatedly presented with the challenge of effecting their own original reenactment of a validatable original discovery of universal principle.

For this case, we must now emphasize a third experience known among such pupils. Much of what those pupils know of the important discoveries of universal principles passed down from earlier generations, even earlier civilizations, has been knowledge gained through the pupils' own individual, original reenactment of either the original discovery—from generations, centuries, or millennia earlier—or a fair approximation of the same noetic process. The pupils' minds are thus filled with many faces and names, each of a person (often), and of a place and time of the original act of discovery; the students recall the nature of the paradox which prompted the discovery, and also the emotional experience of replicating the original act of discovery. The pupil, looking into his or her own mind, might imagine the faces of many predecessors, all important discoverers, from many different times and places, an image suggesting something like Raphael Sanzio's painting known as *The School of Athens*.

Also, the pupils have first-hand cognitive experience of the necessary existence of efficient cognitive relations linking together many of the discovered principles earlier supplied by these personalities. So, this third experience of a process of cognitive change, which links successive discoveries of principle into the interconnected form of a multiply-connected manifold, provokes a higher order of conceptualization in each pupil's mind. Those kinds of ideas, and their associated paradoxes, which constitute the knowledgeable individual's working knowledge of universal principles, now constitute an idea of a universal principle of scientific and cohering discovery.¹⁹ Under this kind of condition, the pupil in that school knows the creative process itself more intimately, more exactly, than any object defined solely by means of direct sensory observation.

That state of mind, brought to cultivated maturity respecting the level of currently available knowledge of principle bearing upon some profession, defines the person properly regarded as a scientist. It is the content of that scientist's mind,

19. I.e., the principles associated with those faces tend to form a multiply-connected manifold of the Gauss-Riemann type. The type of manifold of ideas, so presented here, reflects the famous ontological paradox central to Plato's *Parmenides* dialogue.

as that content is defined by a generalization of the noetic experience which I have now summarily described above, which should serve as a point of reference for showing the connection between science and Classical standards of artistic composition and performance.

Now, compare this with the challenge of effecting a valid performance of a Classical musical composition which had been composed by a Mozart or Beethoven. Imagine that you, at some point in life, had become a musical performer.

First of all, you must never simply play the individual notes of the score, or interpret those notes, or that score as such. You avoid accidentally playing different notes than the composer's score indicated, or additional ones, of course; but you must also exclude any literal or arbitrarily stylized interpretation of those notes, of that literal score. *The rule is: you must perform what that composer intended*, as exactly as possible, treating the score itself as a mnemonic device, not something to be "interpreted" as self-evidently "information" in its own right. In performance of Classical music, as in an advantaged student's reenactment of an original discovery of physical principle, you must not seek a literal, or arbitrary meaning of the relevant paradox, or of the score on the page. You must reexperience the process of discovery of a principle earlier discovered by a composer, just as a scientist reenacts a validated discovery of a physical principle by solving the relevant paradox. It is the performer's own sovereign reenactment of the original discovery by the composer, the *musical idea* for which the score serves as a mnemonic device, not a literal interpretation of the score itself, which the performer must bring to the performance.²⁰

20. There are some truly great musicians, whose apparent inability to succeed as public performing artists is recognized, by themselves, and by relevant admirers and friends among professionals, as a failure to attack the opening intervals of the composition in a way which leads toward a unity of conception of the entire composition in the mind of members of a cultivated musical audience. The quality which they have failed to develop, is a quality which marks the famous Wilhelm Furtwängler as, by far, the most musically successful orchestral conductor of this century. Unless the opening interval of a composition, and the crucial transitions within, are attacked in the appropriate way, the mind is distracted from the unity of the idea underlying the composition as a whole, and, as a result, either performs an "interpretive" reading of the score, or allows the unity of the composition to be broken apart. I have illustrated the point by contrasting a performance of Schubert's Ninth Symphony conducted by Furtwängler, with my pained personal experience, from the post-war period, of a lame performance of the same work, which almost fell apart musically, especially during the second movement, under conductor Bruno Walter. I recall with similar pain a Walter radio interview from that period, in which he babbled the Nietzschean nonsense of asserting that the difference between the compositions of Johannes Brahms and Ludwig van Beethoven, was that Brahms had been an "Apollonian," and Beethoven a "Dionysian." Walter's confusing Brahms with the tedious Bruckner, and Beethoven with Carl Czerny's naughty boy, Franz Liszt, is tell-tale. Bruno Walter tended toward interpreting scores, rather than performing the composition itself. A comparison of the distinctive features of Furtwängler's conducting of three compositions makes the argument for members of a cultivated musical audience: Beethoven's Seventh Symphony, Schubert's Ninth, and Brahms' sequel to Beethoven's Seventh, Brahms' Fourth.

For purposes of illustrating the discussion, let us restrict the discussion of art, for just a moment, to music. Let us restrict the musical domain explored, to the mode of singing-voice training and performance known as Florentine *bel canto*. To simplify the discussion, let us restrict the selection of examples of musical composition and performance to a distilled portion of the Classical repertoire, that of J.S. Bach, Haydn from Opus 33 onward, Wolfgang Mozart, beginning from the time of his Bach studies at van Swieten's Vienna Salon, Ludwig van Beethoven, Johannes Brahms, and other exponents of the strictly Classical methods of *bel-canto*-based vocal and instrumental forms of motivic thorough-composition, which the Classical composers derived from those foundations in well-tempered counterpoint were defined for them by the work of Bach. Those restrictions simplify the problems of illustration of our point here.

The first principle of Classical musical composition and performance, is truthfulness and justice. In other words, the essential musical emotion, is *not* sensuousness, but *agapē* as Plato and the Apostle Paul defined that emotion. This is the first rule for reading or attempting to perform such a composition. You must locate that standpoint of that specific quality of emotion as the characteristic feature of the composition for which the score serves as a mnemonic device. It is that emotion — that “feeling about this piece” — which must guide the performer, and the audience, through the relatively perfected performance.

The second, connected principle is the principle of paradox; in art paradox is recognized by the term *metaphor*. Metaphor, in all art, is that ultimate state of ambiguity superimposed upon mechanisms of literal statement, in which two or more mutually-exclusive literal meanings are compacted to form the subsuming meaning for all of those literal meanings in the same utterance. Paradigmatic is the ironical statement of the form presented by Plato in his *Parmenides* dialogue, which may be restated as: “I am a coherent process whose bench-marks are mutually incompatible A, B, C, and D, but I am not formally consistent with any one, or any combination of them.”

Just for reference by those somewhat literate in music, I note the following. In the case of Classical motivic thorough-composition, metaphor signifies Bach's method of counterpoint. For later Classical composers, the most crucial reference-points in Bach's work are two, his *A Musical Offering* and his *The Art of the Fugue*. The most frequent reference to this connection with Bach, is that which Mozart represented in works such as his keyboard Fantasy K. 475, a reference which is the quoted reference for numerous compositions of Beethoven, Brahms and others. The prototype of metaphorical paradoxes, as in the case of compositions derived from Mozart's treatment of Bach's *A Musical Offering*, is the use of the principle of a series of mutually distinct types of Lydian intervals.

In true contrapuntal polyphony, the essential ideas of the

composition are chiefly defined in two ways. First, as physical principles are defined in science, by ontological paradoxes. In music, the relevant paradoxes are posed by the metaphorical forms of transitions, lawfully generated dissonances, generated within the composition. Second, by explicit or implied quotations from the ideas stated in other compositions, either by the same, or other composers.

These kinds of paradoxes, apparent dissonances, are never arbitrary dissonances, in the sense of Romantic “passage-work,” or modernist or post-modernist forms of noise-production. Rather, they arise as true paradoxes, in the sense

The first principle of Classical musical composition and performance, is truthfulness and justice. In other words, the essential musical emotion, is not sensuousness, but agapē as Plato and the Apostle Paul defined that emotion. This is the first rule for reading or attempting to perform such a composition.

of the paradoxes which prompt a school-child to reenact an original discovery of a physical principle. In music, the relevant kind of paradox arises at a point at which a certain set of musical intervals, apparently dissonant, arise in a contrapuntally lawful way from the polyphony in the composition. Like the paradox which prompts a pupil's mind to reenact the discovery of a physical principal, the musical paradox is one for which no formal explanation is truthful. At this point, several implied keys intersect in a single ambiguous — e.g., ironical — interval. A certain ordered succession of dissonances, called Lydian intervals, so generated, is typical of a paradox which provokes the mind's generation of a musical idea intended by the composer.²¹

Throughout all of this, always remember, that like a sculp-

21. Brahms' employment of an quoted ironical passage from the Adagio Sostenuto, third movement of Beethoven's Opus 106 (“Hammerklavier”) sonata for his own Fourth Symphony, is an excellent illustration of such a general principle of composition governed by principles of motivic thorough-composition. This is more remarkable, when one notes also the relationship of Brahms' composition of that symphony, to the new idea elaborated as Beethoven's Seventh Symphony. See Lyndon H. LaRouche, Jr., et al., “The Case of Classical Motivic Thorough-Composition,” *Executive Intelligence Review*, Sept. 4, 1998, passim. On Brahms' Fourth Symphony, note Hartmut Cramer, pp. 98-103. On the principle of a Lydian-interval series, see John Sigerson and Mindy Pechenuk, pp. 52-76.

ture by Scopas or Praxiteles, in contrast to the linear archaic sculptures of Egypt or Greece, a Classical musical composition is not a “thing;” it is a noetic re-experience, a re-experiencing of a process of discovery of a more refined principle, akin in that way to the student’s reenactment of the experience of an original discovery of a validatable physical principle. It is reliving that experience, which is the first approximation, in experience, of encounter with a musical idea; it is, often, only after the repeated reliving of that experience itself, sometimes spanning years, which leads even the relatively most accomplished performer to—*finally!*—“get this right.”

That illustration emphasizes the fact, that Classical music is a domain governed by the creative passion called *agapē*. The substance of such musical composition, is ideas of that specific form I have associated here with discovery of universal principles. That, therefore, although creative Classical musical composition is, at the one side as playful as a happy young horse in springtime, its playfulness is never permitted to violate the principle of *agapē*: truthfulness and justice in the domain of musical ideas. The result of all of these considerations, is a principle of musical performance which the celebrated conductor Wilhelm Furtwängler referred to as achieving a seamless unity of composition from outset of the performance, to close, by attention to the requirement of “performing between the notes” of the written score.

For this reason, all of modern European civilization’s Classical musical composition, has either the quality of “religious music,” or partakes of the standard of ideas for composition which reference what is aptly heard as something of a specifically Christian religious quality. This connection is made clear by reference to J.S. Bach and those who followed him. That is, the underlying subject of music is expressed as the emotional quality of *agapē*. This is expressed with the least distraction in the Augustinian tradition, most emphatically in the emergence of modern Classical polyphony on the foundations of vocal *bel canto* polyphony of Fifteenth-Century Florence, from approximately the same A.D. 1438-1492 interval as the emergence of the modern sovereign nation-state republic. Its implicitly Christian religious quality, lies in the association of the passion of *agapē* with the principles of truthful justice. It is religious, because it implicitly celebrates and affirms man and woman made in the image of Creator, man and woman each finding true identity as a creature of ideas, that within the simultaneity of eternity.²²

Therein lies the power and beauty of such music. So,

22. This statement can not be made for even nominally religious music of a Romantic (e.g., Berlioz *Requiem*), modernist or post-modernist types, in which the emotion of composition and performance may be sensual effects (as in Franz Liszt’s chromaticism), or the shameless expressions of empiricism, positivism, or existentialism common to the modernist and post-modernist, or “Nashville-style” specimens of rutting like a sow in the muck of one’s own pathetic feeling-state experiences.

such musical scores must be read, and, hopefully, performed and heard.

Although it is necessary to define certain principles of artistic composition in this location, the political purposes I have indicated, require that I now interrupt my presentation on the topic of culture, if but momentarily. I step aside, briefly, like a Chorus from Shakespeare, to remind you that it is the indispensable political implications of art, which are our primary topic at this moment, not matters of art considered from a non-political standpoint. What I write on art here, is written to point out the nature and importance of that political connection. Any further treatment of the subject of art as such, belongs to another publication, in a different time and place. On this account, I will conclude the reference to art as such by emphasizing the relevant, explicitly political implications of Classical tragedy, with implied emphasis upon the relationship of the principles of composition of such tragedy, to the related, but relatively distinct, politically relevant, functions of both music and poetry.²³

In Classical tragedy, as best exemplified by the work of Sophocles, Aeschylus, Christopher Marlowe’s *Dr. Faustus* and *Jew of Malta*, the *Don Quixote* quasi-tragedy, or Commedia, of Miguel Cervantes, Shakespeare, and Friedrich Schiller, we are presented with forms of artistic compositions which deliver their ideas with the most compelling force, and whose relevance to statecraft is of the most immediate, and most powerful quality. In all great Classical poetry, a similar communication occurs, but one usually more distant from explicitly political references. Ask yourself: what is that political connection, and in what aspect of the shaping of policies of governments, does that role of art rightly lie? The answers from the great tragedians whom I have mentioned, is a clear and powerful one.²⁴ Although Classical tragedy presents the most explicit, most readily understood example of the essential role of Classical artistic composition in the shaping of civilized statecraft, before turning to state that case, a crucial point must first be interpolated at this point.

The examples used above, first of the student’s reenactment of original acts of validatable discoveries of physical principle, and then the similar case for Classical motivic thorough-composition, demonstrate the fact, that human relations are essentially *not* what present-day academic social theory misdefines as being the elementary character of social relations. *As individual human nature is located within those*

23. The origin of what can be traced from Classical Greek times as Classical music, lies in the implicitly required qualities of vocalization of Classical poetry. This is a connection which leading Sanskrit-Vedic scholars have traced back at least as far as six to eight thousand years before the present time. Classical music is a medium in which the polyphonic musical qualities inherent in Classical poetry, become the substance used for cognitive processes’ reenactment of what may be defined as “musical ideas.”

24. For a summary of my case for the crucial role of Classical tragedy in fostering political literacy, see my “The Substance of Morality,” *Executive Intelligence Review*, June 26, 1998.

sovereign individual cognitive powers which deny access to direct scrutiny by sense-perception, so what are actually human relations are typified by the sharing of the results of each individual's, independently successful reenactment of a validatable form of an original discovery of a universal physical principle. It is the sharing among two or more individuals, of that form of perfectly sovereign individual experience of reenactment of such a discovery, which is the elementary form of human, as distinct from animal, or animalistic relations.

The elementary difference between a human form of society and an animal herd, pride, troop, etc., lies in two implications of that kind of sharing of separate reenactments of a discovery of a universal principle:

- The first, is that ideas must be defined in only that way.
- The second is, that the fundamental functional task of civilized society, is the use of the development of those kinds of ideas for coordinating social relations among the members of that society, a coordination which reaches across the generations, from present to past and to future generations, all of this implicitly across the span of the simultaneity of eternity.

These two implications define the practice of science. They define the relationship of science to society. They define, inclusively, all of the principles of social relations, including statecraft.

Those two considerations identify the crucial distinction of a morally and intellectually degenerate form of modern society and its educational policies, one based upon the learning of "information" according to so-called "information theory," in contrast to a society whose educational system and processes of self-government are informed by the Classical-humanist notion of human nature. We signify "human nature" as the latter is associated with the prophet Moses' definition of man and woman in the image of the Creator, as Christianity views that principle, and with the humanist methods of education whose essential principle I have defined here.

On this account, all valid science and art express in common this principle of Classical artistic composition. Hence, all competent statecraft relies upon that same principle.

That necessary interruption now completed, return to the subject of tragedy as such. Put aside the silly, but popular misuse of "tragedy," to describe almost any sort of suffering by, or catastrophe to one or a group of persons. The rational and literate use of the word "tragedy," is the meaning established by both the Classical Greek and modern European compositions which I have referenced here; otherwise we degenerate into an Alice-in-Wonderland world, where words mean any purely arbitrary, and usually illiterate thing which the

speaker chooses to utter at some random occasion.

By the standard set repeatedly, consistently, by Aeschylus, Sophocles, Marlowe, Shakespeare, and Schiller, "Tragedy" should be used as I use it here, only to signify an otherwise avertible catastrophe, to either a society or a leading figure of that society, a catastrophe caused by the victim's own stubborn refusal to recognize and correct the potentially fatal absurdity of axiomatic assumptions embedded in the victim's — the celebrity's or the society's — system of beliefs. What defines the quality of tragedy is the fact that, if we take into account the fact, that mankind and its individuals have the power of creative reason, the fatal axiomatic error and its general practical implications should have been truthfully apparent to the victim; the principle is, that the victim has no *truthful* excuse for not recognizing and correcting that fatal axiomatic misassumption.²⁵

Focus upon two outstanding examples, apart from excellent, relevant cases such as *Antigone* on the subject of principles of law: Aeschylus' *Prometheus Bound* and that brilliantly successful military strategy of Russia, in the 1812-1813 defeat of Napoleon Bonaparte, designed by Ludwig von Wolzogen, on the basis of studies by the historian and tragedian Friedrich Schiller, on both the War of Spain in the Netherlands and the Thirty Years War. The latter were studies which formed the historical basis, as documented in Schiller's published historical studies, for Schiller's composition of *Don Carlos* and the *Wallenstein* trilogy.²⁶ The selection of these exemplary cases is sufficient to make the relevant points, respecting both the principle of Classical tragedy on stage, and the importance of such tragedy as a guide to the most crucial policy-making of nations in actual history.

The tragic figure of *Prometheus Bound* is not the suffering Prometheus, but, rather the self-induced doom of Prometheus' tormentor, Zeus. The cause for which Prometheus is subjected to immortal torture by Zeus, is Prometheus' refusal to reveal to Zeus the method by which Zeus will bring about Zeus's own destruction. The attempt to torture this secret from Prometheus fails; Zeus commits the fatal error of refusing to recognize Prometheus' commitment to the simultaneity of eternity. The playwright points toward the consequent result of Zeus' tragic error: for that tragic error by Zeus, Zeus and Zeus' accomplices, the fellow-gods of Olympus, are doomed to be destroyed.

25. Thus, we must not confuse the meaning of the term (Classical) tragedy, with the loose expression "personal tragedy;" to some people the two terms may appear the same, but some people can not tell the difference between a muskrat and a platypus, either. Tragedy is something which a society does to itself, either through prevailing popular opinion, or through the pathological flaw in the axiomatic behavioral traits of persons with exceptional, virtually controlling influence over the fate their influence imposes upon the society or culture in question.

26. Helga Zepp-LaRouche, "Schiller and the Liberation Wars against Napoleon" (edited version of her Nov. 22, 1998 address to a conference in Bad Schwalbach, Germany), *Executive Intelligence Review*, Dec. 4, 1998.

In the case of the self-imposed doom of Philip II's Spain, Spain destroyed itself, by destroying what had been its own resources on the ground which it sought to continue to rule, a folly which led to the decay and ruin of Spain itself. The same tragic folly, respecting political and logistical issues of strategy, doomed the contending forces in Venice's real-life orchestration of the pack of fools who led central Europe into the A.D. 1618-1648 Thirty Years War.

Largely on the basis of Schiller's work, von Wolzogen devised the strategy for the Russian defeat of Napoleon in Russia. For this, von Wolzogen gained the support of not only the Prussian reformers around Freiherr vom Stein and Schiller's friend Wilhelm von Humboldt, but Czar Alexander I. Napoleon, rejecting the firm warning of the greatest military genius of that time, France's "Author of Victory" Lazare Carnot, went ahead with his foolish Russian invasion, and was doomed exactly as von Wolzogen had designed the trap.

To the present day, some high-ranking U.S. military figures have still not learned the lesson of those outstanding experiences from modern history. Such military leaders, such as Chief of Staff Henry Hugh Shelton, Defense Secretary William Cohen, and Vice-President Gore, if they continue to have their way in these matters, will succeed only in destroying the U.S.A.—and themselves, as King Philip II's tragic folly destroyed Spain, and as Napoleon destroyed himself in the 1812 Russia campaign.

The general principle of composition of Classical tragedy, is that warning which is the central feature of the celebrated poem of Solon of Athens. Solon's theme is a warning to future Athenians, against the risk that their own popular follies might lead them back to the kind of miserable condition out of which Solon's reform had recently lifted them. On this account, the best thinkers among the founders of the U.S. republic and its Federal Constitution, regarded Solon's poem as a model of reference for defining constitutional law. *The great issue of statecraft, is how to prevent a people from destroying themselves by their own habituated follies*—by their own customary opinion—as Solon forewarned the Athenians of his time.

The corresponding principle of constitutional law is, that when a people have made a great revolutionary change in the management of their own affairs, as Solon had led a revolution in Athens, and we of the newly freed U.S.A., that they should think back to the habits which they had found it necessary to overthrow, and that they should bind their posterity against repeating the kinds of axiomatic errors which those former habits had expressed. The revolutionaries should discover what those axioms were, and uproot them, and forbid their future overt or sly adoption in practice.

That consideration recommends the adoption of a further precaution by the same such revolutionaries. We must also think of the emergence of future circumstances, unlike those of the time the revolutionary change was made. They must anticipate, that in future times, under new circumstances, the

same general problem of the influence of flawed axiomatic assumptions, might appear in a new guise, even in a deadly form.

The principle of tragedy, in Classical drama, or in real life, is defined, first, by considering the case in which an entire people condemns itself to ruin, by its customary habits for forming beliefs and guiding practice. *The issue of tragedy is not the issue of bad things being done by celebrities to a mass of good people; the issue of tragedy is what a people as a whole may do to ruin itself.* It is by derivation, that the individual personality may become the carrier of the tragic outcome. The assumption of powers of actual or virtual government, or similar influence over the welfare of nation, may define the institutional authority surrendered to such a leading figure or figures as the instrument by which a consenting people as a whole brings otherwise avoidable disaster upon itself.

Germany did not choose Adolf Hitler. Hitler was chosen to rule Germany in a parliamentary coup d'état directed from London by those British bankers and their Wall Street associates who were behind Hjalmar Schacht. However, once Hitler had been imposed upon Germany, by the series of coups d'état conducted over the interval January 28, 1933-Summer 1934, the folly of Hitler became the tragedy of Germany. Similarly, the impeachment of President Clinton, to the purpose of making Vice-President Gore temporarily President, would become the tragic doom of the U.S.A. It is the follies of the majority of the people of such a nation, which bring such figures into leading positions of power, which are expressed in the ensuing tragic outcome for the nation itself. Such is the logic of tragedy.

Hence, in reality, Spain destroyed itself by consenting to the folly embodied in King Philip II. In both reality, and in Schiller's *Don Carlos*, the figures Don Carlos and the Marquis of Posa, are situated to avert the disaster Philip's (real-life) folly is bringing upon Spain and European civilization generally. In the drama, Carlos and Posa, in different ways, being two of the three figures who might save Spain from its own folly, fail, and thus Spain condemns itself to the resulting ruin.²⁷

Thus, it would be idiocy, or worse, to regard Schiller's *Don Carlos* as fiction. Such a person would thus demonstrate a crude illiteracy in both matters of art and of real-life history. The example of von Wolzogen's success, in using Schiller's work on tragedy, shows that the principle of history demonstrated by *Don Carlos* is a true principle of history, including the history of Spain's virtually suicidal policy in the Netherlands. There is no case of the great tragedies which I have implicitly or otherwise referenced here, in which the principle demonstrated on stage was not a true principle of actual history.

Think of those dramas as like crucial scientific experi-

27. Lyndon H. LaRouche, Jr., "The Substance of Morality," op. cit.

ments, as Schiller's compositions demonstrate that point most strikingly. A principle of history is demonstrated on stage, a demonstration crafted as a scientist crafts a crucial experiment, a principle demonstrated on stage, which has universal application in real life. In Classical art generally, the same implications are the essence of artistic compositions.

The nature of the connections between Classical compositions and statecraft may be summed up in the following way. First, I describe the principled nature of these connections. Second, in the immediately following section of my statement, I apply this principle to a case which illustrates the kind of real-life statecraft: how this principle operates in the domain of deliberations of political leaders together with representatives of what I have described as "core constituencies."

The essential quality of action, which implicitly defines all social relations, and, therefore, the substance of statecraft, is the role of transmission of ideas, as I have defined ideas here, through the noetic reenactment of the discovery of scientific and Classical-artistic principles. The essence of that quality of action, may be located, in first approximation, by examining the implications of the relationship between two students, in the situation, in which, the one who has made a reasonably valid reenactment of the discovery of some universal physical principle, is presenting the other student with the facts which will prompt the second to effect a probably successful reenactment of the same discovery.

The significance of that sort of relationship between the two students, is brought into sharper focus, by contrasting the difference in the relationship between the two students, when the two are engaged in transmission of mere "information," as opposed to their participation in the transmission of ideas.

In the first case, the transmission of so-called "information," we have the kinds of aversive (e.g., Hobbesian) social relations defined by the behaviorists and other kindless varieties of animal-trainers applying their skills to human victims. In other words, education becomes something which those who are expert, but poorly qualified animal-trainers, called teachers and professors, do to those whom they treat as actually or virtually human cattle. These teach not knowledge, but "information." These are typified by the racist doctrinaires associated with the behaviorists of Harvard University's education department.

In the second case, every child is educated as we should educate a prospective creative genius. We prepare and challenge the student to learn the great discoveries of universal principle, by replicating, as faithfully as possible, the preconditions and the act of validatable original discovery of univer-



A performance of Schiller's Don Carlos, showing King Philip II of Spain (right) and his son Don Carlos. Spain destroyed itself by consenting to the folly embodied in King Philip. Carlos and the Marquis of Posa, although situated to avert disaster, fail to do so, bringing disaster upon Spain and European civilization generally.

sal physical and artistic principles.

The two opposite policies of education, are echoed by parallel kinds of differences in social relations among the population in general. The contrasted results of the two opposing methods are seen in measurable effects in farming, manufacturing and operatives relative technological aptitudes, especially among machine-tool-design operatives, and in science and engineering, among other instances. The sharpest contrasts between the results of the two opposing methods of education, or lack of it, are seen under conditions of relatively high rates of introduction of technological progress to the design of both products and productive processes. Similar indications are seen in the ability of members of households to use, install, maintain, and repair household tools and equipment, in an environment of technological progress.

As Heraclitus insisted, and Plato illustrates the principle in his *Parmenides*, the essence of the matter is the ontological primacy of *change*. In the mathematical terms of what are known as Gauss-Riemann multiply-connected manifolds, change for the better is measured, for the impact of valid physical principles, with reference to the improvement of characteristic effects of human productive and related behavior under conditions that new discoveries of physical principle are being introduced. That is, as the number of validated principles, *n*, in application is increased, the relative anti-entropy of related human productive and kindred activity is increased accordingly. The same is true for the number of artistic and related principles, *m*, introduced to practice.

Thus, the rate of generation and reenactment of validated physical and artistic principles, occurring in the pairwise relationship among students and others, together with the change in productive and related practice accordingly, is the factor of *change* upon which the maintenance and improvement of the society's general welfare depends.

For the case of physical principles, the functional relationships involved, among *n* principles, are relatively more obvious. It is the role of *m* principles of a Classical-artistic type, which is less readily understood, and ultimately a more important challenge to be mastered. As Solon and Plato emphasized, it is in the tendency of members of society to cling stubbornly to their various kinds of induced social prejudices, that the great difficulties of statecraft arise. The mother of all of the worst, most deadly varieties of such social prejudices, is the failure, or refusal to accept the notion, that by virtue of those cognitive potentials and functions to which relatively much attention has been given in this second section of my statement, each man and woman is made in the image of the Creator, and that those cognitive (noetic) functions, their cultivation, and employment, must be the primary value in natural law by which the law and social-economic practice of the state and the society are self-governed.

Classical artistic composition, and its practice, are the domain in which this principled aspect of social relations is examined by means of the same cognitive (noetic) processes otherwise the source of generation of knowledge of physical principle. The most politically relevant expression of this employment of artistic composition, is Classical tragedy, but every aspect of Classical artistic composition, by virtue of the fact that it enables us to explore the potentials and problematic features of our own individual natures ever more richly, is also implicitly political in ultimate moral effect.

The immediate, and primary form of the pairwise social relationship, features the role of the sovereign, individual cognitive (noetic) principles' generation and employment of validated discoveries of physical principles. The social relations defined by the replication of such a particular discovery in another person's mind, and the sharing of the fact of that accomplishment, defines the primary controlling relationship of cooperation in determining mankind's per-capita power

within and over the universe. However, this physical relationship of man to nature depends upon the ordering of social relations as such. The discovery of the validatable universal principles of social relations, is the self-examination of the relations among the cognitive processes of the individual minds as such. This latter examination is the domain of artistic composition, the domain of the examination of the relations among the individual cognitive powers of man, a study conducted by the cognitive powers of man.

When we lose that sense of artistic principles, we lose the power to recognize and control those kinds of follies by which societies tend to destroy themselves. However, these relations which are the subject of Classical art, are situated within man's physical relations to the universe at large. Unless the mode of social behavior adopted, coincides with improvement in man's physical condition, art degenerates into expressions of cultural pessimism. Thus, when the task-orientation of art is not only to foster an improved quality of social relations, but to do this with the recognition that unless that artistic effort is integrated with a task-oriented approach to increasing mankind's per-capita power in and over the universe, the society is a failure, and if it persists so, it will be doomed as something suffering the penalty of becoming morally unfit to survive.

A culture is as self-doomed as Shakespeare's Hamlet was, when the society, and its relevant leaders, are permeated by a tragic flaw. This flaw is always in the form of a set of axiomatic or axiomatic-like habits of thought and behavior, which bend the cumulative net effect of its responses to changing conditions, such that its trajectory aims it toward the doom it thus brings upon itself. Today, the general toleration of combined rabid monetarism and New Age ideologies, has, during the recent thirty-odd years, introduced such a factor of self-induced trajectory toward doom in the cultures of western Europe and the U.S.A., in particular, which ensures that under sway of presently prevailing patterns of response, those portions of the planet, and much more besides, are more or less doomed to an early oblivion.

The leading function of Classical tragedy, is to alert us to that kind of danger which may lie chiefly within ourselves and our current, stubbornly held official and popular opinions. This function of tragedy, is a concentrated reflection of Classical artistic principles and activities more generally. The object of this function, is to impel us to see, to understand, and correct, the potentially fatal paradox in ourselves and our axiomatic notion of proper social relations. To accomplish that end, we apply, in the form of Classical artistic composition, the same cognitive power to solve paradoxes which we employ otherwise for generation of validated discovery of physical principles.

Look then, in this light, at the implications of the manner in which the prospective Democratic Party Presidential candidates should conduct their dealings with the core constituencies of a Franklin Roosevelt-style party.