

A Philosophy for Victory: Can We Change the Universe?

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Foreword

At a Washington, D.C. meeting in mid-February 1983, I warned the Soviet government, and also relevant high levels of our own, that unless President Reagan were to offer what the President later did announce as a Strategic Defense Initiative (SDI), and unless the Soviet government were to accept such an offer, the Soviet economic system was doomed to collapse in about five years. I repeated that forecast many times, publicly, during the course of the 1980s. The President made that offer,² and the Soviet government rejected it peremptorily. The consequent collapse of the Soviet economic system took about six years, not five.

In a Berlin press conference of October 12, 1988, which was nationally-televised in the U.S. shortly after that, I forecast the imminence of a chain-reaction collapse of the Soviet economic system, an already onrushing collapse, which would lead toward the probable reunification of Germany in the short-term period immediately ahead.³ I proposed a policy for dealing with that crisis.

My policy of October 1988 was later elaborated as the "European Productive Triangle" program of 1990,⁴ and ex-

panded and promulgated as the "Eurasian Landbridge" program crafted by my associates during 1992-1993.⁵

Unfortunately, by the combined decision of Britain's Prime Minister Margaret Thatcher, France's President François Mitterrand, and President George Bush, a policy was adopted, which was directly opposite to what I had proposed at Berlin in October 1988. As a result of the 1989-2001 continuation of those policies, aimed at ruining the economies of both Germany and the former Comecon states, which were jointly launched by Thatcher, Mitterrand, and Bush during 1989-90, not only has the former Soviet power collapsed, but the world's economy as a whole is presently at the brink of the most disastrous economic collapse in modern history.⁶

In my warnings, during the 1982-1983 period leading up to President Ronald Reagan's March 23, 1983 announcement, I had emphasized that the military side of my proposal for strategic ballistic-missile defense, was only the surface of the strategic policy I was proposing. Both the U.S. and Soviet economies were then already far advanced in their decay, down from the levels of long-term physical vitality both had commanded until about the mid-1960s.⁷ Without a "crash" kind of science-driver program, akin to the economically suc-

1. The author is a registered candidate for the 2004 U.S. Presidential nomination.

2. National TV network broadcast, March 23, 1983.

3. This forecast proved entirely correct.

4. Jonathan Tennenbaum et al., *Das 'Produktive Dreieck' Paris-Berlin-Wien: Ein europäisches Wirtschaftswunder als Motor für die Weltwirtschaft* (Wiesbaden: EIR Nachrichtenagentur GmbH, August 1990); "The Economic Geography of Europe's 'Productive Triangle,'" *EIR*, August 3, 1990;

5. Organizing around this report began about 1990. A full report was issued June 9, 1991, as an *EIR* Special Report, "Can Europe Stop the World Depression?"

6. LaRouche's "Ninth Forecast" was published in *EIR*, June 24, 1994, under the title "The Coming Disintegration of Financial Markets." For the policy implications of the confirmation of that forecast by subsequent events, see also Lyndon H. LaRouche, Jr., "Trade Without Currency," *EIR*, August 4, 2000.

7. A useful date of reference, would be British Prime Minister Harold Wilson's pound sterling collapse of Fall 1967, and the ensuing March crisis of the U.S. dollar.



The quality of discovery which can change the world: the breakthrough made by Greek Classical sculptors, which enabled them to show the moment of change—“becoming”—in stone, was the mark of that quality by which mankind survives crises, and remakes the world.



cessful Kennedy space-program, both the U.S. and Soviet economy were self-doomed to that collapse inhering in their respective, current policies of economic practice. The most notable difference in their situation, was that the risk of a Soviet collapse, was relatively more immediate at that time, than the prospect for an ensuing U.S. economic collapse. The only feasible medium- to long-term alternatives for such collapses, was a “crash program” type of science-driver upturn, which would be intended, and gauged to reverse the damage already done to the world’s physical economy by the policy-changes of the 1966-1983 interval.

Thus, I had argued, since even two years earlier than my strategic-defense proposal of Summer 1979, that the need of both super-powers for economic recovery vastly outweighed the adversarial issues between them. Yes, we should free the world from the grip of strategic-missile blackmail, but we should use the need for such a defense as the pivot for a global “crash economic-recovery” effort, from which both sides would benefit.

The essential difference between the 1989-1991 collapse of the Soviet system, and the presently onrushing collapse of the world economy of the Anglo-American powers, was chiefly in their timing. Both have been on the road to collapse since about the time of President Richard Nixon’s 1966-68 election-campaign.

Looking back to my Washington, D.C. discussions of February 1983, the correct view of the world situation today, is expressed by saying that “Two economic systems have collapsed. Russia is now struggling to rebuild itself out of the wreckage left by the collapsed and carpet-bagger-looted Soviet system; the Anglo-American system is now at its fag-end.” Still, after all that, the ruling monetary powers of today’s world are, chiefly, engaged in desperately defending a post-1971 world monetary system which was always foredoomed to fail, and has now reached the advanced stage of the crisis, under President George W. Bush, that that world system could not be saved in its present form. even for a relatively short-term period.

So, today, we are assembled here, under the auspices of the written word, to consider, *not* whether the continued existence of the United States is still possible; the question is, whether it is possible that the United States might choose the available road to survival. Classical philosophy, properly defined, is the only branch of science in which possible solutions to such a crisis in decision-making can be rationally discussed.

The leading founders of the United States, and their fore-runners, such as Benjamin Franklin and Cotton Mather, would have agreed with my emphasis upon philosophy. Sometimes, to survive, one must know how to swim. The

problem today, is the relatively vast numbers from recent crops of university trained professionals, in or outside high positions in government, who, like the “Ozymandias” from Shelley’s poem, neither know how to swim in the waters of Classical philosophy, nor would be willing to learn, even if the survival of their nation depended upon it.

As in many other matters, today’s universities, and their textbooks, have degraded what is taught under the rubric of “philosophy,” into the categories of teachings which are, usually, disgustingly trivial when they are not actually evil. Thus, as Shakespeare’s Doll Tearsheet spoke of Ancient Pistol’s title of “Captain,” so she might have spoken of the name of philosophy today: “God’s light, these villains will make the word as odious as the word occupy; which was an excellent good word until it was ill-sorted.”⁸ It were often necessary, as today, in dealing with serious matters at hand, to substitute another term for the misused name of philosophy: *epistemology*, the matter of the often hidden axioms of assumption which underlie the entirety of specific systems of thought. In the alternative, we might do as I do here, to use other ways to make the relevant distinctions sufficiently clear, that we have no need to seek a substitute for the name of philosophy.

So, if we are to understand the real universe in which cultures, even great empires, destroy themselves, we must begin, as I do here, by making a sharp, uncompromising distinction between my own choice, of historically rooted, Classical use of those terms, and that contrary, trivial or worse, use which is commonplace among the intellectual “bottom feeders,” the existentialists, pragmatists, empiricists, and logical positivists, of today’s academic life.

Despite all else, the term “philosophy” ought to be recognized as signifying the most important conception to be mastered, in attempting to deal with the menacing reality of current world history, even in the short term. The possibility of a continued existence of civilization, even in the relatively near term, depends absolutely upon leaders who govern themselves with obligatory attention to the practical significance of thinking philosophically, as I define philosophy here.

Thus, the following pages address a subject-matter which must be resolved as a philosophical problem of great urgency, a subject which must be addressed, as I do here, for the sake of the possible survival of the recently existing global civilization. For purpose of this review, I emphasize the form which the crisis assumes for the specific type of *globally extended modern European civilization*, focussing chiefly upon the immediate, short-term interval of the escalating global crisis currently in progress.⁹

8. i.e., “fell into bad company.” William Shakespeare, *King Henry IV: Second Part*, Act II, Scene IV.

9. The distinguishing characteristic of European civilization, is the combination of the Classical Greek cultural legacy, especially that of Plato, and Christianity. This is extended through the spread of Islam, which shares with Christianity, and the Mosaic tradition of Philo of Alexandria and of Moses Mendelssohn, the conception of man and woman as made equally in the image of the Creator of the universe, and as specifically empowered to rule

The most important, and most fundamental of the issues posed to us by this onrushing catastrophe, is: *As a matter of principle, to what degree, in what manner, and by what means, can man gain foreknowledge of the method by which to willfully change the current direction of his society’s destiny, for the better, in specific ways? Even to overcome, thus, the worst sort of impending, seemingly inevitable catastrophe, such as the presently onrushing one?*

Threatened by the present, overwhelming likelihood of a collapse of civilization, into a planetary new dark age of humanity, how might we change what I shall define here as the presently characteristic behavior of mankind, to bring this civilization to safety, even within the relatively short term?

I write here as a spokesman for what is sometimes called “the American intellectual tradition,” that European Classical tradition expressed in the writing of our 1776 Declaration of Independence and the Preamble of our Federal Constitution. Those institutions I defend, and see any proposal to consider superseding them, as far worse than useless, at present, or during the foreseeable future. The cause for our nation’s current self-afflictions lies in influences which have been contrary to that American intellectual tradition.¹⁰

The root of our current crisis, lies in the way in which policies contrary to that American intellectual tradition, have been brought to hegemonic positions, where they have lately ruled and ruined our national policy-shaping institutions. It is those superimpositions, alien to that tradition, which are ruining us. Therefore, no action possible within a framework limited to the currently hegemonic, errant policy-making assumptions of our government and most other influential institutions, could have any net effect but to ensure, even worsen the presently onrushing catastrophe.

I denounce not only the present policies of our government, or political parties, for example. Under lately corrupting, even implicitly treasonous trends, especially those of the recent thirty-five-odd years rise of Nixon’s “Southern Strategy,” our nation’s policy-shaping errors have become *systemic*. Our nation’s presently threatened doom, is neither accidental nor cyclical; it is systemic, as merely typified by

over all things within that universe. Other cultures, especially among those in Asia, do not necessarily proceed from that image of the nature of man specific to the European expression of the Judeo-Christian-Islamic current deeply embedded in globally extended modern European civilization. However, since European civilization is the world’s most powerful culture, as measurable in per-capita terms, the fate of the world as a whole is set in the context of the crisis within globally extended modern European civilization.

10. A notable example is former Secretary of State Henry A. Kissinger, who described himself explicitly as a proud foe of that “American intellectual tradition,” in a London Chatham House keynote address of May 10, 1982, “Reflections on a Partnership: British and American Attitudes to Postwar Foreign Policy, Address in Commemoration of the Bicentenary of the Office of Foreign Secretary,” as he had represented himself similarly in his *A World Restored: Metternich, Castlereagh and the Problems of Peace 1812-1822* (Boston: Houghton-Mifflin, 1957). He stressed that this had been his position while Secretary of State and National Security Advisor to Presidents Richard Nixon and Gerald Ford.

increasingly demented qualities of public utterances by the presently panic-stricken Federal Reserve Chairman Alan Greenspan.¹¹

By *systemic crisis*, I mean that we must uproot and replace many among the implied set of axioms which currently govern the selection of the kinds of changes in policy which those institutions, and prevailing public opinion, would be presently willing to tolerate. The possibility of surviving this crisis, depends upon selecting the right answers to the question: *Which adopted or implied axioms of present policy-shaping behavior of our government, and citizenry, must we replace, and replace with what, to bring about the needed, early change in direction toward survival and recovery of both the U.S.A. and civilization generally?*

1. The Issue of Historical Method

Given the fact, that man is a creature distinguished from the beasts by his free will, nothing is “in the cards.” In a truly sane society, there is no place of influence over policy-making, given to crystal-ball gazers, contemporary astrologers, “Biblical prophecy” windbags, or the like. So, the doctrine of “historical objectivity” preached by socialists such as the early Twentieth Century’s Kautsky and Plekhanov, for example, in claiming a certain kind of fatal, so-called “objective,” so-called “anti-voluntarist” ordering of history, never produced anything but ultimately catastrophic results for their followers, during that time. A similar outcome awaited such later followers of the same, virtually mechanistic doctrine of “historical objectivity,” as Soviet leaders Brezhnev, Andropov, and Gorbachev.

Once we acknowledge, that man is distinguished, *systemically*, from both the non-living and the beasts, by free will, there are, nonetheless, bounds which define what nature will, or will not tolerate from man’s free will. Free will is not the right of individuals, or even majorities of entire societies, to make arbitrary choices. As I shall present the case in the following pages, free will is a higher principle of law, otherwise called *reason*, or *natural law*.

There are special, higher qualities of universal lawfulness, operating at a higher level than the non-living aspects of our universe, or even higher than living processes other than the human species. These higher qualities of universal lawfulness, govern the way in which man is variously allowed, or punished for attempting to change the universe in which our species exists. It is that higher lawfulness, which we must adduce, if we are to become capable of foreseeing the most important of the consequences which our decisions, or lack of changes in habits, might bring about. Therefore, my use of

11. The most appropriate documentation of Greenspan’s tendency to disintegrate before TV cameras, appeared after the foregoing lines were written, in his appearance before the Congress on Tuesday, Feb. 13, 2001. In the popular vernacular of today, “This man has really lost it!”

“free will” is a qualified one; in my hands, it means that form of “free will” which coheres with that higher lawfulness which I have defined repeatedly, in published locations, as a *universal principle of physical-economic anti-entropy*.

Such were the issues of the Classical controversy between the heroic Prometheus, and tragic figure of the doomed, satanic oligarch Zeus and his gods of Olympus, in Aeschylus’ *Prometheus Bound*. That is the underlying nature of the crisis, which threatens to bring about the early doom of our United States under President George W. Bush, today. That latter, is the determining, underlying issue referenced by the subject of this report.

How shall we, then, select only those aspects of implicitly revolutionary, “free will” changes in the axioms governing policy-making, which represent a positive factor in the shaping of history?

Thus, the direction being taken by a society, is often flanked by the swamps defined by such lunatic extremes as either arbitrary, existentialist kinds of choices, or capitulation to fatalism. There are discoverable pathways, leading upward from such perilous terrain, as that into which careless opinion has presently misled most nations. The point is, to know how to instruct free will in selecting society’s appropriate, *axiomatic* choices of historic pathway.

This view and practice of the making of history, is what I have defined as a scientific basis for the application of the *voluntarist* method. It is the use of that method, so refined, which must be mastered, and applied, if civilization is to escape the horror which presently besieges us. In this report, I situate that voluntarist method, from the vantage-point of Leibniz’s development of his notion of *monadology*.

At a time when all influential policy-shapers who are *not* philosophical voluntarists, will tend to behave as bunglers, the following question is posed: *by means of what voluntarist intervention, by the rest among us, can the necessary change in direction be brought into play?*

The Problem of Historical Specificity

Whenever that discussion touches the matter of stated or implied claims to knowledge of universal principles, we should focus sharply upon a certain special problem, that of *historical specificity*. For our purposes here, we shall define and re-examine this question of historical specificity from the vantage-point of Gottfried Leibniz’s notion of *monadology*.¹² That topic of method, so situated, is the following.

For reasons which I have defined extensively within earlier writings, any discussion of this topic, must situate itself

12. See *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*, Leroy E. Loemker, ed. (Dordrecht [Netherlands]: Kluwer Academic Publishers, 1989), pp. 592-721. References are implicitly to Leibniz’s *Theodicy* and posthumously published *New Essays*, the latter refuting John Locke in terms which played a decisive role in shaping the concepts and language of the 1776 U.S. Declaration of Independence. See, Philip Valenti, “The Anti-Newtonian Roots of the American Revolution,” *EIR*, December 1, 1995.

by efficiently implied reference to the accumulation of knowledge possessed by mankind, and, more narrowly, by any specific culture, up to the time of a current discussion. In other words, the investigation of matters pertaining to the question of method set forth at the outset of this report, must adopt its empirical basis from the history of the efficient effects of the previous development of *ideas*, as *Plato defined the term ideas*, and as *Leibniz defined the Platonic idea of a monadology*.

Such is the setting, in which a specific culture, at a specific time, is faced with a specific challenge to its continued existence. That challenge must be seen as that culture is situated not merely within the context of the world's geography, but also the legacy of that society's cultural development, accumulated from all human history, up to that time. This retrospective view defines the broad meaning of *historical specificity*.

For example, that great artist and historian, William Shakespeare, proceeding from the legacy of England's Sir Thomas More, located the immediate historical specificity of Sixteenth-Century England in a series of historical dramas, culminating in the accession of Henry VII (Richmond) as the great reformer who created a modern England to match the model provided by the kindred, successive achievements of Jeanne d'Arc and Louis XI in France.

Thus, from that portion of Shakespeare's work, we have the unfolding of English history under the impact of imperial Venice's orchestration of the role of the Norman oligarchy throughout Europe and the Mediterranean region more broadly, over three centuries, from the time of King John I (during the time-frame of the Second through Fourth Crusades), through the Hundred Years War and the Wars of the Roses. This is a very specific chunk of English history, as also of France and of Europe and the Mediterranean region as a whole. To understand that history, we must recognize it as having a specifically coherent character, a specific character which must be brought to bear, if we are to become capable of understanding the development occurring in that setting over the sweep of centuries, and impacting relevant parts of the world, in historically specific ways, still today.

The characteristic feature of that three centuries of history, is the *relative* inevitability of such catastrophes as the mid-Fourteenth-Century New Dark Age, resulting from the defeats of the opponents of Venice's imperial maritime rule during that entire period. The Hundred Years War and the Wars of the Roses in England, represent the continuing calamity for Europe as a whole, inhering in that continued Venetian influence.¹³ Thus, the coincidence of the role of Jeanne d'Arc with the preparations and outcome of the great ecumenical Council of Florence, the subsequent victory of Louis XI in



Schiller's treatment of Joan of Arc, in his drama The Maid of Orleans, shows the power of the great poet-historian to bring forth the essence of the true history of a people by the devices of the Classical stage.

France, of Henry VII in England, and the launching of the great transatlantic voyages of exploration, such as that of Christopher Columbus, which was organized by Nicholas of Cusa's circles from the great Council of Florence, typify a revolution against the evil inhering in the preceding centuries' use of Norman puppets by Venetian thalassiarchs: the Fifteenth-Century Renaissance, the revolution against the Venice legacy on which all of modern European civilization's achievements have been premised ever since.

The dramas of Friedrich Schiller, as the transmission of the heritage of Shakespeare into the German Classics, was influenced, through the work of Kästner and Lessing, represent today a still higher standard of historian's skill than Shakespeare, although both are typical of the heirs and spokesmen of the Fifteenth-Century Renaissance. Schiller's studies of the Spanish war against the Netherlands, the Thirty Years War, and of the case of Jeanne d'Arc, show the power of the great poet-historian to bring forth the essence of the true history of a people by the devices of the Classical stage.

This is the same principle expressed in any performance of J.S. Bach's *St. John Passion* and *St. Matthew Passion*, which is conducted as Bach had intended the organic participation among composer, soloists, chorus, and congregation. The intention is that all, composer, soloists, chorus, and congregation, might *participate in reliving that passion within their own cognitive experiences*. Mozart's *Great Mass*, his later *Requiem*, and Beethoven's masses, express the use of art to bring about a truthful cognitive experience of the reliving of history, shared among composer, performers, and audiences. These are not fiction, not entertainments, but the adducing of the cognitive reality of history, as distinct from a reductionist's dumb reading of the shadows on the wall of a dimly firelit

13. By "relative inevitability," I signify the consequences inhering in stubborn adherence to a defective set of implied axiomatic beliefs and the practices associated with them.

cave, or, as seen darkly in a mere sensory mirror of reality.¹⁴ The superior truthfulness of great Classical art, on this account, is that it accomplishes the essential function of enabling the audiences, among others, to relive the cognitive experience of the historical subject to which the art, or an appropriate form of religious service, refers.

As I have elaborated on this point in published locations, the truthfulness of Classical artistic compositions, such as those of Shakespeare and Schiller, lies in their insight into the uses of the Classical stage, as a domain distinct from the panoramas outside. The idea presented on the Classical stage, must be a truthful representation of the idea underlying the sensory experiences of the panorama, but, the panorama and the stage are different media, differing to that effect, that, to present the idea of certain events on a vast area and lapse of time, *compactly* on the stage, the composer must, as Schiller did with the figure of Posa in *Don Carlos*, create on stage the *idea* which may not correspond exactly, in every detail introduced, to the actual history, but corresponds, with historical truthfulness, to the essence of the historical reality referenced. The truth remains the same in both cases, but the media upon which the truth is staged, differ. There is no excuse, for writing tragedy as fiction, nor for interpreting Classical tragedy as the writing of fiction. Thus, no great tragedian would ever compose a work in response to some arbitrary choice of subject-matter; he would always choose a subject whose treatment was faithful to real history, and would choose only subjects for which he had first discovered a truthful representation of the real-life tragedy, a truth demonstrable, on stage, by the means available to him.

To understand the flaws and accomplishments of all Classical tragedy, from the Homeric epics through Schiller's dramas, real history must be read, and portrayed with the eyes of Plato's dialogues, as an exercise in the search for cognitive discovery of important truth.

Together with Plato's devastating moral criticism of the greatest Classical Greek tragedians before him, Schiller's historical studies, as reflected in his dramas, typify what should be understood by the term "Classical philosophy." The comparison of Schiller's treatment of Jeanne d'Arc, to Shakespeare's tragedy of Hamlet, shows that higher level in Schiller, as Plato's dialogues supersede the methods of such great artists as Aeschylus and Sophocles.

By the very nature of the subject-matter, much of the actual history of mankind in general, even our own nation, is unknown to us; however, despite that shortfall, we must and can, nonetheless, reach conclusions which have a relatively universal authority, relative to the recent millennia of the emergence and development of today's globally extended European civilization, especially six centuries of modern European civilization, and, also relative to those conclusions

which have bearing on effects which might be projected for a period as long as several generations into the future.

Schiller's greatest achievement, beyond what Shakespeare accomplished at his best, lies in Schiller's degree of emphasis upon the principle of the *sublime*.¹⁵ This distinction is shown most efficiently in his treatment of Jeanne d'Arc. Classical tragedy tends, too often, to show how a society destroys itself, often by the deep-going moral defects of those it has chosen to place in positions of great authority, as we might be worried about the newly inaugurated President George Bush, today. That is useful, and uplifting for the audience which recognizes the possibility of a willful choice of alternative to tragedy. However, it were better to affirm the alternative, which, as in the real-life case of the Jeanne d'Arc treated by Schiller, locates the higher meaning of life and purpose of action, as in Beethoven's Opus 132 string quartet, in the sublime.

What we may claim, or might strongly suspect to have been known, from such an actual history of *ideas*, must be defined in two quite distinct, but connected categories.

In the first, straightforward case, there are some things which we can show from the past, as having been both explicitly known at that time, and can be known to us today, as either relatively valid, or clearly mistaken beliefs, as each are encountered in such specific, earlier, cultures and times. We can thus adduce corresponding, necessarily underlying assumptions of principle which are implied in the work of an historical predecessor.

Then, in the alternative, we have the muddier waters, in which the actions considered express relevant, underlying, adducible principles, which the relevant representatives may, or may not have explicitly claimed to know, or, cases in which, those who apparently claimed knowledge, left us, today, without indications of desired forms of proof which we might presently replicate.

Heraclitus & Plato, For Example

Typical of the problem of supplying presently relevant distinctions of this type, are matters posed to us by implied attributions of certain essential ontological notions, for example, to pre-Socratic thinkers such as Pythagoras, Thales, Heraclitus and their predecessors. As an illustration of that point, compare what we know of an apparent convergence between the views of Heraclitus and Plato, respectively, on this account.

For example, in the work of Plato, we encounter a definite, knowledgeable clarification of an argument, defining the essential nature of the quality of existence as *becoming*, as axiomatically, universally opposed to the reductionists' naive reading of fixed objects such as those of sense-perception. A similar argument by Heraclitus, is referenced by Plato him-

14. *I Corinthians* 13.

15. See Friedrich Schiller, "On the Sublime," in *Friedrich Schiller, Poet of Freedom*, Vol. III (Washington, D.C.: Schiller Institute, 1990), p. 255.

self, but the surviving fragments of Heraclitus's writings tease us, as if to tempt us into making extrapolations which may or may not be valid ones. Plato appears to admire Heraclitus' notion of becoming, but, as we may be limited to the fragments of Heraclitus more or less known to us, we can not be certain, as a matter of knowledge, that Plato's concurrence with Heraclitus on this point is thorough-going, is admissible for extrapolation of it as universal in quality. I mean, in the sense that we must attribute functional universality, to any validated *idea* defined in the strict, cognitive sense of the term *idea*.¹⁶

Plato's method in treating of existence as *becoming*, as implied in the famous allegory of Plato's Cave, shifts the question of the nature of existence, away from the illusory inferences of ignorant sense-certainty, up and away from what is sometimes termed "vulgar materialism." The primary empirical expression of existence, is located by Plato, where it must be situated, as *a universal ontological principle of change*, rather than those deductive, or kindred relations among the sense-certainty-like objects so greatly esteemed by the reductionists. Although Heraclitus pointed toward a similar alternative to reductionism, with his "nothing is constant but change," it is only from Plato that we first obtain the dialectical form of exposition which enables us actually *to know that principle, from a cognitive standpoint*, as a physically efficient, universal one.¹⁷

For example, some of the most important of the practical ideas on which the actual achievements of modern civilization depend, meet the requirements of expressing necessary ideas, but we can not show, with certainty, that the author we reference, in each case, was conscious of that implication of the way in which we may wish to adduce that idea from a modern standpoint in scientific method: as if it were an idea apprehended from a dialectical statement in terms of a *geometry of position*. That latter method, named "Analysis Situs" (Geometry of Situation) by Gottfried Leibniz, and known otherwise as "geometry of position,"¹⁸ was later developed by Gauss, Abel, Riemann, et al, into the general form for expressing experimentally-defined ontological paradoxes, that, in math-

16. Autobiographically: during 1951, the puzzle posed by the similarities and differences between the import of the known fragments attributed to Heraclitus, and the clarity of Plato's argument on the ontological implications of "becoming," prompted a crucial turn, at that time, in my own approach to the problems of a science of physical economy. The qualitative differences among the Homeric outlook, the pre-Socratic thinkers, that of the Classical tragedians, and Plato's dialogues, must be appreciated if any useful knowledge for modern use is to be adduced from the study of the work of any among them. If a reader were curious as to where I developed the passion for historical specificity which I stress here, the answer is implicitly provided him in the present location.

17. See discussion of "ideas" known "from a cognitive standpoint," later in the course of these prefatory remarks. This concept of *ideas* is a central feature of all of those of my ideas which I consider important ones. It is pervasive in the writing of these pages. See, Plato, *Parmenides*.

18. Loemker, op. cit., pp. 247-248.

ematical terms, not possible within the framework of a conventionally deductive mode of mathematical argument.¹⁹

The distinction I am making here, is, admittedly, a fine one, but, nonetheless, like Kepler's discovery of astrophysics, in opposition to the blundering method of Copernicus, or the devastatingly infinitesimal difference between Leibniz's definition of the calculus, and the fraudulent version concocted by Leibniz-hater Leonhard Euler, Lagrange, and Cauchy, it is a crucial difference for science as a whole. Therefore, we must be certain that we understand one another clearly on this matter of seemingly fine points of distinction.

Sometimes, we know, with certainty, that the source referenced did *not* make a discovery of the form which wishful thinking might attribute to that source.²⁰ At other times, as in certain cases, such as Plato's reference to Heraclitus' notion of an ontological principle of universal change, we can not be certain that Heraclitus intended fully what Plato intends as the universality of an ontological principle of change; we simply lack the quality of evidence adequate to support the conclusion that Heraclitus intended the kinds of universalist implications which we can, and must adduce from Plato's conception. The need for caution in this comparison is underscored by the implications of *the historical specificity* of the lapse of time between the life of Heraclitus and the work of Plato. Similarly, in using the term "Christian platonism," we must take into account the historical specificity of the lapse of time between the death of Heraclitus and the birth of Christ.

This is a fine distinction, but not so fine that it can be competently overlooked. *It is a distinction which we must make, whenever the matter at hand involves staking the future of society upon a correct, historical appreciation of some deep universal principle*, as I am doing in these pages.

The Use of Analysis Situs

In such cases, where fine distinctions are obligatory, we can be certain of the author's intent, only if the author's work

19. Bernhard Riemann, "Über die Hypothesen, welche der Geometrie zu Grunde liegen" (1854), *Bernhard Riemanns Gesammelte Mathematische Werke*, H. Weber, ed. (New York: Dover Publications reprint edition, 1953), pp. 272-287; "Theorie der Abel'schen Functionen" (1857), op. cit., pp. 88-144; and other locations, in the same collected works. It is from the standpoint of the first cited work, the 1854 habilitation dissertation, that the physical basis for Riemann's work on the implications of Abelian functions and topics of hypergeometry must be located.

20. For example, Isaac Newton did not discover a principle of universal gravitation; he produced a bungled effort to plagiarize the available, published edition of Kepler's *New Astronomy*, which Newton and his associates had available to them in England at that time. Furthermore, as Newton's three-body paradox illustrates this fact, Kepler's principle of universal gravitation can not be adduced from what Newton et al. vulgarize from their reading of Kepler as "Kepler's Three Laws." Similarly, Copernicus did not "discover" the Sun as the center of the Solar system; this was ancient Greek knowledge, long before the hoaxster Claudius Ptolemy, and was emphasized by Nicholas of Cusa during the Fifteenth Century. Kepler showed that Copernicus' method could not have produced such a conclusive, original discovery of principle.

presents the idea in the form of the method of cognition expressed by Plato's Socratic dialogues. In modern terms, that is the method which I reference here by such terms as "Analysis Situs" and "geometry of position." That is the mathematical method of physical science, as opposed to the deductive, "ivory tower" constructs of the "Euclidean" geometries and related constructs of the reductionist mathematicians.

In physical science, as the example of atomic and nuclear physics underlines this fact, knowledge is never defined as empiricists and some others imply, by sense-certainty. Rather, as Plato illustrates the point by his allegory of the Cave, sense-certainty is like the irregular surface of the wall of a dimly lit cave, on which the movements of the shadows reflect real action, but do not show us directly the action itself. Thus, in physical science, we know something only to the degree we are able to demonstrate that existence of the real action, and its efficient characteristics, through experimentally verified cognitive insight. To the extent that we recognize an object solely by means of our senses, we do not actually know that object. We actually *know* only that which we know with the quality of scientific rigor, in the cognitive, anti-empiricist, anti-Kantian, way which the method of Analysis Situs reflects.

That dialectical method of Plato, on which Kepler and Leibniz relied, is reflected in modern scientific practice in the rigorous form identified by the terms "Analysis Situs" and "geometry of position." It is the method demonstrated, pervasively, in Plato's Socratic dialogues. It is the method of Carl Gauss, as Riemann, as in his 1854 habilitation dissertation, brings Gauss's work on this to general form of expression for physics as a whole.

Rather than say, simply, "ideas," let us qualify that, by stating that I mean both the process expressed by the original discovery of an idea, and also the process of the communication of that idea, *as an idea*, from one person to another. The principles of original discovery of an idea, as typified by the original discovery of an experimentally validated universal physical principle, are identical to the means by which such an idea is communicated, as actual knowledge of that idea, from the cognitive processes of one mind, to the cognitive processes of another person.

On this account, when we use the term "idea," as Plato, Kepler, or Leibniz would, we mean, either the quality of idea associated with a universal physical principle, such as Kepler's original discovery of a principle of universal gravitation, as Kepler details this, step by step, in his *The New Astronomy*,²¹ or the idea of communication of such an idea to

21. Johannes Kepler, *New Astronomy* (1609), William Donahue, trans. (Cambridge: Cambridge University Press, 1992). The reader is cautioned against the hoax featured in the translator's and Owen Gingerich's fraudulent disregard for Kepler's explicit condemnation of the incompetent method employed by Claudius Ptolemy, Copernicus, and Tycho Brahe, the condemnation of those persons for a falsification of what is, in fact, what Kepler identified as the crucial characteristic of his revolutionary accomplishments in this work taken as a whole. Reading that foreword and the translator's

another individual person. Or, we mean the notion of an idea common to both such discoveries of a validated universal physical principle of non-living processes, or of living processes, and also the idea of the communication of ideas of that *specifically cognitive quality, as ideas are defined by Plato*, from one person to another.

In the first of the foregoing classes, we are pointing to ideas concerning the reciprocal relationship of the "normalized" case of the individual representative of humanity to nature. In the second class of cases, we are referring to that lawful, functional aspect of social relations (e.g., communications), in which ideas respecting either man's individual relationship to nature, or ideas of man's communication of ideas, are themselves communicated as ideas. These latter are communicated to other persons, that in the form of specifically cognitive qualities of knowledge. In the second class of cases, we should be judging such communicated ideas as in the form of hypotheses, subject to a principled form of experimental validation. The validation is defined, as to be measured in terms of society's increase of its power to exist, in and over the universe, in physical terms. Typically, this validation is to be measured per capita and per square kilometer of a normalized cross-sectional area of the Earth's surface.

In that modern case, we can say that we know the subject author's intent, because he obliges us, in that way, through that *specific faculty of cognitive insight*, to replicate the discovery of the intent of the experimentally verifiable idea in our own cognitive processes. This principle governs the way in which communication of ideas, as Plato defines *ideas*, occurs among living persons; it is also the way in which ideas are communicated, as *ideas*, from the past to the present, and to the future.

In opposition to that single step of perception, through which we learn to recognize objects in the form of sense-perceptions (e.g., the empiricist's brutish notion of "sense certainty"), the individual act of knowing an *idea* requires three steps. First, there must be the recognition of a true paradox of an ontological form, in judging observed phenomena from the standpoint of what were previously considered universally valid ways of interpreting such apparent types of phenomena.²² Second, there must be an act of *hypothetical* discovery of some universally efficient principle, a discovery

introduction, one might imagine a detective pointing to a freshly killed body lying bloodily on the living-room floor, and the witness's responding, "I don't see any body!"

22. The same function is performed in Classical poetry, and in literate forms of written and spoken speech, by irony in general, and metaphor in particular. Notable is Galileo-trained Thomas Hobbes' hatred of metaphor. Metaphor, which is the literary expression of the same principle as Analysis Situs, is the use of language in which cognition is expressed. Since Hobbes, in the footsteps of Galileo's master Paolo Sarpi, is committed to denying the cognitive nature of the human individual personality, as distinct from the beasts, he, like his professed admirer and follower Henry A. Kissinger (op. cit.), is obliged, by his hatred of both man and reason, to demand the exclusion of human behavior from the composing of literature.

which solves the paradox. Third, there must be an experimental test of the discovery. That must be a test designed, not merely to show that the hypothetical principle works in some cases, but must work as an integral part of knowledge as a whole. In other words, the test must show that the hypothetical principle is either universal, or not. If not, it is not a principle.²³

Since the first and third steps are both demonstrated experimentally, a second person who repeats those steps recognizes the successful nature of the thought which engendered the hypothetical discovery in the mind of the original discoverer, as recreated in his own. It is in that way, that the imperceptible is known, because the existence of that idea is efficient in controlling the shadows on the wall of Plato's Cave. This sharing of the act of discovery of an experimentally validated principle, defines an *idea* of the Platonic type. Ideas of principle generated and validated in this way, thus represent communicable, and also efficient ideas for practice, even though the idea itself is not visible to the mere senses.

Thus, the subject of history, properly apprehended, is the history of ideas, as that is to be defined in the terms which I have just summarized. Thus, the only valid idea of history, is the history of ideas.

In *Analysis Situs*, the evidence of a contradiction is stated within the terms of a pre-existing, referenced set of ideas of principle. Such a set of ideas might be the notion of the physical universe consistent with a so-called Euclidean model, as in the case of the paradox which prompted Fermat to discover a principle of quickest time governing the propagation of light. By stating the case for reflection, as in contrast to the case for refraction, Fermat defined an ontological paradox existing within the so-called Euclidean domain of then widely-taught ideas of the physical universe. The experimental validation of Fermat's discovery, as by Huyghens, and by the anti-Newtonians Leibniz, Bernouilli, and Fresnel later, defined the principle of universal least action as not merely an hypothesis, but a validated idea corresponding to a universal physical principle.

Thus, to summarize what I have just said:

In all cases, the efficient generation and communication of ideas occurs, as I shall show at a later point in this report, solely in the paradoxical form of *Analysis Situs*, or *geometry of position*, each mutually contradictory pair of elements of which, expresses the typically underlying form of crucial statements of a Socratic dialogue. For the simplest valid classroom presentation of the point, consider again Fermat's contrast of reflection to refraction, as a paradox which defines a universal principle of quickest time, as superseding the mistaken conception of shortest distance. This is a typical example, as a statement, of the way in which a validatable discovery of universal principle is generated, by stating the relevant paradox in the form of geometry of position.

23. This is sometimes known as the principle of "unique experiment."



Max Planck (1858-1947). His definition of the quantum of action, and his defense of scientific method against the positivists, typify experimentally validatable ideas of universal physical principle, which are prompted by paradoxes which have been presented in the rigorous form of statement required by geometry of position.

The communication of an idea occurs in the same, three-step way just summarized.

This explicitly Platonic dialectical method, as employed by such as Plato, Nicholas of Cusa,²⁴ Kepler, Leibniz, and Riemann, is, contrary to the hoaxster G.W.F. Hegel, et al., the only meaningful use of the term "dialectical method." This is the method by which all discoveries of validatable ideas are prompted, and the basis for the design of experiments which test the universality of the hypothetical principles generated within the mind by the prompting statement of an ontological paradox in the form of geometry of position.

These ideas are not images of sense-perception, but experimentally demonstrated discoveries of solutions for paradoxes which inhere in the flawed nature of sense-certainty as such. The discovery of principles, beyond the reach of sense-perception, in the domain of microphysics, typifies the notion of experimentally validatable ideas of universal physical principle, which are prompted by paradoxes which have been presented in the rigorous form of statement required by geometry of position. Max Planck's definition of the quantum of action, typifies this, as does his defense of scientific method against the fanatical followers of the positivist Ernst Mach.

It is the discovery and experimental validation of those ideas, beyond sense-certainty, generated by the prompting action of a paradox stated in the form of geometry of position, which we are able to recognize as *knowledge*, as the strictly defined use of that term, knowledge, is to be distinguished from both merely fantastic illusions, such as symbolism, and naive interpretations of literal sense-perception. It is only such

24. In the founding of modern experimental physical science, in Cusa's *De Docta Ignorantia*, the point of origin of the work of Luca Pacioli, Leonardo da Vinci, William Gilbert, and Johannes Kepler, and such as Leibniz, Gauss, and Riemann after them. This method was known, as during the Sixteenth Century, as the Socratic method of *docta ignorantia*.

ideas, so defined, which constitute *knowledge*, as distinct from *mere learning*.

How To Use History

Even in the case, in which the replication of a relevant physical experiment, demonstrates, dialectically, the feasibility of the application specified by an author, if we lack access to a specified cognitive exercise, as might have been provided by the referenced source, we are left with a certain degree of uncertainty respecting that source's intent. By observation, we might conclude that the result is a plausible one, on the surface; but, we do not recognize the way in which the author reached that conclusion. In other words, we witness the result, but we do not actually *know* the process, *from that source*, by which the supposed discovery of the result was accomplished.

In other words, the minds of discoverers from the past are able to communicate with our minds, even if that discoverer were long deceased, through the three-step method outlined above. So, we, too, are empowered to communicate to the minds of persons who will be conceived and born long after we are dead. This relationship, defined in terms of ideas, among past, present, and future, is the equivalence of the idea of history to the history of ideas. It is not through learning rooted in sense-certainty, but only through the cognitive communication of *ideas* of a Platonic quality, that we are in efficient relationship to humanity as a whole, to our predecessors, our contemporaries, and our posterity alike.

This carries us a very important step, above and beyond the elementary, three-step process of discovery and communication summarized above. When we act as individual cognitive beings, rather than like beasts, rutting like pigs in the trough of sense-certainty, the powers of cognition which we bring to bear upon anything like an ontological paradox, reflect the full weight of our individual cognitive experience of previous generations, implicitly all humanity which has existed to date. So, the mere existence of the development of language typifies such a cumulative impact of the cognitive experience of the past upon the individual in the present.

This points to the indispensable role of a Classical-humanist mode of universal primary and secondary education for all members of our society. The primary goal and function of education, must be to enable the young, in particular, to relive the important cognitive experiences of past generations, especially the great discoveries and the great crises of earlier cultures and peoples. It is in the seeking of cognitive truth, in such Classical-humanist modes of education of the young in ideas, that education provides a foundation for the moral development of the character of the young person, and, hence, also the adult.

The superior moral character of the individual enjoying the benefits of a Classical-humanist education, in contrast to today's more popular practices, expresses itself not only in the development of persons who are usually more moral, more sane than in other parts of the population, but endowed with

superior qualities of intellectual achievement in whatever profession takes them up. Thus, the idea of an historically so-defined generality of cognitive development, points to an induced state of mind described as the expression of a principle of higher hypothesis, expressed, typically, as the individual's power to generate entire families of discoveries.

Thus, in the cases in which our access to the intent of reported ideas is not in the form suited to cognitive communication of past with present generations, we can not be confident that we actually know the idea of that earlier generation merely from the facts transmitted to us. Where such doubt arises, we can neither claim that that author's intent in the matter corresponds to our own cognitive insight into the matter, nor, as in the referenced case of Heraclitus, can we disregard the efficiency of the experimental evidence which might support that author's pertinent, apparent conclusion. We could never understand history, and the making of history, until we have adduced the reliable principles involved in such crucial cases of shadings of difference in interpretation.

We can not ignore the influence of apparent ideas of principle, even in the case we remain uncertain as to whether or not a certain people understood efficiently the idea by which their shaping of their history was influenced. Even provably false ideas, if they command that practical relevance, such as the provably false and poisonous notions of empiricism, can not be ignored, but must be given critical consideration, if not implicit trust, in our accounts.

Thus, in our efforts to account for what we presently know, from our familiarity with some relevant aspects of the earlier existence of mankind, we actually know, chiefly, only certain slices from that relatively tiny span of human existence which we study as that portion coinciding with so-called recorded history. Even from much of that record, our available evidence is fragmentary and otherwise imperfect.

On account of such imperfections in the record available to us, we must pay special attention to the possible implications of what we do not know, and also to those border-areas, in which our knowledge is imperfect, as in such cases from Greek history as Pythagoras, Thales, and Heraclitus. The achievement of the degree of rigor we must apply, to be justified in stating, "I know," depends upon our sensitivity to the possible implications of that which we do not know.

This precaution, as it applies to study of the past, is the indispensable training of the mind in the kind of discipline required for work in areas in which history has yet to come into existence, in the effort to present reasonable forecasts of the future. Without this rigor, we could not trust our estimates of the consequences of the choices of change in axioms we are considering for implementation.

Therefore, it is only through acquiring the habit of studying history as the cognitive history of the production of ideas, that we might develop what is best labelled an epistemological sense about ideas. It is when the term "philosophy" is used to point toward a matured, richly developed "epistemological

sense” of history, as the history of ideas, that the competent forecaster emerges.

On that account, there is little that pleases certain epistemologically matured discoverers more, than to discover that turning up the kind of evidence from what had been previously considered to be unknown patches in history, which shows that one was right, or wrong, in his attitude toward the possible significance of topical areas in which he had previously lacked knowledge. In science, we must make great leaps into the realm of the hypothetical; but, those leaps are permitted only to the degree we are epistemologically circumspect respecting opinions in areas from both past and future history, yet unexplored, as I have illustrated this warning in the foregoing remarks on the exemplary case from Heraclitus’ fragments. You shall discover below, why I place that repeated emphasis on that illustration.

With the modern followers of Plato, Nicholas of Cusa, Leonardo da Vinci, Kepler, Leibniz, Gauss, and Riemann, most notably, modern science is defined as a realm, in which the matter of the author’s conscious intent to claim a universal principle, is made known to us through the author’s reliance on experimental modes of demonstration of what are claimed as discovered universal principles. All topics within this specific realm, are immediately situated within the bounds defined by Plato’s work; on this account, we can not disregard relevant work which preceded that of Plato, but neither can we be certain that Plato’s predecessors saw these matters as we are able to adduce the clear intention of Plato and his indicated modern followers. Plato’s explicit reference to Heraclitus is a model case in point.

Before turning to the subject of the monadology itself, conclude this introductory section of the report with the following summary of the most crucial points we have presented thus far. To summarize that experimental method to which we have referred here, we have the following.

Discovery of a valid universal physical principle, begins with a set of facts recognized as an ontological paradox. Such an *ontological paradox* must be, then, rigorously restated, in a mathematical or quasi-mathematical form, exactly as Fermat showed the paradoxical relationship between reflection and refraction. From this paradox, Fermat adduced a universal principle of quickest action, rather than shortest-distance for refraction of light.

Thus, prompted by the combined impact of Kepler’s discovery of a principle of universal gravitation, and Fermat’s principle, Huyghens, Leibniz et al., proceeded, through a series of relevant, well-crafted experimental designs, to Leibniz’s development of the original differential calculus, and to his later formulation of a general principle of universal least action. It was the latter formulation which led him directly, to his most crucial contribution to physical science, his monadology.²⁵

25. See note 2.

So, I went from defending Leibniz’s monadology, against Kant, during my adolescence, to my discoveries of the 1948-1952 interval, to Riemann. From there, I went to the “pre-Socratics” and Plato, and on from there, back to Plato and Leonardo da Vinci, and, thence, back to Nicholas of Cusa! So, I, too, like Leibniz, after Fermat and Huyghens, traversed the ironical pathway of the quickest time.

2. Monadology

The philosophically *voluntarist* method by which individuals might willfully bring about axiomatic changes in the direction of future human history, can not be efficiently defined as an undertaking, except from the standpoint implicit in Leibniz’s discovery of a *monadology*.

At this point, we must confront a problem, concerning the relationship between mathematics and physical science. Most modern university graduates in mathematics have, so to speak, stumbled and broken their intellectual legs, over this problem. The reason for those failures, is not that the subject of geometry, as we have to consider it here, is so terribly complicated. The problem is the impossibility of understanding what is actually an elementary proposition, which I am about to address here, without asking the reader to give up a certain commonplace prejudice, which spills over from the day-to-day beliefs of ignorant people into the secondary and university classroom, still today. To continue with our presentation, we must, at this point, pause amid the argument I have been developing, to make clear what is actually meant by so-called Riemannian geometry.

Prior to the introduction of the institution of the modern sovereign nation-state, which was first established during the course of Europe’s Fifteenth-Century, Italy-centered Renaissance, all known forms of society treated the majority of mankind as human cattle, hunted, or used, herded, and culled, like beasts, that by ruling castes and their armed and other classes of lackeys. This form of society was known as the *oligarchical model* of Babylon. Such was the tradition of ancient Babylon, the Sparta of the Delphi cult of the Pythian Apollo, ancient Rome, and feudalism under the hegemony of the combined forces of the imperial maritime power of Venice and its Norman allies.

This model was directly contrary to Christian belief. It was a violation of the Christian definition of human nature; but it persisted, nonetheless. It was not until the period of the great ecumenical Council of Florence and its aftermath in Louis XI’s France and Henry VII’s England, that the anti-oligarchical principle of the *general welfare*, or *common good*, was introduced as a condition for the legitimacy of government. The history of globally extended modern European civilization, since that time, has been a continuing conflict between the persistence of the old oligarchical model, as typified by the British monarchy, and the sovereign nation-state, as typified by the British monarchy’s leading adversary,

the American intellectual tradition. Every major war within European civilization since the Fifteenth Century, including the religious wars of the interval 1511-1648, has been an expression of the efforts of the oligarchical faction to stamp out the existence of the sovereign nation-state and the principles of economy associated with that nation-state model.

This principle of the general welfare, first introduced to government during the Fifteenth-Century Renaissance, is that expressed by the 1776 U.S. Declaration of Independence and the Preamble of the 1789 Federal Constitution. The typification of those principles of economy of a sovereign nation-state, is the anti-“free trade,” so-called American System of political-economy, as most widely recognized in connection with the names of Treasury Secretary Alexander Hamilton, Friedrich List, and Henry C. Carey.

The cases of France’s Dr. François Quesnay, Lord Shelburne’s lackey Adam Smith, and Immanuel Kant, are typical expressions of the kind of ideologies which the oligarchical faction has thrown up, in its attempted ideological counterattacks against the influence of the emergence of the modern sovereign nation-state. That is a problem whose typical effects are to be addressed, as a crucial interpolation, at this point of the report. Although man is naturally endowed with those creative powers of reason, cognition, which set man apart from and above the beasts, and although this principle of cognition is characteristic of Christian belief, as *I Corinthians* 13 and other sources emphasize, feudal society and its legacies sought to suppress those forms of cultural development which did not abort the development of the cognitive powers of the individual human mind.

That same anti-Christian campaign by European civilization’s oligarchical interests, has been often conducted through the use of pseudo-Christian cults. Such was the tradition of the slaveholder class in the relevant Southern U.S. states; such were the dogmas of economic and social policy of the Physiocrats and Shelburne’s Adam Smith; such was the central feature of the argument made by Leibniz-hating, pro-irrationalist Immanuel Kant, on behalf of the anti-Classical German Romantic movement of the late Eighteenth and Nineteenth centuries. Such was the Romantic, irrationalist basis for Nazi doctrine, for example.

Take Quesnay’s Physiocratic doctrine of *laissez-faire*, for example. Quesnay, whose ideology was in the tradition of the notorious, pro-feudalist, Norman *Fronde* and the legacy of the pagan worship of the Delphic Apollo under France’s self-anointed *Pontifex Maximus*, King Louis XIV, preached that the wealth of the feudal estates was a product of the landlord’s aristocratic title to that land, and the peasants on the estate merely cattle whose labor made no contribution to the gain of output over costs. Adam Smith’s doctrine of “free trade,” which was chiefly a plagiarism of the doctrine of Quesnay and other French Physiocrats of that time, makes the same argument. Such was the doctrine of John Locke, whose teaching, under the rubrics “Life, Liberty, and Property,” was the fundamental law of the Constitution of the Confederate States



King Louis XIV (1638-1715), France’s self-anointed *Pontifex Maximus*. In the tradition of the pagan Louis, François Quesnay preached that the wealth of the feudal estates were a product of the landlord’s aristocratic title to that land, and the peasants on the estate merely cattle whose labor made no contribution to the gain of output over costs.

of America, and the basis in taught slaveholders’ law for the maintenance of the system of chattel slavery, and prohibition against allowing literacy to “those of African descent,” under the Confederacy and its tradition since, to the present day.

Among the victims of such pro-oligarchical teachings and practices, the serfholders, slaveholders, and their like fostered a curious form of pseudo-Christian belief, sometimes called “Christian fundamentalism,” which was spread throughout much of what is called “The Bible Belt” today. Call it the “religious beliefs of those who are proud to consider themselves human cattle.” Consistently, the sundry varieties of this pseudo-Christian belief, with their notorious “single issue” style in grievances, were often lumped together under the rubric of the lowest of the “low church” cults, as the so-called Pentacostalists typify the more extremely irrationalist examples of this. Not surprisingly, the hard core of those “low church” fanatics is found in the same localities of the U.S.A. in which President Woodrow Wilson’s sponsorship of the revival of the Ku Klux Klan (KKK), and the influence of the so-called Nashville Agrarians, have been spread inside the U.S.A. during the course of the Twentieth Century.

These populist varieties of religious cults, and their echoes into secular society, are found typically among those un-



A Ku Klux Klan rally in Savannah, Georgia. The KKK, sponsored by President Woodrow Wilson, typifies the "Christian fundamentalism" of one grouping of pseudo-Christians, the "religious beliefs of those who are proud to consider themselves human cattle."

fortunates who view themselves, in practice, as an underclass, that of virtual human cattle. By the so-called "logic" of reaction-formation, they made a god in their own image, a god made in the image, not of man, but of human cattle, or the "golden calf."

As the spread of the policies associated with Nixon's Southern Strategy campaign of 1966-1968, turned the formerly industrialized regions of the U.S., on which the nation's prosperity chiefly depended, into what became known as a "rust belt," and as the skill-levels of employees, and number of jobs held, and hours worked or spent in commuting increased, the emphasis upon cognitive self-development in personal and family life dwindled, increasing thus the ration of the total labor-force which viewed its virtually unchangeable condition as that of almost slave-like human cattle, like the Southern "poor whites" under the rule of those slaveholders in whose interest the Confederacy was established.

As trends in popular culture, so called, plunged downward, during the recent thirty-five years, the almost brainless irrationalism of the lowest of the low-church types, the most human-cattle-like types, spread and worsened. The result of that has been the reaction-formation in which our nation's life is polluted, more and more, by those religious and kindred expressions of anti-cognitive irrationalism typified by the lowest of the low-church cults, such as those of Rev. Pat Robertson and Rev. Jerry Falwell. This trend is complemented by the soaring incidence of mental disorders within the population as a whole.

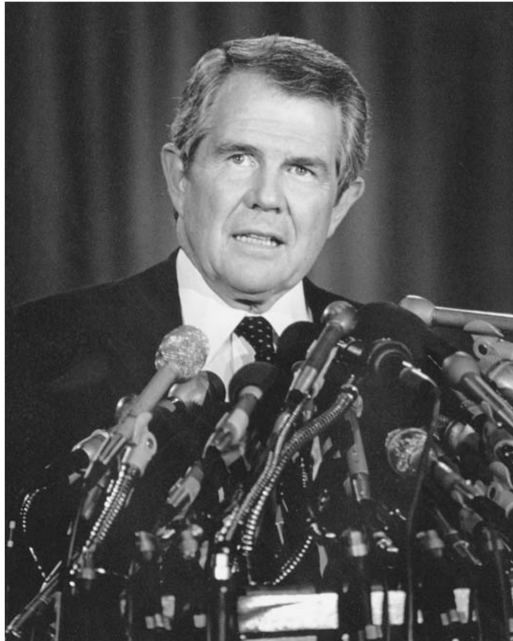
The result is, inevitably, both the spread of pseudo-Christian cults, echoing the Flagellant hordes of Europe's Fourteenth Century, and a growing hostility to everything rational in science and culture generally. The result has been, as in the moral and intellectual degeneration of Eighteenth-Century England under the House of Hanover, the transformation of a large and growing ration of our population into "Yahoos."

The popular ignorant prejudices among the victims of that populist disorder, read matters of science as curious religious

sects usually misread the Bible. The ignorant populist insists that "God wrote the Bible so that ignorant people like me" ("human cattle") would automatically have a perfect understanding of what is written in the translation "which we use in our church." They believe that everything can be explained in terms of simple sense-perceptions, and that this means that all objects perceived by their senses are floating about, moving in a kind of infinite "soup," of empty space, which has four, mutually independent senses of direction: up, down, sideways, and time. They believe that each of these senses of direction is infinite in length. In other words, today's populist varieties of religious belief are fairly described as either "Religion for Dummies," or, simply, "religion suited for the beliefs of those proud to be human cattle."

For that reason, if we put aside some of their wild-eyed notions about such exotic matters as "Bible prophecy," they believe in statistics and, therefore, in luck (e.g., gambling, mutual funds, etc.). Their idea of statistics, is based on the assumption that God designed the universe in such a way that it could be perfectly understood by dummies: everything one needs to know, can be discovered and proven by seeing, hearing, smelling, and touching. From the sermons in their churches, and their prayers, we observe a religion centered upon bargaining, at God's back-door, for personal favors, chiefly in matters of health, sexual gratification, and wealth. Their religion reminds us of dutiful slaves begging for hand-outs at the back door of the master's big white house. They believe that everything that the human senses can observe, can be understood by drawing more or less straight lines among dots on paper.

Put the son or daughter of such a populist type in school, and the student's family background will have prepared that student to accept the beliefs of Seventeenth-Century ideological types known as "empiricists," such as Galileo Galilei, Thomas Hobbes, René Descartes, John Locke, and Isaac Newton. In short, their ideas of physics are based on what is often called a "Euclidean" model of space, time,



Our nation's life has become polluted, more and more, by anti-cognitive irrationalism, typified by the lowest of the low-church cults, such as those of Rev. Pat Robertson (left) and Rev. Jerry Falwell.

and matter. Their religious-like family traditions cause them to reject any idea about the real world which is not consistent with the empiricist's pro-oligarchical doctrine of "God for Dummies."

It happens, of course, that the real world does not work in the way that so-called "Euclidean model" requires. Unfortunately, often, the mass of evidence which proves that the world does not work that way, does not convince the believing populist to give up his unworkable model of reality. Instead, he or she adopts, even invents superstitions, which pretend to explain away the evidence that the "Euclidean model" does not work, and places his confidence in a form of prayer which does not differ from black magic, turning to witchcraft, in the effort to compel a deity to bestow upon him benefits which reason and reality would never allow.

As an expression of the popularity of those superstitions, university students have often heard the professor instructing students to the following effect.

"Euclidean geometry is the logical form for the application of mathematics to describing of physical phenomena. This geometry consists of a collection of self-evident definitions, axioms, and postulates, all of which are given to us by a purely intuitive interpretation of nature and its phenomena."²⁶

26. Even worse than this "Euclidean" dogma, is the case in which the professor and his textbook fly from geometry into a more or less purely abstract algebra, or arithmetic, which contains all of the foolishness of the "Euclidean geometric" view, but does not remove the "Euclidean" dogma's flaws, but merely hides them from view, as Bertrand Russell acolytes such as Norbert Wiener ("Cybernetics") and John von Neumann ("systems analysis") did.

The fraud in that professor's argument, is identified most efficiently, by pointing out that he pretends that the paradox of Plato's Cave never existed.

His geometric model (or its algebraic parody) assumes that cause and effect move between points along straight lines, pretty much in the same way as the usual financial accountant argues that *profit is income less costs and expenses*, instead of the more sensible approach, of considering the *physical actions reflected as some costs and expenses as the causes of both income and profits*, and attempting to discover which of them does what. Worse, the accountant who reads his accounts all to literally for his client's good, will regard as a profitable "cost-saving," the elimination of expenditures on which the continued maintenance and improvement of output and profitability depend—as "de-regulation" has done to many sectors of the U.S. economy, in such a devastating degree, especially during the recent quarter-century since the inauguration of President Jimmy Carter.

In a real economy, the increase of output over the costs and expenses incurred to produce that output, is the result of the application of *physical action* to the process by which the output is produced and distributed. These actions express physical principles, most of which can not be competently represented in so-called "Euclidean," or analogous arithmetic or algebraic terms.

In real economy, contrary to such pseudo-economists of the stopped-up kitchen-sink-drain variety as Senator Phil Gramm, economy means, essentially, physical economy. Physical economy, my specialty, is the discovery of physical principles and the technologies derived from those discoveries, which enable mankind to produce an output in excess of the *physical cost* of the efforts required for that production.



The populists believe in statistics, and therefore in luck (e.g., gambling). Their idea of statistics, is based on the assumption that God designed the universe in such a way that it could be perfectly understood by dummies: everything one needs to know, can be discovered and proven by seeing, hearing, smelling, and touching.

What is shown on the wall of the financial accountant's dimly lit cave, are only the shadows of the reality which the all-too-typical financial accountant, by choice of profession, and by affinity for the class of dangerous lunatics known as monetarists, refuses to see.

For that reason, all real physical science is axiomatically non-Euclidean, and not a matter of a formalist interpretation of the "postulate of parallels." This does not mean that the Nineteenth-Century treatment of the matter of parallels, as by Janos Bolyai and Lobatchevsky, was not useful. These discussions are to be viewed as scrutiny of propositions stated in the form of Analysis Situs, in the same sense as Fermat's overturning the fallacy of assuming that light follows always the shortest pathway, instead of the quickest pathway, which may not be the shortest distance.

It is always through the exhaustive exploration of paradoxes, such as the paradoxes of the attempt to prove the existence of a parallel postulate, that the alert, cognitive mind is prompted to discover higher principles which overturn all of the intuitive assumptions of what are still today, prevalent guises for generally accepted classroom varieties of mathematical physics. Critical treatments of the "parallel postulate," were neither the meal, nor the fuel by which it was cooked; those treatments were the oven in which the cooks were attempting to test the recipes with which they were experimenting.

The confusion over "non-Euclidean" geometries arises, only when the mathematician gets no further than developing a statement in the form of Analysis Situs, and never reaches the next step, as Riemann did, of discovering the geometry

which replaces entirely the paradox-ridden debris of so-called "Euclidean" geometry's cultish application to physics. Typical of the incompetents, are those who attempt to compare Riemann's habilitation dissertation to some aspect of the discussion of the parallel postulate by others. *With Riemann's approach, the parallel postulate, as such, enters nowhere in the formulation of the design.*

The Riemannian solution is resisted, chiefly, because the empiricists, who dominate the academic classroom still today, usually refuse to allow anything on campus which might prove offensive to those same, populist traditions which I have identified as also turning up prominently in the heathen delusions expressed as "Religion for Dummies."

In real science, formal, intuitive classroom mathematics is left behind. All intuitive forms of definitions, axioms, and postulates are discarded, simply because they are intuitive, rather than being the required universal principles, validated as such by appropriate qualities of experiment. Therefore, put aside the mathematics of "Religion for Dummies," and adopt instead, the notions of physical geometry consistent with the crucial experimental evidence.

The pivotal feature of the argument to this effect, involves the implications of Leibniz's notion of *characteristics*, as, about a century and a half later, Riemann employed that conception as central to his habilitation dissertation.²⁷ Leibniz's

27. Cf. Riemann, habilitation dissertation, Sec.III, op.cit., pp.283-288. Anyone who has examined Riemann's work more closely, and taken into account the political situation in post-Carlsbad Decrees Germany at that time, will recognize the references to Archimedes, Galileo, and Newton, in this disserta-

notion of such characteristics, on which his definition of the differential of the calculus was premised, reflected Kepler's proof of the incompetence of the method employed by Copernicus, Tycho Brahe, and others, and also reflected the development of the notion of quickest time as introduced by Fermat.

Thus, Riemann's work implicitly defines the essential feature of the existence of a distinct *natural object*, as Vernadsky defines a "natural object,"²⁸ by its characteristic, as Kepler defines a planetary orbit as a characteristic. So, the differential of the Leibniz calculus (contrary to the Euler-Cauchy hoax commonly taught in universities today) is, from the standpoint of "ivory tower" mathematics, an axiomatically incommensurable magnitude, comparable to the distinctiveness of the unique characteristic of a specific Keplerian planetary orbit.

Here lies the difference between physical science taught as mathematics-at-the-blackboard, and real physical science: as Riemann emphasizes that crucial distinction in the concluding portion of his habilitation dissertation. This is the crucial argument already made by Kepler, against the connect-the-dots method of Ptolemy, Copernicus, and Tycho Brahe, in his *New Astronomy*. It is the crucial difference between the competent physics of Leibniz's definition of the calculus, and the fraudulent alterations in that calculus made by the "ivory tower" ideologues Euler, Cauchy, et al. The existence of different natural objects in the universe, each with distinct characteristic, including the human mind, defines a *monad*. Hence, Leibniz's *monadology*. Hence, Riemann's leading contributions to physical science.

Therefore, the first step now to be taken, is to situate that topic of monadology in the form relevant to that specific argument.

In forecasting the results of man's efforts to willfully change his future, we encounter two connected classes of challenge.

The first challenge, is to discover how man exerts control over nature, to the effect of maintaining and improving man's ability to maintain the numbers and quality of life of our

species' existence. In the science of physical economy, we measure the result in terms of changes in demographic characteristics of both entire populations and typical households, and per capita and per square kilometer of our planet's normalized surface-area. We emphasize those ideas, both ideas of physical principles of non-living processes, and those of living processes, through which increased mastery of the universe, per capita, is effected on behalf of our species.

In this first case, therefore, we are estimating a normalized expression of man's per-capita relationship to nature, a relationship expressed as a function of ideas.

The second challenge, is to define those principles of social relations, by means of which, ideas of the first class are transmitted to the effect of enabling society to coordinate its efforts for effective use of principles through which man's increased power, per capita, in and over nature, is accomplished. These principles are exemplified by the principles of invention and performance of Classical artistic compositions in plastic and non-plastic forms, and in the application of the same Classical artistic principles to the comprehension of history and statecraft.

The two sets of conceptions, taken today, represent the development of the human intellect, as a Classical-humanist form of education best serves that end.

Now, consider examples of the first of the two classes of discoveries.

What Are Physical Principles?

Taking into account all the relevant matter that is to be considered here today, we have included, for special consideration, a comprehensive form of modern mathematical physics, which was begun with the crucial discoveries made by the founder of that branch of science, Johannes Kepler. The pivot of Kepler's most crucial discovery, was his discrediting of that childish, connect-the-dots method commonly employed by the malicious Romantic hoaxster Claudius Ptolemy, and also by the well-meaning, but systemically erring Copernicus and Tycho Brahe.

By recognizing the Platonic implications of the paradoxical curvature of the orbit of the planet Mars, together with related evidence, Kepler freed science from the suffocating grip of "ivory tower" varieties of mathematics, and located the identity of a planetary orbit in a characteristically incommensurable value corresponding to a universal principle of harmonics, that specific to an orbit which is not necessarily of uniform curvature. In other words, Kepler defined the orbit as measured in terms of a constant, but not necessarily uniformly curved, but measurable effect of *Platonic* change.

He met that challenge of the individual orbit, by defining the Solar system, considered, functionally, as an harmonically unified whole, as a subsuming, (in Riemann's terms:) *multiply-connected manifold* of such change. So, Kepler was first to discover, thus, that principle of universal gravitation which would-be plagiarizers intellectually crippled by the influence

tion, as politically dictated references to a Galileo and Newton, whom Riemann already regarded at that time as little better than hoaxsters.

28. See, Vladimir I. Vernadsky, "On the Fundamental Material-Energetic Difference between Living and Non-Living Natural Bodies in the Biosphere" (1938), Jonathan Tennenbaum and Rachel Douglas, trans., *21st Century Science & Technology*, Winter 2000-2001. This was the first full translation into English of this crucial 1938 paper by Vernadsky, offering the best insight into a body of ideas otherwise known from the work of the great founder of biogeochemistry. It was earlier work of Vernadsky, along the same lines, but less thorough than the 1938 piece referenced here, which I employed, in Spring 1973, as part of the core argument for a science of physical economy, upon which the subsequent founding of the Fusion Energy Foundation (FEF) and its influential *Fusion* magazine, was premised. For a recent biography of Vernadsky, see Kendall E. Bailes, *Science and Russian Culture in An Age of Revolutions: V.I. Vernadsky and His Scientific School, 1863-1945* (Bloomington: Indiana University Press, 1990).



Johannes Kepler (1571-1630) freed science from the suffocating grip of “ivory tower” varieties of mathematics, and located the identity of a planetary orbit in a characteristically incommensurable value corresponding to a universal principle of harmonics, that is specific to an orbit which is not necessarily of uniform curvature.

of empiricism, such as Isaac Newton, could never even begin to grasp as a cognitive conception of principle.²⁹

So, Kepler’s founding of the first competent form of modern astrophysics, defined certain crucial problems of universal

29. See Kepler, *The Harmony of the World*, E.J. Aiton, A.M. Duncan, and J.V. Field, trans. (The American Philosophical Society: 1997), passim. Note the way in which the “equal areas” phenomenon is applied to the distinction of the relative values among the characteristics of the various orbits. This is the root of the way in which Newton, et al., formally incurred the “three-body paradox.” It is the exclusion of Kepler’s emphasis on the crucial principle of harmonics, from the Newtonians’ bowdlerization of Kepler’s work, which leads the Newtonians and the credulous fools who follow them, into the pits of the “three-body problem.” To attempt to separate the well-tempered harmonics embedded in Kepler’s treatment of “equal areas,” must necessarily create the “three-body paradox” in elementary classroom physics, as it tends to foster bad musical composition and interpretation among the Romantics. In noting the general case of hysterical denial of such a connection by the Newton devotees generally, note the exemplary relevance of the hysterical denial of such a connection in Kepler’s astrophysics, over which H. Helmholtz and his accomplice Ellis had their fits (*Sensations of Tone*) against J.S. Bach et al., on the subjects of *bel canto* voice-training and on

physics, which he relegated to the attentions of future mathematicians. When Kepler’s such discoveries were matched with Fermat’s discovery of an “anti-Euclidean” geometrical principle of quickest time, as in paradoxical contradiction of the so-called “Euclidean” notion of shortest distance, a generalized form of development of modern physical science, was set into motion, by such followers of Nicholas of Cusa, Leonardo da Vinci, and Kepler, as Christiaan Huyghens and Gottfried Leibniz.

On this basis, Leibniz developed the original differential and integral calculus, according to the combined prescriptions and implications of Kepler’s and Fermat’s seminal discoveries. This calculus is to be contrasted with the fraudulent, but popularized classroom definitions, as the latter are supplied, with the mere appearance of the Leibniz calculus, by such malicious figures as Leibniz-hater Euler, Euler’s follower Lagrange, and the plagiarizing (e.g., of Abel) hoaxster and Laplace creature Cauchy.

Out of Leibniz’s accomplishments in this direction, came his discovery of a principle of *universal least action*, and the still higher principle known as his *monadology*. Through the work of, chiefly Kästner and his student Gauss, and with important contributions by Monge, Carnot, et al., we have the crucial and unique contributions to the founding of a true and comprehensive anti-Euclidean geometry by Bernhard Riemann.

Riemann’s 1854 habilitation dissertation, marks the first act freeing physical science completely, and mathematics, too, from the grip of those “ivory tower” fantasies which had crippled, more or less severely, most of modern scientific work up to that time. This accomplishment, by Riemann, provides the Gaussian foundations for the development of my view of what Vladimir Vernadsky defined as the *noösphere*.³⁰ It is my situating that notion of the noösphere within the framework of my own discoveries in the field of a science of physical economy, that the connection of Leibniz’s principle of *monadology* to solving that problem of *voluntarism* set forth here, can be rendered more fully comprehensible today.

I situate this latter subject by summarizing, as follows, what I have described in earlier locations, as those implications of the concept of noösphere which are brought into their necessary focus by my work in physical economy.

1. *By a physical principle, I signify an experimentally validatable, discovered principle, whose application generates a human effect within, and upon the universe, a quality of effect not otherwise predetermined, than by the impact of the willful human application of that discovery of a universal physical principle.*

the related matters of well-tempering. This and related implications of the connection between the work of Kepler and that of Bach, is a special topic of historiography in itself.

30. op. cit.

The specific quality of difference between that, my preceding definition of universal physical principle, and the usual classroom definitions, is more easily recognized by reference to Vernadsky's definition of the noosphere.

Already, as in 1938, Vernadsky supplied a rigorous definition of the noosphere. The human *noëtic* will,³¹ transforms the functionally definable relationship of the biosphere to the universe it both inhabits and reshapes. The question left unanswered by Vernadsky, is what function defines the way in which mankind may acquire *foreknowledge* of how to take the next step in transforming mankind's action on the pre-existing noosphere?

This is a proposition of the same general type, as Kepler's response to the evident non-uniformity of the curvature of planetary orbits. Where does the determining *intention* lie, by means of which the present moment of action already contains the immediate next turn in a trajectory of not necessarily uniform curvature? This was, contrary to Euler and Cauchy, Leibniz's requirement for the "infinitesimal" interval of the differential calculus. In Kepler's usage: how do we define the *Mind* of the planet; how do we define that stubbornly persisting expression of the *intention* of the planet which can not be attributed to simply mathematically defined uniform cycles? *How is the mind of man able to adopt a successful intention to change the course of history from its present trajectory?*

The known features of the demographic characteristics of human populations, as reflected from both history and pre-history, show that the development of the potential relative population-density of the human species is not random in any sense of that term. There is an expressed *intention*, especially in the long-term rise, since the Fifteenth-Century, Italy-centered Renaissance, of the potential relative population-density of globally extended modern European civilization's impact on the demographic characteristics of the human population as a whole.

This factor of intention, corresponding to Kepler's notion of the *Mind* of the planet, is what is expressed, typically, in the form of explicit intention, as those changes associated with the establishment of the modern (e.g., anti-"free trade," anti-"globalization") form of sovereign nation-state economy, and with the correlated emphasis upon both development of basic economic infrastructure, and investment in capital-intensive modes of scientific and technological progress. This accomplishment depends, also, in a more or less crucial degree, on the extent to which a Classical-humanist form of education dominates elementary and secondary education of children and youth.

Thus, although Vernadsky is explicit, in emphasizing the unique quality of noëtic function of mankind, in transforming the biosphere to higher states of anti-entropy, *his argument does not yet define that specific quality of human intention,*

by means of which that noëtic impulse is expressed as a "trajectory" of such transformation of the biosphere. This omission is addressed, and corrected, by introducing the *voluntarist* definition of "physical principle" described above. *Here lies our debt to Vernadsky, and, also, the debt of his legacy to us.*

The existence of such a principle, is determined solely by the method identified as, variously, *Analysis Situs*, or *geometry of position*. Recall the three-step process of discovery outlined here earlier.

Given a known, existing array (i.e., *manifold*) of experimentally validated universal principles; given an effect, which that manifold prescribes as necessarily predetermined; and given a description of an experimentally definable effect, the which contradicts, paradoxically, that prescription, that by a significant margin of error. What is the universal principle which must be added to the manifold to bring the manifold into conformity with the thus-expanded view of universal reality? Such a "model" illustrates the general principle associated with geometry of position. Such is the way in which physics, as defined by Riemann's habilitation dissertation, supersedes deductive forms of mathematics in all competent practice of physical science, including the science of physical economy.

The result of such change, as Gauss laid the principal foundations for the discovery featured in Riemann's habilitation dissertation, is a recognition of the experimentally measurable effects of the efficient existence of such principles, in terms of the related change in curvature of the physical space-time defined by the inclusion of the newly discovered principle. Hence, the core argument of Riemann's dissertation. Here lies the essential contribution to all science by Riemann; here lies Riemann's indispensable contribution to the fuller comprehension of the nature of the Keplerian orbits and the deeper implications of the work of Leibniz and Gauss.

How, then, can such an experimentally validated discovery of such a physical principle, be applied willfully to produce a new quality of behavior of the observed manifold considered as a whole?

Exactly the same principle of geometry of position, is expressed by J. S. Bach's discovery of a well-tempered system of tuning, and of his method of counterpoint, inversion, based upon a musical expression of the same principle of geometry of position employed by Fermat for the discovery of a principle of quickest time. Bach's use of inversion, whose lawful ordering is reflected characteristically by the *Lydian principle* celebrated in Beethoven's Opus 132, is a perfect example of the principle of *Analysis Situs*, and of the manner in which that principle generates, in this case for music, a principled notion of musical idea. This is the notion of musical ideas, based on the work of Bach, which defines the absolute separation of the methods of Classical thorough-composition of Haydn, Mozart, Beethoven, Schubert, Mendelssohn, Schumann, and Brahms, from the irrational sensationalism of such Romantics as the silly Rameau, Liszt, Berlioz, and Wagner.

31. Hence, Vernadsky termed the result a *noosphere*.

Fermat's argument for a principle of quickest time, in refraction of light, typifies such a paradox of universal import. Kepler's appreciation of the paradoxical implication of the Mars orbit's elliptical form, is also such a paradox. The statement of such paradoxes in the form of contradictions within the manifold of reference in which they erupt, is the conceptual prototype of what is representable by the method of *Analysis Situs* or *geometry of position*.

If the proposed *hypothetical* solution, the new universal principle, is demonstrated, by appropriate form of experiment, to be valid *universally*, that principle is to be added to the manifold. *It is the willful application of such a newly discovered principle of nature, to nature, which causes the relevant change within the manifold as previous extant*. It is the resulting transformation of the manifold, by deleting false assumptions, and adding needed principles, on which the Leibniz notion of characteristic action (i.e., least action) is premised. This notion is already implicit in Kepler's original development of modern astrophysics, and in Leibniz's undertaking the corresponding challenge which Kepler bequeathed "to future mathematicians."

It is the willful action of the individual human mind, in making such a valid discovery of a *pre-existing universal principle* in the universe, which, *by willfully applying that same principle, changes the universe from which that discovery has been adduced*. It is as if to say, that "*In the beginning was the Logos. . .*" This point of principle, already introduced a few pages earlier, has yet much deeper implications, to which I shall come shortly here, in due course.

I must restate this point just made, for both emphasis and clarity.

The characteristic form of action, which distinguishes the human species, from all inferior forms of life, is those discoveries of universal physical and congruent principle, by means of which the quality of man's functional, demographically expressed relationship to the universe as a whole, is raised to a higher level. These discoveries have the effect, of transforming the entire manifold of man's implied knowledge of universal physical principles.

What I have said here, so far, signifies this. It is not so much the individual such discovery, in and of itself, which is characteristic; it is the transformation of the manifold as a whole, from its state prior to the discovery, into its state after the incorporation of the discovery. It is this transformation of the manifold, which supplies a validated discovery of principle its universal character. It is that change in the universality of the manifold, which is the subject of the characteristic form of human cognitive action. It is that characteristic which defines the role of human noëtic activity in effecting those transformations which elevate man's existence within the biosphere, to man's dominant role in the noosphere.

It is this role of the thus-informed human will, so informed, which is the pivot of our concern in this report as a whole.

Manifolds so expandable are implicitly of the general

form of Riemannian manifolds, as typified by Riemann's 1854 habilitation dissertation.

2. There is an hierarchy of three known, respectively distinct types of manifolds which conform to that definition of universal physical principles: a.) The manifold of *non-living processes* in general; b.) The manifold of *living processes* in general; and, c.) The manifold of *cognitive processes*. The general nature of the experimental distinctions, and interrelations among the three classes of manifolds, is that defined, from the standpoint of biogeochemistry, by Vladimir I. Vernadsky. The three, combined as multiply-connected, constitute what Vernadsky terms a *noosphere*.

Look briefly at these distinctions, using the standpoint set forth by Vernadsky.

There are several types of evidence to be considered as either crucial, or relatively so, in distinguishing life as a universal physical principle, from those notions of universal physical principle associated with non-living processes. In other words, what is the evidence, in support of Vernadsky's insistence, that living processes are not derived, by "spontaneous" evolution, from non-living ones?

In each case, as with Louis Pasteur's empirical distinction, in chemistry, between non-living and living processes, or Vernadsky's biogeochemical strategy for dealing with this, we are focussing upon an effect which itself is subject to chemical study after the fact, but which is produced, to be a fact, by a living process, that in a way which can not be duplicated "spontaneously" ("objectively") by a non-living one. Look for the most significant of the fine distinctions presented by such cases.

Thus, for example, by the standard of relative weight of the material involved, the Earth's atmosphere and water are composed, predominantly, of non-living processes, but their existence as an atmosphere, oceans, lakes, and streams, is predominantly a product of a living process, the biosphere. Similarly, fossil rock formations and soil. The net result is, non-living material produced by living processes, by a principle of life itself. Vernadsky defines such non-living elements of the biosphere as among the *natural products* of the biosphere.

In a parallel case, similarly, the powers of cognition unique to the human individual, act upon the biosphere, to produce effects in the biosphere which could exist as they do, only as products of human cognition. Since all three categories of universal principles are known by their production of physical effects, these effects are each among the *natural products* of the corresponding processes, and each category, non-living, living, and cognitive is a universal *physical* principle.

The indicated classes of evidence are to the effect, that life is a universal *physical* principle, independent of, but multiply-connected with what are adducibly universal physical princi-

ples governing ostensibly non-living processes as such. Vernadsky's biogeochemistry makes that point implicitly. Thus, the universe acted upon the non-living processes, to the effect of producing the preconditions for life. *How did the universe know that it should do this?* Ask this specific question of Johannes Kepler, for example. *How did the universe know that it should produce the preconditions for existence of cognitive life within the development of living processes?* Ask Kepler, again.

Broadly, the implication posed by this evidence, of three, demonstrably distinct classes of universal principle, indicates that their multiple connection must be, a single, multiply-connected manifold, comparable, in the history of philosophy, to the Absolute of Plato, which existed "from the beginning." As Vernadsky suspected, without his having studied Riemann's work in terms of primary sources, the physical universe as a whole is of the Riemannian form associated with the connections among the three distinct types of universal physical principle indicated here.

3. My principled contribution, carrying these conceptions to a higher level than specified by Vernadsky, is twofold: a.) I defined the form of such manifolds conceptually, from the vantage-point of Riemann's work, which, on the presently known record, Vernadsky (1938) recognized as of interest, but, at last known record, did not actually undertake; b.) I defined *the principle of physical-economic anti-entropy*, from which vantage-point the functional character of the noösphere must be defined.

From the considerations summarized up to this point, the notion of anti-entropy must be situated, conceptually, within the framework of the Riemannian overview of those three classes of universal physical principles. The underlying quality of the multiple-connectedness of a universe so defined, is that it is characteristically *anti-entropic*.

The transformations in that entire manifold, brought about through experimentally validated discoveries of universal physical principle, which increase man's power in and over nature, per capita and per square kilometer, are the standard for defining anti-entropy as characteristic of the noösphere. This, stated in the terms of a science of physical economy, supplies the notion for, and, also, proves the existence and definition, and the basis for measurement, of anti-entropy.

4. Each of these three types, when viewed from the standpoint of my indicated, original contribution to this field, is defined as a distinct quality of manifold from the standpoint of those experimental methods appropriate for defining a valid universal physical principle, and yet each successive such manifold, *produces measurable physical effects which can not be generated from within the confines of the relatively lower-order manifold*. As a matter of experimental method, the evidence of this

limitation of the relatively lower manifold, as Vernadsky points to that principled method, is what supplies the proof that the relatively higher manifold is a form of existence, absolutely differing in both origin and quality from the relatively lower one.

Again, as I have summarized this above: Vernadsky shows the general nature of this proof, for life, relative to non-living processes, and for the noösphere, relative to the subsumed biosphere. The definition of the explicit role of the cognitive processes in determining the change in relative physical-economic anti-entropy of the noösphere, is uniquely my own contribution, a contribution for which I was, originally, chiefly indebted to my adolescent study and defense of Leibniz's notion of a *monadology* (then, as a defense against Kant's *Critiques*).

This form, in which life and cognition effect qualitative changes in the manifold of an otherwise ostensibly non-living universe, is expressed in the transformation of the functional ordering of relations in the relatively inferior domain, by intervention through action from the relatively higher domain. Thus, *as Vernadsky shows, the principle of life, transforms the characteristics of action within the relevant non-living domain, thus defining the biosphere; whereas, as Vernadsky also shows, cognition's intervention transforms the characteristics of action within the manifold of the biosphere. The characteristic of both transformations, is anti-entropy*. Anti-entropy, not the entropy worshipped by the dupes of such Newton devotees as Clausius and Kelvin, is the expression of the highest determining principle of lawfulness in the universe as a whole.

My contribution, on that specific point, has been, chiefly, to define the physical-economic standard by which anti-entropy in the noösphere is to be defined. It is my work to this effect which has made feasible the kind of method required to conquer a crisis of the type immediately threatening civilization today. Vernadsky points to the crucial, anti-entropic role of cognition as such. I shift the center of the focus to the internal functions of the human will, in willfully ordering the direction of the changes in the biosphere brought about through human cognitive intervention.

Since, in all of these exemplary cases, the form of the action is to impose a physical intention upon the universe, or what Kepler would refer to as the intention of the *Mind* of the universe, *any experimentally demonstrated universal principle, is a physical principle in its effects*. Thus, the universal principles attributable to non-living, living, and cognitive processes as such, are each equally universal *physical* principles.

On this account, from the indicated Riemannian view of the implications of the multiple-connectedness of the three specific classes of universal physical principles, the following issues are begged, and also, implicitly, answered in a provisional way.

Vernadsky's argument, as summarized in the referenced,

1938 location, signifies that the universe is a multiply-connected function of three specific classes of universal principles, each distinct from the other, yet, because they are always efficiently multiply-connected, each and all subsumed by the correspondingly implied, single universal principle. This multiple-connectedness of that single, underlying principle, as I have just summarized the functional implications of that, above, demands that we recognize the universe as the expression of a single principle of universal creation, whose existence, not “Euclidean” calendars, dates an implied “beginning.” *The beginning exists for our knowledge of existence of a self-developing universe, solely as certainty of the existence of a universe which is universally bounded by itself: a simultaneity of eternity*, within which sequences are ordered by action, not clock-time. Time is determined by cognitively-defined sequences, not sequences by clock-time.

However, it also prescribes, without any possibility of legitimate disagreement, that if one accepts the notion of that principle, the “beginning” is not to be found in the purely fantastic expanses of sense-certainty’s pathetic notion of infinitely extended linear time, but rather, as the allegory of Plato’s Cave requires, in the real universe, known explicitly only to cognition. It is only in the physical space-time specific to cognition, rather than bestially naive sense-certainty, that the term “beginning,” can be used by sane persons, as it is in the opening of the Gospel of St. John.

When those implications are taken into account, we require a correspondingly appropriate definition of the word *creation*. To the degree that mankind discovers those intentions of the Creator’s will which are integral to the universality of creation, man takes unto himself, and to his will, the power to employ those intentions, otherwise knowable as universal physical principles, to change the universe in a manner cohering with the principle of universal creation. This, in other words, is man guided by, and acting according to those qualities of *reason* which history shows us are specific to the Classical modes of scientific and artistic discovery and composition.

The power to discover the efficient will to act according to reason so defined, lies in the ability of the individual to rise above the prison-shackles of control by immediate pleasure-pain, to see one’s mortal existence as an instrument acting within, and for, the furtherance of that intention which reason unveils to us as the intention (i.e., universal principles) of creation as a whole. Thus, the immediate intimation of immortality is typified by the continuing contributions of valid discoveries of principle supplied to humanity by great scientific minds and great composers of Classical art-forms from centuries and longer before our time.

Enter Monadology As Such

What I have just summarized in the foregoing arguments, should be readily recognized as a restatement, in the context of the most general implications of relevant and crucial qualities of modern discoveries since, of the notion of a *monadology*

which Leibniz introduced in a number of locations, chiefly among those specifically addressing that named topic. This must seem less surprising to anyone who takes into account, that I was converted to Leibniz’s view on this matter during my adolescent wrestling against the arguments of Immanuel Kant’s so-called *Critiques*, as, a decade later, against the degenerate expression of Kant’s essential argument by Bertrand Russell and such among Russell’s satanic acolytes as Professor Norbert Wiener and John von Neumann.

Now, look again at the relationship between Kepler’s definition of the intention expressed by planetary orbits, and the emergence of Riemann’s apprehension of the intention of Leibniz’s notion of the monad. Situate thus, the choice of approach to be taken to the practical employment of the concept of a monadology.

There are two points of reference, both for defining the notion of characteristics, and for presenting the notion of the *monad* in a fresh, modern way. The one is Kepler’s notion of the harmonically ordered, characteristic orbit of each planet, as defined by the Solar System as a whole. The second is the notion of sovereignty, as adduced from the characteristic of the cognitive activity of the individual human mind: Kepler’s use of *Mind*, in defining the notion of the *intention* governing a planet’s orbit.

The notion of a Keplerian orbit, locates the intention of the orbit in the effect of the position it must *intend* to achieve through motion, as opposed to a position determined by a “Euclidean” form, as a predicate of a mathematically determined trajectory. For Kepler, the relative harmonic value of the orbit, as associated with the equal-areas principle, expressed the nature of this *intention*. The harmonic composition of the orbital composition of the Solar system as a whole, is the second degree of approximation of the *intended* objective of the planet.

This *intention*, expressed by a corresponding *characteristic*, defines a *monad*. The types of existing monads, are assorted among four classes: *non-living, living, cognitive, and absolute*. By “absolute,” we should signify “the universe,” as a universal simultaneity of the eternity of *ideas*, in which time exists only in the sense of a sequence of actions of a cognitive form. I intend, such a universe, conceived as a monad.

The same principle of the monad, is characteristic of the method of well-tempered composition of J.S. Bach, the method upon which the development of Classical thorough-composition, and related principles of performance, were developed by Haydn, Mozart, Beethoven, Schubert, Mendelssohn, Schumann, Brahms, et al.³² The “germ form,” the cru-

32. In the case of Brahms, the perfected exposition of that principle is presented in his fourth symphony, which pivots on the quotation of an inversion from the Adagio Sostenuto of Beethoven’s “Hammerklavier” sonata, Op. 106. The performances of this directed by Wilhelm Furtwängler are of special importance, because of the latter’s reliance on that notion of “performing between the notes” which is integral to the competent performance of a



LaRouche defines the scientific basis for the application of the voluntarist method of making history, from the vantage-point of earlier breakthroughs, notably the work of Leibniz (right) and Vernadsky (left).

cial contrapuntal inversion on which the entire composition pivots, is associated in *the expressed intention of the composer*, and of the adequate performers, as the anticipated unfolding of the completed composition is to be heard.

The form of Classical musical thorough-composition, which Haydn, Mozart, Beethoven, et al., adduced from the preceding discoveries and their development by J. S. Bach, has the essential quality of reducing the entire composition to a single idea, conceived within the cognitive processes of the mind, the conductor, and so forth, as a single, as-if-instantaneous *idea*: a monad. It is that idea, implying the subsequent unfolding of the entire composition, which underlies, governs the competent performer's attack upon the first note. The performer who fails to attack the opening interval of the composition in that way, will, therefore, fail to communicate *effectively*, the *idea* of the composition as a whole to the relevant audience. This also applies to dramas such as Shakespeare's *Hamlet*, in which a failed choice of attack on "To be, or, not to be," will ensure the failure of the performance of that play from that point through the final, ironical exchange between Fortinbras and Horatio, as the body of Hamlet is carried off stage.

Pause for a moment at this point. From this line of development, Kepler specified the necessary previous existence of a disintegrated planet whose orbit had lain, in a harmonically determined orbit, between the orbits of Mars and Jupiter. About two centuries later, Gauss was to show, that the asteroids were fragments whose orbital characteristics were those attributed to the missing, disintegrated planet by Kepler.³³ The

work of Classical thorough-composition, especially a long work as thoroughly-composed in quality as that Brahms symphony.

33. Cf. Jonathan Tennenbaum and Bruce Director, "How Gauss Determined the Orbit of Ceres," *Fidelio*, Summer 1998.

harmonically defined characteristic of the determining orbit of the planet expresses the principle of the Leibnizian monad.

Thus, the planet's orbit, and also the configuration of the Solar system, are incommensurable, but, nonetheless, predetermined trajectories, as the congruence of the orbital characteristic of the missing planet is reflected in the orbital characteristics of the principal asteroids.

We shall return to consider certain functional implications of that, after comparing the apparent sovereignty of the Solar system of planetary orbits, with the sovereignty of the cognitive processes of the individual human mind. Now that we have a general idea of the principles of physical science as such in view, summarize the case for the second type of principles, those typified by both Classical artistic composition, and the study of history and related topics of statecraft from the standpoint of principles and methods of Classical artistic composition. Focus on the matter of the functional relationship of the cognitive processes of the individuals engaged in the discovery and exchange of discoveries of all kinds of universal physical principles, including those of Classical artistic composition.

In the case of Classical irony, such as metaphor or a statement in the form of Analysis Situs, the cognitive action "synthesizing" the solution for that paradox, occurs within the sensorially opaque boundaries of the sovereign cognitive processes of the individual thinker. Nonetheless, the ability to demonstrate the truthfulness of the synthesized hypothetical idea, is verifiable by the standards of *unique experimental demonstration*; and the experience of that synthetic act of cognition can be communicated, by replication, within the sovereign cognitive processes of another individual.

The effectiveness of that discovery, expressed as applied to practice, shows both the reality of the idea, and the way in which that idea, although invisible to sense-certainty, can

be known efficiently, and that knowledge efficiently shared among persons. This is more readily clear for the case of discoveries in experimental physical science, but it is also that quality of Classical artistic composition which distinguishes it, essentially, from the Romantics and such bastard offspring of Romantic licentiousness as modernism and post-modernism.

Furthermore, the ability of the individual to perform such a cognitive action, either as an original discovery, or its replication by another, depends upon the cultivation of those cognitive powers, as in the mode of a Classical humanist education in accumulated such discoveries from previous history.

Compare Classical artistic principles with those of physical science in the following way.

Look at the Leibniz differential calculus from this vantage-point. The differential there is identical, as a character-type, with the distinctive incommensurability of a Keplerian planetary orbit. The differential must be in the mathematical form corresponding to a statement in *Analysis Situs*, as the role of equal-areas and harmonic characteristic points to the origin of the necessary paradoxical expression for the orbit as a whole. That differential is the characteristic of the trajectory in question.

The quasi-sovereign quality of the Leibniz differential, in opposition to the linearized form of Euler, Cauchy, et al., points in the direction of the concept of the monad. It is to be conceptualized as an expression of the ontological principle, “nothing is permanent but change,” rather than an expression in terms of the reductionists’ axiomatically “Euclidean” physical space-time. *The individuality of the element is its sovereign quality, not its likeness to a sensory object.* Hence, the notion of its existence in the form of a monad.

The implicitly task-oriented transmission of such conceptions of physical science, and their technological derivatives, within the functioning of society, defines the subject of both Classical artistic composition, more narrowly, and the Classical study of history and statecraft, more broadly.

The Sovereign Monad

Look again, at Kepler’s use of “Mind,” in referencing the *intention* expressed by a planetary orbit. Now, first, compare that *Mind* of the planet with the sovereign cognitive powers of the mind of Kepler. Next, from that standpoint, view the *Mind* of the Sun, expressed in terms of the panoply of orbital characteristics of the orbits of the Solar system as a whole. View that *Mind* of the Sun through Kepler’s mind.

After that exercise, then regard the function expressed by the intervention of the physical principle of life, into the ordering of the non-living aspects of the universe. Then, view, similarly, the intervention of the cognitive processes into the ordering of the internal processes of the biosphere. After that, then consider these matters in light of the contrary views on thermodynamics, by Clausius, Kelvin, and Grassmann, for example.

At that point, review what has been considered up to this

point, by focussing, first, on the subject of the universal physical principles of life and of cognition, and then return to reexamine the matter of universal physical principles of non-living processes. Start with the human mind and its cognitive powers. To measure, we must first know our measuring instrument; we must begin here, because it is here that we have the knowable concept of the existence of a sovereign mind. We must then compare that notion of a sovereign mind, our own, with the intention shown in its relationship to living processes (the biosphere) and to ostensibly non-living processes, such as planetary orbits, too.

Look inside the cognitive processes of your own mind, the mind within whose sovereign confines that act of discovery occurs, through which mankind’s power in and over the universe is potentially increased. Focus upon the congruence, as demonstrated experimentally, between Kepler’s discovery of the solution for the fallacies of Copernicus’s and Tycho Brahe’s work, and Gauss’s vindication of Kepler’s entire system through the crucial experimental case of the asteroid orbits. Contrast the congruence of that discovery of principle, as by Kepler, with the failures of Copernicus, Brahe, et al., to escape from the illusory domain of pseudo-realities, the neurotic domain of naive intuition, which mistakes sense-certainty for the real universe.

Hence, such cases—and there are many others, of course—lead to the specific quality of notion of *becoming* which is associated with Plato’s dialogues. It is through the faculty of cognition, rather than sense-certainty, that we really know the universe; the idea of the universe presented to our mind by cognition, is not a universe of things swimming, as if in Brownian motion, within some infinite Euclidean soup, but, rather, a universe known to us only through those transformations which result in *changes of axiomatic quality* in our way of thinking about, and acting upon the universe. It is those *changes*, defined in cognitive terms, which are the most elementary form of existence of *ideas*.

For sense-certainty, on the simplest level, eggs or chickens are popularly regarded as self-evident objects. Such is the opinion concerning eggs and chickens among roost-robbers such as skunks, foxes, and sundry varieties of ferrets. In contrast, among cognitively matured persons, in science, the existence of eggs expresses an intention embedded in the existence of chickens, and in the case of chickens, the intention of eggs. However, that intention of chickens or their eggs, does not exist independently of the functional character of the situation in which such intentions are expressed.

It is in the discovery of such intentions, as Kepler adduced the principle of intention, as his notion of universal gravitation underlying the orbit of Mars, that real knowledge of the universe lies. However, the intention of Mars can not be defined, except within the universal setting (situation) of the Solar system as a whole. These notions of intention, are to be contrasted with the Aristotelean dogma of those philosophical incompetents who tolerated Claudius Ptolemy’s hoax for so long; or the credulous sophomores who swallow the popular

fairy-tale, that Copernicus discovered the orbit of the Sun by the Earth; or, Sunday Supplement grubs who write, that modern European culture is “Copernican.” Kepler’s notion of intention, typifies a universal conception of existence, as really occurring in no other form than an intention underlying a *becoming*.

This connection of an intention to the notion of a becoming, is the underlying principle of Leibniz’s discovery of an actual differential and integral calculus, a discovery to which he was led by a challenge bequeathed “to future mathematicians” from Kepler. A specific quality of intention, as associated with a specific quality of becoming, represents a *characteristic*, in Leibniz’s and Riemann’s sense of such a term. This notion of a characteristic, is, in turn, the context within which the notion of a Leibnizian monadology dwells.

This point ought to be clear, merely from the standpoint of the experience of any person who has actually made, or has, perhaps as a student might, reenacted a valid discovery of universal physical principle. I restate it, in summary, now.

The case of a paradox expressed in the form of Analysis Situs, goes to that point. All discoveries occur as the fruit of solutions to paradoxes of an ontological type. The challenge of that paradox provokes an act of conception. It is that act of conception which, if successful, produces the hypothetical form of a solution to such a paradox which is brought into being within an individual sovereign mind. The experimental demonstration of the validity of that hypothesis, defines a universal physical principle.

Thus, the cognitive process which generates a validated hypotheses of that type, is typical of the appropriate mental image of reality. The image of the cognitive process we have experienced in ourselves, in either discovering a valid universal physical principle, or reenacting such an historical discovery, is the only actually existing, rational notion of the real existence of anything. Only to the degree that our conceptions are reached by that cognitive method of generating notions of principle, can anyone say truthfully that, “I know.”

A person may say, “I saw,” or “I heard,” or “I touched,” or “I smelled,” on the basis of confidence in the reliability of one’s ability to distinguish between actuality and illusion in matters of sense-experience. When such a person substitutes the verb “to know,” for “I saw,” or, “I heard,” that person is, in the usual case, speaking untruthfully. Nonetheless, sometimes, as in the case of the experimental validation of a universal physical principle, one can justly say of relevant sense-experiences, “I know.”

For example, a person testifying that “I saw,” may be rightly questioned, “How do you know that that is what you saw?” The person who defends his observation with the outburst, “What I see is what I know!” is committing a misstatement. We do not know what we see; we require some cognitive form of corroboration, before sense-experience can be transformed into knowledge.

For example, in the case the witness testifies, “I saw that man” (pointing), it is often proper, and may be necessary, to

follow that response with a series of queries on the statement with “How do you know. . .?” “How do you know you were not mistaken?” Only in the type of case in which the relevant tests have been actually, or implicitly applied, can a person speak honestly of sense-experience as a matter which “I know.”

However, although what I have just written, is a true statement as far as it goes, matters are not quite that simple.

The ability to define reality in a knowledgeable way, free of illusory popular sorts of intuitions, lies in the social relations defined by cognition, rather than in hermetical “Robinson Crusoe” models. It is in the replication of valid discoveries of principle, by one mind in relation to another, that the discoverer becomes *self-conscious of his own cognitive processes*, through their reflection, as the generation of the same idea in the mind of others.

In this reciprocal relationship between two thinkers referencing the same subject of practice, the one recognizes the act of cognition in the other, and anticipates the recognition of the corresponding act of cognition in himself. So, in this reciprocally self-conscious way, the action of cognition is made into an *object* of cognition.

This notion of a *cognitive* form of *self-consciousness*, is the foundation of all competent education in physical science, and the essence of Classical artistic composition and performance.

It is in the ability to share that cognitive discovery of universal principle with others, in a task-oriented way, that real knowledge of the physical universe becomes a subject of conscious intention. It is in the distinguishing of one such idea, from others, of the same cognitive origin, that we are able to distinguish one idea from another one, as a form of existence of ideas, as situated within a social process.

This social aspect of the process of accumulating valid ideas, cognitively, over successive generations, defines what is properly regarded as Classical principles of artistic composition and performance. The validatable principles of Classical artistic composition, also provide the basis for the apprehension of real history and the arts of statecraft. The discovery of the sovereign nation-state, first accomplished during Europe’s Fifteenth-Century, Italy-centered Renaissance, is among the most appropriate examples of this relationship between valid methods of Classical artistic composition, as by Leonardo da Vinci and Rafael Sanzio, and statecraft.

For example, a Classical tragedy, such as that of Shakespeare or Schiller, is based on a problem defined by actual or mythical history (such as the Homeric epics) of an historically specific actual setting.³⁴ Usually, the composition is true-to-life history. The successfully-performed drama on stage provokes the cognitive processes of the audience into recognizing the implicit error, and probable principled solution to that error, in some calamitous situation in history. The application

34. The case of the work of Schliemann’s physical proof of such ostensibly mythical matters as the matter of the Iliad’s site of ancient Troy, is of this type.

of the critical (cognitive) faculties, to the business of verifying the appropriateness of the dramatic performance, has, then, the function of an experimental test of an hypothesis; if the critical treatment shows the conception generated to be truthful with respect to the principle of actual history so represented, the drama has performed the function of inducing knowledge in the audience, knowledge in the same sense as a validation, in the laboratory, of the claimed discovery of universal physical principle.

Thus, man's mastery of nature, through the progress of physical science, depends upon man's mastery of the development of the social processes within which the unfolding of history and the practice of statecraft are situated. That is the meaning of Classical science, and Classical artistic composition, as expressed, for example, by the 1776 U.S. Declaration of Independence and the 1789 Preamble of the U.S. Federal Constitution.

The quality which separates Classical from Romantic and other vulgar art, is the difference in the quality of emotion which is essential, respectively, to each. In vulgar art, the relevant emotion is, predominantly, sensual effects. In Classical art, it is the cognitive sensation of a "light turning on in the mind." So, in the Passions of J. S. Bach, Christ's Gethsemane decision, is the pivotal feature. In the *St. John Passion*, Bach underscores this by the musical apposition of the hateful cry for Christ's Crucifixion. In the famous Negro Spiritual, "He never said a mumblin' word," it is that "light turning on in the mind" which is the typical referent, in Classical art, for the use of "light," whether in word, or painting. As in Shakespeare's *Othello*, *There is light, and, then, there is light*.

That "light" of the act of cognitive discovery, or of recognition, is a special quality of passion. That passion is the quality of *movement* in Classical art, and in physical science. This quality of passion, associated with cognitive, rather than deductive-reductionist thinking, is the basis for the emotions described, in thinking about man's physical relationships to the universe, as *motion* and *force* in the universe. In all Classical artistic composition and related thought, this is apprehended as Classical inspiration, and, as the quality of Classical-artistic *action*.³⁵ These notions of *inspiration for action*, are the basis for the idea of intention, as Kepler employs

35. Here lies the essence of the difference between the Romantic methods, of both composition and performance, of Rameau, Liszt, Berlioz, Wagner, et al., and the Classical methods of composition and performance of Bach, Haydn, Mozart, Beethoven, Schubert, Mendelssohn, Schumann, and Brahms. This is underscored by the way in which that young pupil of the Romantic Czerny, Franz Liszt, went on to attempt, as shown by Liszt's performance transcriptions, even to turn Classical compositions such as Schubert's *Wanderer* Fantasy into Romantic slush. In Classical musical compositions, and their performances, it is the resolution, as of Classical metaphor, of what appear to be contrapuntal dissonances, created by Bachian inversion, which is the distinctive quality of passion in such music. Furtwängler's "playing between the notes," typifies the method of performance, as opposed to Romantic score-reading for sensual effects, consistent with the Classical world-outlook.

precisely that method of Analysis Situs which I have repeatedly referenced here, to focus his own mind's cognitive powers on the matter of intention in the behavior of the orbiting planet and its Solar system.

The "sense-organ," with which the sovereign powers of the individual mind perceive the manifestation of principle in that physical universe within which the individual person exists, is the "organ" of sovereign powers of the individual's cognition. Just as we represent the sense-experience of sight or hearing with the organ by means of which such perceptions are made, we know the manifestations of principle with a different kind of "sense-organ," that of cognition. So, the images of universal physical principle are crafted by the mind according to the requirements of the organ through which such qualities of principle are perceived: the organ of sovereign powers of cognition.

So, for cognition of principle, the notions of "light," "inspiration for action," and "sense of motion," are the qualities expressed by our power to sense the actual universe which has prompted the mere shadows on the dimly-lit cavern wall of sense-perception.

These cognitive experiences have also the quality of willfulness, as contrasted with simple passions of the flesh. It is the sense of the way in which universal physical principle embodies a willful intention, such as that of the orbit of Mars, or the principle of universal gravitation as adduced, originally, by Kepler, which is the essence of scientific thought respecting nature outside man. It is the perception of Classical-artistic forms of discovery and expression of universal principle, which lends the intention and capacity of action given to it by inspiration, which imparts to audiences for that art the will to act in concert for the sake of the good.

So-called abstract, "objective," logical thinking, is the intellectual cosmetician's preparation of the departed for its journey into that mass grave where hoaxster Claudius Ptolemy's astronomy, and many other useless fabrications of the pedant are buried. Without cognitive passion, there is no validatable discovery of universal principle, but only the tomb where Kantians and their like are buried, dwelling in Purgatory, because Hell will not receive the doubly dead.

Like that celebrated calculus-faker, Leibniz-hater Leonhard Euler, and Laplace's protégé and plagiarist Cauchy after him, Clausius, Kelvin, and Grassmann, among relevant others, concocted what became known as three laws of thermodynamics, on the basis of the purely arbitrary, "ivory tower" assumption, that the universe is implicitly the universe of non-living processes as conceived, axiomatically, by the empiricists and their offspring the positivists.

The later, more radical version of the mid-Nineteenth-Century dogma of Clausius, et al., underwent a further moral and intellectual degeneration, into the forms of radical positivism associated with Bertrand Russell and Ernst Mach. Ludwig Boltzmann come to play a leading role in systematizing the dogma of Clausius et al. Russell acolytes Norbert

Wiener and John von Neumann, compensated for their expulsion, for incompetence and related offenses, from Hilbert's Göttingen University, by concocting the pseudo-scientific dogmas of "information theory" and "systems analysis," and Boltzmann follower Erwin Schrödinger attempted to degrade the discoveries of Pasteur, Vernadsky, et al., into a dogma not inconsistent with the statistical thermodynamics of Boltzmann.

Thus, today, we have the spectacle of what might be escapees from Jonathan Swift's legendary island of Laputa, promising to create an "artificial intelligence," to replace the human intelligence they have repudiated, and to go to the edge of repudiating life itself, thus to make room on Earth for a proposed proliferation of super-human robots.

With the presently ongoing, epoch-making collapse of the so-called "new economy" based upon such drivel as that of Clausius and his successors, religious adoration of those existentialist Nietzschean supermen called "intelligent robots," will dwindle to the ranks of scattered, Flagellant-like, pathetic bands, as the harsh reality of a need for human intelligence in producing the necessities of life, will become, once again, predominant.

When we examine the doctrine of Clausius et al., from the vantage-point of considering the axiomatic considerations pervading this present report, that Tower of Babel created by the empiricists and their followers, such as Euler, Laplace, Cauchy, and Clausius, is a self-evident absurdity. These ostensibly human beings assert, as their fundamental, axiomatic assumption, that the universe is created in its entirety, according to a mechanistic sort of implied deductive-reductionist assumption, that "we have yet to discover whether this universe, will or will not, tolerate the existence of life in general, and human life in particular." On recognition of that devastating axiomatic fallacy underlying their entire system of argument, the fallacy of the doctrine of universal entropy should be obvious to all intelligent and reasonably literate adults.

Take the tack opposite to the axiomatic assumptions of those unfortunates. Ask, not whether life is possible, but, rather, what is the nature of the universe, that it brought us into being, and gave us the ability to increase our powers in and over that universe? The argument, expressed as biogeochemistry, by Vernadsky, indicates the direction of the answer to that question which we must ask of ourselves. My own discoveries and related developments in the field of physical economy, enable us today to express what is otherwise implicit in Vernadsky's work, as a basis for shaping policy in and among nations.

The lesser crime of folk such as Euler, Laplace, Cauchy, and Clausius, which is to say, overlooking the evidence of their malicious intentions, is that their focus upon a radical reductionist's deductive scheme for non-living processes, defiantly ignores the Kepler-Leibniz principle of situation (i.e., Analysis Situs). They deny, rather hysterically, the universe within which they themselves exist.

Each orbit of the Solar system within which they exist, has a characteristic, expressed as the notion of an incommensurable number. So, each object of scientific inquiry, is defined by a similar type of characteristic, and thus represents a monad in Leibniz's sense of the term. However, these types of characteristics, although they can be distinguished experimentally, do not have precisely the same value in all situations in which they occur. In practice, the value of their characteristic is adjusted to conform to the *situation/position* in which they lie.

This implies, first, a unique number for the object as such, but, also, a uniquely qualified number locating the existence of that numbered monad within the functional context of its *situation/position*.

Thus, entropy exists as an observed phenomenon within the situation in which it appears. Thus, for Pasteur, Vernadsky, et al., ostensibly inorganic matter behaves differently, as such matter, within a living process as its situation, than in a non-living situation of reference, such as a decaying remain of a living organism, or simply in a situation which is immediately a non-living one. Yet, Vernadsky emphasizes, from the standpoint of biogeochemistry, those natural products of the biosphere which appear as typically non-living material, have an "historic" determination within the development of the biosphere, which is their relevant "historical" situation. Here the folly of Clausius and the dupes who follow him, becomes obvious.

This principle of situation, as I have just referenced it, once again, here, is crucial. The general view to be emphasized, even for laymen generally, is the efficiency with which cognitive processes change the characteristics of the biosphere, and in which living processes (e.g., the biosphere) transform the characteristics of non-living ones, that as Pasteur, Vernadsky, et al., have shown.

3. Physical Economy & Life

To go beyond Vernadsky's mapping of the challenge, to the manner in which mankind may willfully change its ostensible present destiny, we have three interdependent categories to add to Vernadsky's 1938 image of the noosphere.

First, basic economic infrastructure. How must we make the desert bloom? What must we do, beyond the preceding beneficial conditions for human life already provided by the biosphere, to bring the biosphere itself to that higher state of organization required to increase mankind's power to exist in and over the universe? On this point, our argument directly overlaps that of Vernadsky.

Second, the development of those processes of production upon which the maintenance and improvement of human existence at present and improved levels depend.

Third, the constitution of the organization of society, and of the education and general culture of its people, that in

ways which make possible the cooperative efforts required to organize society's efforts in ways which are appropriate, for both the needed improvements in basic economic infrastructure, and processes of physical production and distribution of essential goods and services.

The three are suitably combined as a single topic, under the heading of the self-improvement of the reproduction of the demographic characteristics of the human species and its households. The principal measurements are made *per capita* and *per square kilometer* of the normalized cross-section of the biosphere. It is the rate of improvement of those characteristics, which is the focus of measurement of estimated values: i.e., *rate of rate of change* of such values.

I begin by focussing upon the role of basic economic infrastructure as the leading feature of the interface between the noösphere and biosphere. On this point, I include some re-statements of what I have stated in locations published earlier.

What Is Basic Economic Infrastructure?

Generically, the term "basic economic infrastructure" should be employed to signify all those improvements in the whole land-area, as land-area, which are required to create the preconditions under which "the desert may bloom." This includes the general development of *transportation, water-management, and power systems*. This also includes emphasis on the *development and management of field and forest in ways which increase the rate of conversion of solar radiation into forms of biomass usable in ways which are to the benefit of promoting the maintenance and increase of the productive powers of labor*. Thus, *it includes urban planning and development, in addition to managed fields and managed forests*.

Look at this in the terms Vernadsky defines the relationship between biosphere and noösphere. Now define that relationship in functional terms, first from Vernadsky's standpoint, and, after that, the standpoint of the science of physical economy.

The geological "history" of the Earth, as portrayed from the standpoint of biogeochemistry, indicates that the pattern of apparent evolutionary emergence of species, must focus less on the idea of evolution by species, and more on the way in which the self-development of the biosphere, through accumulation of its natural products (such as atmosphere and oceans), *creates the preconditions on which the emergence of higher types of species depends*. The significance of the emergent species then becomes, primarily, the impact of its existence in changing the characteristics of the biosphere as a whole manifold.

This self-development of the biosphere, as a biosphere-process, came to the point, some unknown quantity of millions of years ago, at which *conditions of the biosphere necessary for the cognitive life-form, man, were sustainable*. Into this image, we must inject the notion of mankind's further transformation of the biosphere, as through what Vernadsky implicitly defines as the *natural products* of noetic (human)



Magnetic levitation trains anchoring development corridors across continental Eurasia would more than pay for the cost of building and maintaining such corridors, by increasing the production of physical goods.

life, including cultivated forms of fields and forests, and what we today must recognize as the forerunners of modern basic economic infrastructure.

Suppose, then, that society operates to the effect, that a minority of the total population enjoys the benefits of infrastructural improvements, while the majority does not. Then, the development of the potential productivity of the majority will be crippled. We shall soon return, here, under the heading of the nation-state, to that crucial consideration.

Look at central Asia today. There are vast areas with abundance of what are called "natural resources," but which are condemned, so far, to be greatly underdeveloped, for lack of the basic economic infrastructure. There, a dense, highly productive population might live. To bring that change about, basic economic infrastructure must be developed to the point that development corridors combining mass transportation, large-scale water-management, and generation and distribution of power, were supplied within development corridors of up to 100 kilometers width. Such a network of emerging corridors would transform much of this sparsely developed region into a rich potential for growth of population and its prosperity.³⁶

Moreover, with high-speed (e.g., magnetic levitation) transport of freight across continental Eurasia, from locations such as Rotterdam into Japan, and across the Bering Straits, the efficiency of investment in development of physical production of goods would be greatly increased over the present degree of reliance upon transoceanic freight. Every mile (or,

36. On the European Productive Triangle, see footnote 4. On the Eurasian Land Bridge, see Jonathan Tennenbaum et al., *The Eurasian Land-Bridge: The 'New Silk Road'—Locomotive for Worldwide Economic Development* (Washington, D.C.: EIR News Service, Inc., January 1997).

kilometer) of such development corridors more than pays for the cost of building and maintaining such development corridors, a more-than-compensating income experienced in the form of production occurring along each 50 miles or so of the route. This is contrasted with the general lack of production across most of each 50 miles of transoceanic transport. In that sense, because of the increased output and increased productivity it makes possible, a well-developed, and properly explored development corridor, costs the economy much less than a net nothing.

Thus, we must recognize that the superimposition of the noösphere upon the pre-noösphere condition of the biosphere, is not merely something slapped down on top of that biosphere, but, instead, signifies an acceleration of the development within the biosphere as a biosphere, *to the intended effect* of enhancing the preconditions for human development, while also increasing the rate of functional throughput of a biosphere which now includes man and man's activities as part of that biosphere.

I would emphasize the attention of space-scientist Krafft Ehricke to the "industrialization of the Moon," and my extrapolation of that policy, to generating the synthesized natural biospherical-like conditions for a Los Alamos-scale of laboratory-station on Mars. To restate the point: the Solar system developed the preconditions for a biosphere's self-development on Earth, in the course of which, the preconditions for human life emerged. In long-term space-exploration, in which men and women stay "in space" for months or longer, we can not rely indefinitely upon so-called "artificial life support." We must utilize the principles of the biosphere, as we learn those lessons from the emergence and maintenance of human life on Earth, to assist us, increasingly, in developing replications of biosphere-like processes "in space."

Therefore, the development of the biosphere was continued, chiefly through what I have described here as basic economic infrastructure, as an integral part of a noösphere which subsumed it. Our continuation of that process of development of the biosphere (under the reign of the noösphere) is a precondition for the emergence of higher levels of human existence. Man, thus, raises the level of development of the biosphere above that achieved by the pre-human biosphere.

Now, thus, the natural products of a biosphere situated within a noösphere, aggregate to a higher level of quality and relative mass than under the "natural" state which might be achieved by the biosphere alone. For example, man-managed forests, if properly managed, are far less prone to devastating forest fires than the forests of an untamed wilderness. For example, the managed distribution and reprocessing of water, makes possible a great increase of the quantity and quality of biomass per square kilometer. For example, looting family farms down to the bone, with Carter-administration-level sub-parity prices paid directly to farmers, turns vast tracts of agricultural and related land-area into dust-bowls, as occurred in the U.S.A. over the 1920s and early 1930s.

Just as the principle of life intervenes into non-living processes, to change the latter's behavior to the effect we may recognize as the biosphere, so man's cognitive intervention into the development of the biosphere, alters the behavior of the biosphere. In such cases, the subsumed domain's internal laws of behavior of the subject-matter are altered, to the effect Pasteur and others noted in the cases of the fermentation of beer and wine. These changes are measurable, as natural products of life. So, cognition's intervention into the biosphere, redefines biosphere as including those categories of behavior which we recognize as basic economic infrastructure. These changes in the biosphere are measurable ones, and are the preconditions for the maintenance and improvement of human life. They are natural products of the noösphere, and must be so recognized and assessed.

The measurement required, by a science of physical economy, is the *relative rate of increase of the potential population-density of the human population*, taking into account associated improvements in life-expectancy, and improvements in the demographic characteristics of both households and the population in general, their general welfare, as the U.S. Constitution's Preamble specifies that goal to be the inalterable law governing the decisions of our republic.

Production As Such

The standard for measure of productivity is not counted output as such, but, rather, the *relative* rate of increase, stagnation, or decline of the productive powers of labor. This measurement is made in both per-capita and per-square-kilometer terms, and is qualified by the requirement of improvements in the demographic characteristics of family households, and of the population in general. These measurements approximate, and express in that degree, the notion of relative potential population-density. In other words, these are different ways of measuring with fair approximation, the rates of change in the anti-entropy of what Vernadsky defined as the noösphere.

At this point, it is important to forewarn those critics, once more, who might demand a mathematically exact standard of measurement. All important constants in physical science are, by their nature, relative values, and thus ultimately incommensurable. In the topical area of national and world economy, we would warn critics that the value of production, and productivity, considered in the small, varies according to the characteristics of the so-called macro-economic setting in which it is situated. The point of using approximations, is not that our measurements are not sufficiently refined in detail; the point is, that any changes in the noösphere in which the economy is situated, alters the functional value to be assigned implicitly to any localized subject-matter.

Take a case from physics in general. There are strong experimental indications, from work conducted by scientists over decades, that what are usually considered universal constants, may not be exactly constant, but may be altered by the

impact of radiation from stellar space, and, at least under certain conditions, may be different for materials subsumed within living processes than is to be found among the same species of monad found in non-living processes. Thus, in physical science generally, and in economics more narrowly, we must think of characteristics as being incommensurables in the final analysis, as Kepler did.

The magnitude, the characteristic, we are attempting to measure, at least in a reasonable degree of approximation, is a true characteristic, unique to the orbit or other monad-like existence to which it refers. But, we must never forget, that the universe is not the sum of its parts, but a manifold, which is the context and determinant for the existence of each part. Valid new discoveries will not make a characteristic less characteristic; but the exact number associated with it is never known in the n th degree, and may be subject to some significant modification as the extent of our knowledge of the universe is increased.

In changing the biosphere, as the noösphere's existence does, we are changing the "macroscopic" economic manifold within which each act of production, or other economically significant local action occurs. Thus, all estimates of local economic values of production and related things, are approximations. The distinctions made among local such events may be only approximations, but the estimated relative values have the kind of significance for practical application which the idea of a competent approximation suggests.

The paradigmatic essence of the noösphere, is the act of cognition through which the individual mind generates a valid discovery of universal physical principle. Here lies the essence of the quality of anti-entropy specific to the noösphere, the functional distinction of noösphere from biosphere. *Here lies the key to mankind's unique and specific ability to change the universe.*

The construction of the equivalent of what is called, after Riemann, a *unique* experiment, is not only the indispensable proof of a universal physical principle. It is from the requirements of the design of such an experiment, that what we called *technologies* are spun from scientific discoveries of universal principle. One of the most efficient examples of that, is Wilhelm Weber's unique experimental demonstration of the Ampère angular force principle for electrodynamics. The proof of principle is expressed in the design of the experimental apparatus; conversely, it is from examination of the crucial features of the machine-tooled design of the experimental apparatus, that the feasibility of application of the principle flows.

Thus, in modern economy, especially in connection with what are called "crash" science-driver programs, a close, symbiotic kind of reciprocal relationship should exist among the research scientists, the machine-tool-design functions, and the introduction of the validated technology, through highly skilled development teams, into the processes of product-design and production methods. In such cases, the principal variable in net performance, is the development of a cor-

responding structure of employment of the total labor-force, such that the "science driver" components and the immediately supporting strata, are an increasing ration of the total employed labor-force.

Thus, a willful up-shift in the composition of categories of occupations and employment in the total labor-force, must be a process of bringing an increasing portion of that labor-force in ever-closer proximity to "pure physical-economic" generation of rapid rates of advances in technology of both production and product design. It would be useful to call that *the sociological principle of anti-entropy in the noösphere*. We shall return to some crucial implications of this same point, but from a different vantage-point, at a slightly later point in this concluding section of my present report.

The development of the accumulation of experimentally validated discoveries of universal physical principles, takes the form of a Riemannian manifold. The addition of new such discoveries, results in the establishment of a new manifold. *It is the implicitly measurable anti-entropy generated by such an unfolding series of manifolds, which is crucial.* The advance of the development of this manifold is the underlying characteristic which drives physical-economic progress as such. However, the relative benefits to an economy depend upon the willingness and ability of the society to utilize the benefit of such discoveries in terms of transformations in employment, product-design, production itself, and also the development of basic economic infrastructure in a manner and degree which these up-shifts in the technological potential require for their effective implementation in production and distribution.

For example, on the matter of infrastructure. Take, first, the case of power. The ability to realize the benefits of valid discoveries of universal principle, and of related technologies, generally requires an increase in not only the energy-output per capita and per square kilometer, but also such qualitative improvements as increased energy-flux density, and coherent organization of the energy-flows in distribution and application.

In the case of water management, the amount of water throughput required, per capita and per square kilometer, increases. This requirement can be satisfied only by aid of increasingly sophisticated methods of desalination and reprocessing of water.

In transport of freight, the ability to balance the relationship between inventories of work in progress, and of final product, requires the kind of revolutionary improvements in transportation which builds freight-classification and related matters of delivery and inventory management into the inherent characteristics of the system. The use of magnetic levitation transport for passengers, is impressive; but should not obscure the fact that the potential benefits in terms of freight handling and related matters, are far more impressive economically than faster transport of passengers.

In the notion of urban infrastructure, it should be easily recognized by persons with even ordinary literacy, that the

way in which cities have been transformed during the post-World War II period to date, has been increasingly catastrophic in its projectable medium- to long-term effects. The way in which “suburbanism” was pushed, as with New York’s Levittown, or the use of what had been launched, for the nuclear-weapons age, as the national defense highway system, to extract suburbanite ground-rent from former cow-pastures and the like, has been economically, socially, and morally counterproductive, in a very large degree.

Commuters travel further and further. Social life, in the household, and otherwise, deteriorates accordingly. Cities should be built from the subsurface, upward, with principal features of the substructure and other structures intended to remain functional for hundreds of years to come. Given the condition of economic and related rot which has been accumulating inside the U.S.A. and other parts of the world, during, especially, the recent thirty-five-odd years, we are not presently positioned to implement the kind of technological revolution in urban designs to which reason would already point us today. Sometimes, when we have a serious problem, in life, in a nation’s economy, we lack the means to make the obvious corrections; but, experience shows, that being aware of the problem, which we might not have the present means to correct entirely, warns us against continuing the undesirable trend, and orients us toward launching the new trends required for the benefit of coming generations, and the national interest, otherwise defined, as a whole.

The Modern Nation-State

The evidence is clear. The greatest rate of improvement of the conditions of life of humanity ever recorded, came as a result of developments within Europe’s Fifteenth-Century Renaissance. [Figure 1] Through the intertwined role of France’s Jeanne d’Arc, the great ecumenical Council of Florence, King Louis XI’s founding of the first modern sovereign nation-state, and a similar revolutionary role played by Richmond (Henry VII) in England, a new kind of political institution was created in Europe at that time. This was the principle, that *no government has the moral authority to govern, except as it is efficiently committed to promoting the general welfare of all of the population and its posterity*. This led to the later Eighteenth-Century founding of the first true modern sovereign nation-state republic, that of the U.S.A., during the interval 1776-1789. I have addressed this matter, in numerous publications and public addresses delivered over a span of decades. It is necessary to summarize some of that material again, here, in order to make a clear point.

All cultures in known history, prior to that Fifteenth-Century revolution in the practice of statecraft, were like the imperial tyrannies spawned in ancient Mesopotamia. They were of a form consistent with what Classical Greek writers knew as the *oligarchical model*. In this general class of types of societies, a relative few, a ruling caste, or oligarchy, aided by a retinue of armed and other lackeys, ruled over the majority

of their own and other people, degrading those over whom they ruled to the condition of wild or herded human cattle. The oligarchy variously hunted, herded, bred, and culled those herds, as a farmer takes wild game from the field and forests, and culls his herd of those specimens considered too independent in their impulses, or an excess or otherwise undesirable portion of the total population. Such was ancient Babylon, such was the Sparta designed, like Rome after it, by the Delphi cult of the Pythian Apollo.

This was the condition of mankind under the Roman empire, both in the West and Byzantium. This was the condition, as specified by the Code of the Roman Emperor Diocletian, which became the backbone of what passed for law under European feudalism.

Although the idea of the republic was well defined by Plato, and although the fundamental principle of U.S. constitutional law, the so-called “general welfare” clause, was inherent in Christianity, the struggles to bring about a just society, so constituted, were frustrated until Europe’s Fifteenth-Century revolution in statecraft, a revolution summed up by two influential writings of that period, by Nicholas of Cusa: his *Concordancia Catholica*, defining a community of principle among sovereign nation-states, and his *De Docta Ignorantia*, the founding work of modern experimental science. It was Cusa and his immediate circles, who prepared the way for, and inspired, voyages such as that of Christopher Columbus, and launched the evangelization carried into such places as the Americas.

During the interval from the period of the Second and Fourth Crusades, and continuing into late during the Seventeenth Century, Venice emerged as the chief enemy of the attempt to develop the modern nation-state. This was the Venice which had emerged from those crusades as an imperial maritime power, throughout the Mediterranean littoral and Europe generally. In the effort to abort the development of the sovereign nation-state and the new quality of culture it represented, Venice drowned Europe in repeated religious wars over the interval 1511-1648, concluding with the 1618-1648 Thirty Years War.

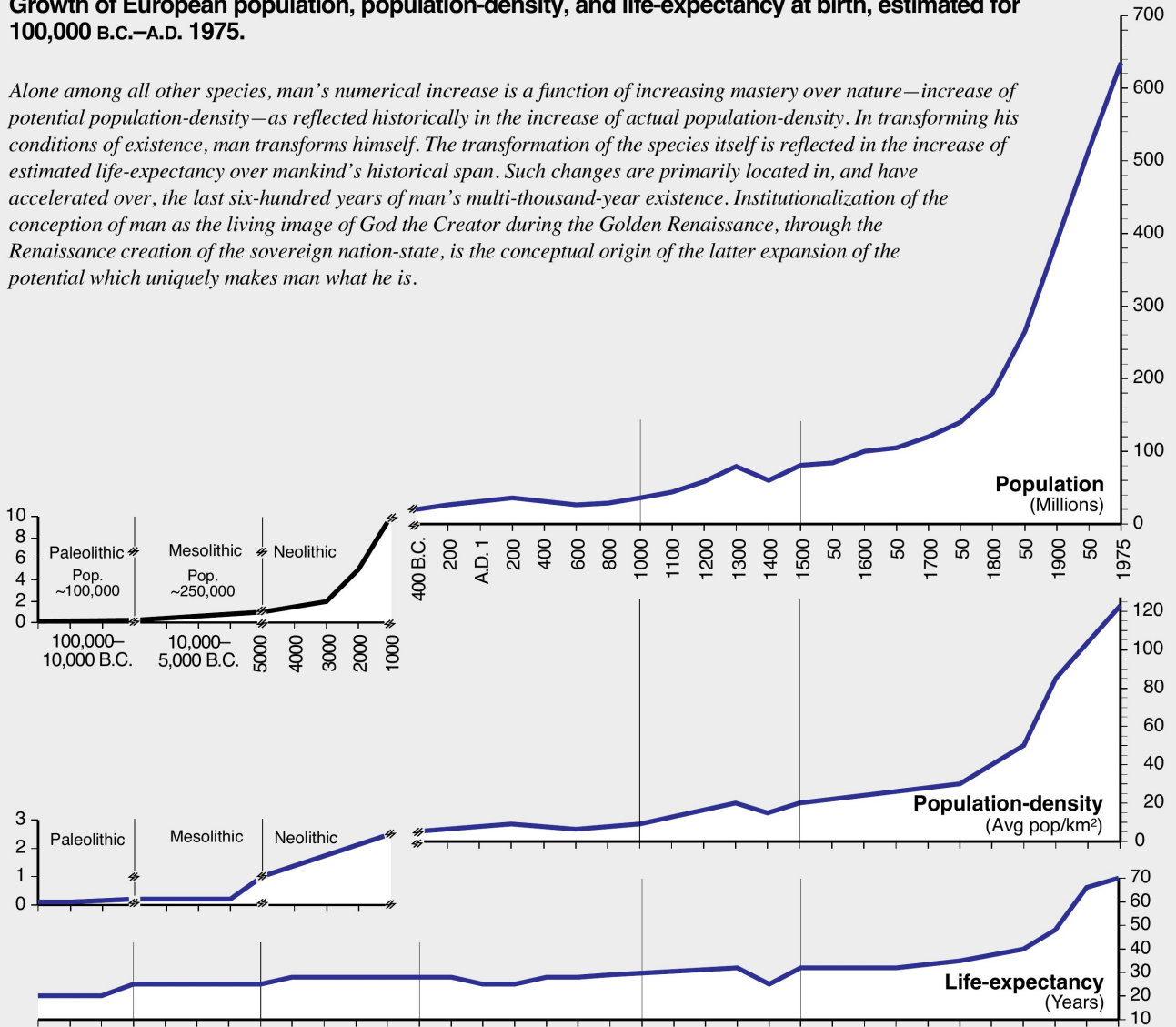
Under these conditions of the 1511-1648 interval, and still later, more and more of the republican leaders in Europe looked to the Americas as a place to build up colonies which could be developed into sovereign nation-state republics. There were frustrated, if often heroic efforts to that purpose among the independence movements of Central and South America, but only in the United States was a true such republic established. The 1776 Declaration of Independence and 1789 Preamble of the U.S. Federal Constitution typify this connection to the Fifteenth-Century Renaissance.

Ours was an embattled republic from the beginning. With the July 14, 1789 storming of the Paris Bastille by those who had been or were the agents of London’s Lord Shelburne and Jeremy Bentham, France, the U.S.A.’s chief ally of the 1776-1783 War of Independence, fell into the 1789-1794 Jacobin Terror, and, thence, under the reign of Barras and the first

FIGURE 1

Growth of European population, population-density, and life-expectancy at birth, estimated for 100,000 B.C.—A.D. 1975.

Alone among all other species, man's numerical increase is a function of increasing mastery over nature—increase of potential population-density—as reflected historically in the increase of actual population-density. In transforming his conditions of existence, man transforms himself. The transformation of the species itself is reflected in the increase of estimated life-expectancy over mankind's historical span. Such changes are primarily located in, and have accelerated over, the last six-hundred years of man's multi-thousand-year existence. Institutionalization of the conception of man as the living image of God the Creator during the Golden Renaissance, through the Renaissance creation of the sovereign nation-state, is the conceptual origin of the latter expansion of the potential which uniquely makes man what he is.



All charts are based on standard estimates compiled by existing schools of demography. None claim any more precision than the indicative; however, the scaling flattens out what might otherwise be locally, or even temporally, significant variation, reducing all thereby to the set of changes which is significant, independent of the quality of estimates and scaling of the graphs. Sources: For population and population-density, Colin McEvedy and Richard Jones, *Atlas of World Population History*; for life-expectancy, various studies in historical demography.

Note breaks and changes in scales.

modern fascist, Napoleon Bonaparte.³⁷ With the outcome of the Congress of Vienna, the U.S.A. was isolated and imperilled, from without (from London and the Holy Alliance) and from the American Tories among financier and slaveholder

37. The self-defined “new Caesar,” Napoleon was the model copied by Mussolini, Hitler, and other fascists of the post-Versailles decades. The model for modern fascism was prescribed by Bonaparte enthusiast, and sometime Metternich agent, Prussia’s state philosopher G.W.F. Hegel. Although Karl Savigny was influenced by and sympathetic to Hegel, the most consistent

interests within. Then a great protégé of former President John Quincy Adams, President Abraham Lincoln, defeated Britain’s Confederacy puppets in the Civil War, and, in concert with Henry C. Carey, launched the great agro-industrial development which established the U.S. economy as the most

follower of Hegel was the Carl Schmitt on whose Hegelian doctrine of law, and included theory of the state, the enactment of the decree of February 18, 1933, establishing the Nazi dictatorship, was premised.

powerful, and technologically most advanced among nation-states of the world. This established *the American System of political-economy*, of Alexander Hamilton, Mathew Carey, Friedrich List, and Henry C. Carey, as the best form of economic policy existing among the nations of the world.

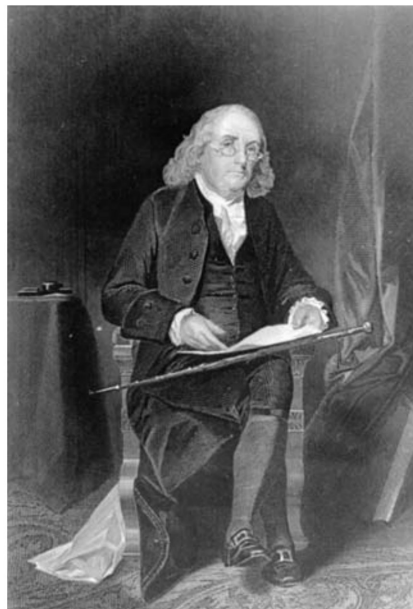
With the 1901 assassination of President William McKinley, the government of the U.S. fell into the hands associated with two unrepentant heirs of the Confederacy, President's Theodore Roosevelt, and overt Ku Klux Klan fanatic Woodrow Wilson. President Coolidge was no better. Under the conditions of a great economic crisis and the onrushing threat of a new world war, President Franklin Roosevelt returned the U.S., for a while, to the American intellectual tradition expressed in its Declaration of Independence and the Preamble of its Federal Constitution. Nixon's Southern Strategy campaign of 1966-1968 marked the turn leading into a return to the reign of neo-Confederacy ideologies and practices of Teddy Roosevelt, Woodrow Wilson, and Coolidge, within the top ranks of both leading political parties.

Throughout its history to date, that American intellectual tradition has been inseparable from an ecumenical foreign policy. It was so with Benjamin Franklin. This was expressed by the 1823 Monroe Doctrine crafted by the Franklin-trained John Quincy Adams; it was the heritage of Abraham Lincoln, and the theme of Franklin Roosevelt's "Good Neighbor" policy and President John F. Kennedy's "Alliance for Progress." Nixon's Secretary of State Henry A. Kissinger typifies those who, out of their own mouths, have been consistently on the opposite side.

That summary overview thus supplied, now focus upon those axiomatic features of the sovereign form of modern nation-state which account for its vast superiority over all earlier cultures in promoting the general welfare of mankind.

The functional distinction of the sovereign form of modern nation-state republic, is that it ends the subjugation of the majority of the population to the status of virtual human cattle. It is the shaping of economic and related policies according to that intention, which imposes upon government the responsibilities for: a.) protecting the national economic development, as measured in per-capita and per square-kilometer terms; b.) the promotion of the development of the basic economic infrastructure of the national territory as a whole; and, c.) the promotion of scientific progress and use of the technologies so derived, to promote the advancement of the productive powers of labor of all of the households of which the population is composed.

It was the approximation of such measures, under Louis XI, which resulted in the virtual doubling of the national income of France under the few decades of his reign. The electrifying transformation of England, under Henry VII, is a comparable case. It was these and related policies, derived from the axiomatic features given authority during the Fifteenth-Century Renaissance, which embedded in the impact of those radiated features of the modern sovereign form of nation-



Benjamin Franklin, the early leader of the American Intellectual Tradition, proposed a U.S. foreign policy based on the perfect sovereignty of all nations in a community of principle.

state, the impetus for its unprecedented effect of improving qualitatively the demographic conditions of life of populations.

In all of this, the essential point is, the promotion of the development and application of the individual person's cognitive powers, both in terms of science and technology, and in the cultural activities properly classed under the heading of principles of Classical artistic composition.

As is typical of the way in which the United States has been self-destroyed under the influence of existentialist degenerates such as Theodor Adorno and Hannah Arendt, the greatest crime which recent decades have perpetrated upon the families of the U.S.A., is far less the oppression of their bodies, than the degree of success in destroying their souls. By denying the existence of knowable truth, that in favor of mere opinion, and rejecting the socratic methods by which the individual may discover truth, and by imposing methods of classroom and related education, which emphasize the sensual, as opposed to the cognitive, the mental powers, and morals of the population have been greatly undermined, where they have not been yet destroyed.

It is the florescence of Classical education and practice in science and art, which nourishes what becomes both the productive potential of the population, and its inclination to cooperate in bringing related improvements in the material and cultural conditions of life into general practice. The human individual is naturally creative; that distinguishes him, or her, from the beasts. That is the quality of that individual, which, if evoked and encouraged, is the source of upward tracks of revolutionary improvements in the condition of mankind. That, which Plato and the Apostle Paul would identify as the principle of *agapē*, is the power of mankind to change the universe.