

More on Insight: Science & the Making of History

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In several reports delivered, over the course of recent time, I have emphasized the importance of the work on science by the LaRouche Youth Movement (LYM) and LaRouche Political Action Committee (LPAC) teams, work ranging from that of the Pythagoreans, into the work of such as Kepler, Gauss, Riemann, and Vernadsky: as the necessary foundation and guide for a competent study of the history of European civilization. Since this approach takes us through some successive changes in the internal history of science itself, it is crucial that the account of history be premised on the notion of certain higher degrees of insight, as I have defined insight autobiographically, since that time in my adolescence I had justly rejected Euclid, through my subsequent, higher efforts on that same account.

In this present report, I continue along that pathway, from its inferred, ancient origins, toward its own importance for a competent grasp, today, of that series of great crises of globally extended development of modern European civilization, which is to be traced from the work of Cardinal Nicholas of Cusa's founding of modern science, into the time of the accelerating global economic breakdown-crisis, now in an advanced stage.

Where It Begins...

Some months ago, the LPAC website presented an animated study, *Firewall*, a study of the infamous, great 1923 hyper-inflationary collapse in Weimar Germany. That report emphasized the scientific relevance of that case-study for understanding the presently onrushing, global, hyper-inflationary collapse which is currently unfolding, a present collapse, under post-2005 conditions, a collapse which has been pre-shaped by the recent years' ruinous collaboration between now former British Prime Minister Tony Blair and U.S. President George W. Bush, Jr.

Now, LPAC is preparing a comparable, but much more far-reaching, historical study, a study of those continuing principled, ill-conceived, globally strategic conditions, which have been a lawfully unfolding, continuously evolving process, up to the present date, since the

strategically crucial, 1890 firing of Germany's Chancellor Otto von Bismarck. That was the firing which triggered, directly, not only both of the two so-called "World Wars" of the Twentieth Century, but also led into the presently onrushing, hyper-inflationary phase of the collapse of the world's 1971–2008, post-Bretton Woods monetary system.¹

The latter LPAC report, currently in preparation, will focus on the interval from the firing of Bismarck, to a relevant point past the 1932 nomination and election of President Roosevelt, presenting this period of history as an interval taken as being the pivot for study of the crucial features of both the global history of the 1890–1945 interval as a whole, and the continuing consequences, still today, of both attempted wrecking of President Roosevelt's heritage, that both by President Truman, and by the sweeping destruction of the Roosevelt legacy during the post-1963 period, especially since the inauguration of the disastrous U.S. President Richard M. Nixon.

In the course of the following pages, I shall summarize those, presently, rarely known principles of scientific physical economy, which underlie the needed understanding of both that crisis and its available remedies. I begin this here with some prefatory remarks which are needed to outline the topical area to be covered in what will be the soon forthcoming, new LPAC report.

In the first case to which I had just referred, here, above, the case of the Weimar hyper-inflationary crisis of 1923, Germany's crisis was controlled entirely by forces coming from outside a virtually helpless Germany itself at that time, a crisis which was organized as the already expressed intention of those conditions imposed at Versailles. Today, a somewhat comparable situation exists, a crisis caused, most immediately, by the chain-reaction effects set off by a post-1989 -process of intended dismemberment of the economy of a re-unified Germany. This has been the intentional wrecking--operation, which was launched, and carried forward, principally, by an ironically Versailles-like, Maastricht Treaty, a treaty imposed not only upon Germany, but, now, with the recent appearance of the proposed Lisbon Treaty, imposed, implicitly, and also efficiently, upon all of western and central continental Europe. Maastricht itself was a treaty dictated by the British empire's Prime Minister Margaret Thatcher, aided by her accomplice and virtual lackey, President François Mitterrand of France; but, it was also done with the complicity of then U.S. President,

¹ As Chancellor, Otto von Bismarck had maintained his assurances to Russia's Czar, that Germany would not support Austria's Habsburgs in a Balkan war by the imperial Austro-Hungarian monarchy. This role by Bismarck was the chief barrier, besides that of the Presidency of France's Sadi Carnot, which prevented Russia from entering into an anti-Germany pact with what was to become the Anglo-French Entente Cordiale war against Germany. The assassination of President Sadi Carnot, following the ouster of Chancellor Bismarck, made World War I virtually inevitable, especially so after the assassination of U.S. President William McKinley. Notably, during a Baltic cruise of 1905, Germany's Kaiser Wilhelm II and Russia's Czar Nicholas II had complained to one another that their uncle, Britain's King Edward VII intended to have the two nephews—those worse than silly, witting fools!—go to war against one another.

President George H.W. Bush, whose outlook, ironically, was shaped largely by the circumstances which led into his own beknighting by the British monarchy.²

In both cases, that of the Versailles Treaty and the global implications of the Maastricht Treaty for today's world at large, the crisis created by the British Empire was allowed to occur only because of, in the first instance, the complicity of the relevant U.S. Wilson Administration, in the case of Versailles, and, in the second instance, the complicity with a London intention, a complicity which has been demonstrated by the combined effects of the respective George H.W. Bush and George W. Bush, Jr. U.S. administrations.

The awful ironies of it all continue, as follows.

In the case of World War I and its aftermath, it was the 1901 assassination of U.S. President William McKinley which made possible the turnabout of the U.S., to ally itself with our republic's traditional, imperialistic enemy (since February 1763), Britain. This 1901–1932 turnabout, to a U.S. alliance with our republic's adversary Britain,³ came under, most notably, two U.S. Presidents who were sympathizers of the tradition of Confederacy, and also British assets, Theodore Roosevelt and Ku Klux Klan fanatic Woodrow Wilson. Thus, the assassination of President McKinley, echoing that of France's President Sadi Carnot earlier, led most immediately, into World War I and its Versailles aftermath.⁴

² Ironically, this George Herbert Walker Bush, is the son of the late Prescott Bush, who, as the relevant executive of Brown Brothers, Harriman, ordered the historically crucial moving of funds into the coffers of an otherwise virtually bankrupt party of the Adolf Hitler who was, in turn, with aid of Hjalmar Schacht, chiefly a creation of the Bank of England's Montagu Norman. It was the son of that George Bush, who, as current President of the U.S.A., out of a blindly loutish cupidity, sheer meanness, and stupidity, has played an awful role for his part, over more than seven years, in bringing the world as a whole to the brink of what now threatens to be the greatest, global financial collapse in all modern history. It is that latter George Bush who, like his family, is, most ironically, lately occupied with the matter of the current U.S. President's legacy in history.

³ Note the early 1920s effort, by a Britain in alliance with Japan, to force the breaking up of U.S. naval power, that through the not-so-secret alliance of Britain with a Japan assigned, as plotted already, then, to undertake the destruction of the U.S. Pearl Harbor Naval base, that as a part of the joint Britain-Japan plan for wrecking U.S. naval power. This was the same plan which Japan was to carry out in December 1941, then as an ally of Hitler's Germany, (cf. U.S. responsive war-plans "Red" and "Orange," as those agreements and developments are reflected in the famous victimization of U.S. General Billy Mitchell).

⁴ Theodore Roosevelt was the nephew and trained protege of the U.S. traitor who had been the London-based head of the Confederacy's intelligence service during that U.S. Civil War which had been designed, by Lord Palmerston's Britain, to break the U.S.A. into two, or more relatively impotent adjuncts of the British empire. Woodrow Wilson's own personnel tradition was his attachment to the Ku Klux Klan, which he relaunched, personally, from what Teddy Roosevelt had nicknamed "The White House," whereas President. Theodore Roosevelt's legacy in the U.S.A. today is typified by the (H.G.)Wells Society, the latter the tradition of the publicly avowed fascist H.G. Wells' *The Open Conspiracy*, and of such Wells cronies as Luciferian Aleister Crowley and Bertrand Russell. Those who "do not believe in conspiracy theories" are therefore to be classed as simply ignorant, illiterate, immoral, or even actively insane.

The train of such ironies rolls on.

In the case of today's post-1971 wrecking of the U.S. economy, it was the 1963 assassination of U.S. President John F. Kennedy which had facilitated the subsequent pattern of decadence into which the U.S. itself has been plunged, over the 1971–2008 interval, with the 1971–1972 wrecking of the Bretton Woods system, and the willful, intended, virtually treasonous, 1971–1981 shattering of the U.S. internal economy, through wrecking-measures set into operation by the imperialistic trans-Atlantic financier oligarchy, that under the nominal direction of U.S. Presidents Nixon, Ford, and Carter.

Therefore, the LPAC study now in preparation for early completion, will focus on the interval marked by the run-up to, and outcome of two successive, so-called “World Wars” of the Twentieth Century, that over an interval, 1890–1945, leading from that fateful ouster of Germany's Chancellor Otto von Bismarck which made World War I possible, over the interval until that death of President Franklin Roosevelt which made possible the wretched Presidency of Harry S Truman. To understand this 1890–1945 process, it is necessary to put significant emphasis on those relatively most crucial and global strategic developments, during a broader span leading from the London-directed assassination of U.S. President Abraham Lincoln, into 1890, and also leading into the aftermath of 1945; however, the core of our attention in the forthcoming LPAC report will be the great geopolitical crisis of the entire 1890–1945 interval, and its aftermath. The process linking the 1890 ouster of Bismarck and the effect of the 1932 nomination and election of Roosevelt, is the most crucial feature of that report.

The Franklin Roosevelt Legacy

Once those 1890–1945 developments are made clear, it is the 1945–1968, post-Franklin Roosevelt portion of this process, which situates that process which led from the assassination of President John F. Kennedy, into the much more radical, 1969–1981 wrecking of the U.S. dollar and its economy, a wrecking of the U.S.A. which was launched under the administration of President Richard Nixon. That has been the current, post-1968–71 trend of the trans-Atlantic economy since the U.S.A.'s 1968–1981 turn, downward, under the relevant, rising influence of the “68ers,” and policies, such as those of the Trilateral Commission, imposed during the terms of Presidents Nixon, Ford, and Carter. Thus, since the wrecking of the U.S. economy under the combination of those Presidents and the depraved “cultural-paradigm shift” in which the hard-core “post-industrial” fanatics from among the “68ers,” such as former Vice-President and currently British asset Al Gore, have played a crucial, destructive role. Our republic has been misled, thus, into a continuing, crucial physical-economic and related, 1971–2008 decline of the U.S. dollar, a decline which has brought on what has now become, since late July 2007, the presently ongoing lurch into

what now threatens, more or less immediately, to become an unprecedented form of early, global, general breakdown-crisis of the planet as a whole.

Formerly, the U.S.A. had maintained some semblance of the legacy of President Franklin Roosevelt's 1944 design of his Bretton Woods policy, and pursued President Roosevelt's commitment in that degree. Franklin Roosevelt was committed, until the moment of his death, to a world freed of British and related forms of colonial oppression by the British empire: although the United Kingdom, as a sovereign nation-state, with its population, would both actually benefit greatly from this change from empire to nation-state.

Unfortunately, virtually at the moment of that President Roosevelt's death, his successor, President Harry S Truman, an admirer of Britain's Winston Churchill, acted to defend the same British empire from which President Franklin Roosevelt had intended to free the victimized peoples of world. Excepting some special actions under Presidents Eisenhower and Kennedy, that has been the lackey-like service of our Wall Street-controlled Presidency to Britain, as at the present moment of the current U.S. Presidential campaign, since the death of Franklin Roosevelt, especially the assassination of President Kennedy, up to the present moment of my writing this.

The key point to be emphasized in this connection, today, is that the British empire was not a creation of an actually sovereign people of the United Kingdom; it has been established as a coopting of what became the United Kingdom, into being an instrument of an occupying international financier oligarchy, one best identified as currently centered in the Anglo-Dutch Liberal financier interest. This oligarchy, as typified by World Wildlife Fund's Prince Philip and his crony, the late Prince Bernhard, uses the British monarchy, which it, in fact, created as the oligarchy's political instrument of that time, rather than the other way around.

As I have emphasized, in an earlier location, in no case, from the birth of the Roman Empire, to the present day, has any empire developed within globally extended European culture as a secretion of a nation-state. In each case, as in the formation of the Roman empire by initiative of an agreement, reached on the Isle of Capri between Caesar Augustus and the oriental priests of Mithra, or, as in the case of the financier-oligarchical creation of an imperial London, it was the empire itself which chose the place where its evil spirit was to be incarnated—reborn—as the old empire's new capital.

All significant relics and other expressions of imperialism loose in our planet today, are essentially products of the London-centered, new-Venetian financier-oligarchical interest, one which was first established under the leadership of the founder of modern Liberalism, Paolo Sarpi. It was Sarpi's impetus, in moving the center of Venetian financier-oligarchical maritime power northward, from the Mediterranean, toward the northern coast of Europe, which established, first, the Netherlands, and, then, after William of Orange's usurpation,

the British Isles, as the center of political and military power of the new Venetian financier imperialism which reigns in Europe, and also among the relevant dupes throughout the Americas today.⁵

Our U.S. republic was created to find a different destiny than that British empire intends for us still today.

Our United States was created, in fact, by the impetus of the influence of the founder of modern physical science, Cardinal Nicholas of Cusa. In this matter, it was the legacy of Cusa, which Cusa's writings brought to Christopher Columbus's attention, which defined Columbus' intentions for his trans-Atlantic voyages, and which thus launched the movement to establish true republics, based upon a European republican policy akin to that of Cusa himself, a policy which would come to create a place in North America, which, in turn, would serve as a place of incarnation at as great a distance as possible beyond the reach of those oligarchical traditions which continued to spoil the destiny of nation-states within Europe itself.

Our United States is, thus, the embodiment of the dedication, by its leading founders, to bring the best legacy of European republicanism to a relatively safe distance from the immediate reach of those European oligarchical traditions which greatly handicap Europe, even still today, and whose penetration of the Americas, as by London's Wall Street gang, has been the chief cause of all those miseries we of the American hemisphere have foolishly imposed upon ourselves, to the present date.

The special importance of the study which I am publishing here, is that it represents the proposal for an urgently needed departure from the systemic failures of both currently prominent historians and economists, most notably, their failure to grasp that most essential principle of a true science of history. That principle, which I have adopted as my own, has been chiefly responsible for my unique success, over past decades, not only as a long-range economic forecaster, but in my use of that principle, generally unknown among today's academics and financial officers alike, on which any competent form of long-range economic forecasting depends, absolutely, today.

In that history to which I have referred in the preceding prefatory remarks, there is an underlying, little known principle of reason governing both these developments and the alternatives now set before us, and also set before the world as a whole. There is a little

⁵ Since 1989, the intention of the British Empire has been to exploit the breakup of the Soviet bloc of nations, by steering the post-1989 world into a decadent system, in which sovereign nation-states are replaced by financier-oligarchical city-states akin to the system of the Fourteenth-Century Lombard League, a system like the presently proposed set of "ppp's," as by New York Mayor Bloomberg, Governor Arnold Schwarzenegger, the Rockefeller Foundation, *et al.*, which former system had collapsed into the Fourteenth-Century "new dark age."

known, but knowable principle of a science of history, which accounts for our past, and for those options handed to us, from among which we must now choose our nation's, and, also, the world's future. It is that precious principle with which I wish to acquaint you, as I do here, today.

That much said so far, to introduce this work, we shall now begin the needed treatment of the subject of history afresh, from the actually known beginning.

1. The Economy of Genesis

The first presently known presentation of a scientifically competent form of an account of history, is limited to the opening chapter of *Genesis*, a chapter which treats the subject of history, within itself, as a chained series of beginnings, each listed such event occurring in the form of those successive beginnings which are each identified as an *anti-entropic* act of *creation*, rather than, foolishly, merely kinetic reactions to immediately preceding events: the latter reaction has been a foolish kind of choice which has become the typical, presently ruinous outlook among most of today's economists and public officials.

The knowledge which tends to confirm the accuracy of that Biblical chapter's higher hypotheses, is centered in the delightful truth of the news that the Creator willfully created the species of man and woman in the likeness of *Himself* as a *creator*, and that for the intended purpose of assigning the human species the mission of tending to the care of those of the Creator's premises which it is able to occupy, whatever the extent of that territory might turn out to be.

There is nothing in competent science today which could be competently said to gainsay the account of that chapter. That, therefore, is the only premise of which we know, which accounts for the existence of a universe in which the existence of man and woman as we know that species, could have occurred. In our existence, so, that secret of the universe, called science, is also implicitly embedded.

Admittedly, what that chapter of *Genesis* does not say, is vast. However, we should not complain about that; that Chapter settles the really hard, most crucial issues, by presenting to us a higher hypothesis with which a competent known science could have no competent disagreement. By *higher hypothesis*, we should agree, we should mean acts of creation, rather than the inert, fixed objects of the infamous, *a-prioristic* presumptions of Aristotle, or those of today's more simply brutish, so-called "materialists" or existentialists.

That higher hypothesis corresponds to the unfolding of the process which includes the featured role of the creative powers of the human individual, the power to effect those kinds of revolutions in human practice, through which our species' unique kind of power to exist is

increased, quantitatively, through *creative (qualitative) discoveries* of the type of *higher universal principles of creation*, discoveries which only the inspired individual member of the human species is able to accomplish. It is by means of our gaining the needed comprehension of our own creativity, that which exists sovereignly as a potential within each healthy person among us, that the Creator has equipped each among us with the inborn potential to make those discoveries which are, by nature, consistent with the miraculous mission which **Genesis** 1 considers as assigned to man and woman.⁶

If we compare the increase of both the human population, and the productive powers of the individual human beings, with the behavior specific to all lower forms of life, the higher apes included, the human species is distinguished absolutely (*categorically*) from all other forms of life, that by the ability of our species, through its mental-creative powers, to increase its own specific potential relative population-density, as no form of animal life could do this. This argument has been made clearer to all who could actually think, as by the work of Russia's Academician V.I. Vernadsky, who pointed out that, whereas, the ration of products of life on Earth, such as the atmosphere and oceans (the *Biosphere*) is increasing relatively to products of inorganic chemistry, the ration of products of physical chemistry specific only to human activity (the *Noösphere*) is increasing relative to the other products of living processes.⁷

This increase of the Noösphere, relative to both the inorganic domain and Biosphere, is shown, by the nature and effects of the increase of the human population, to be the natural expression, a natural, absolute distinction of the human species from all lower forms of life. Thus, on the basis of this and related evidence, we are obliged to divide the universe as a whole, insofar as we know that universe presently, among three categorical phase-spaces: 1.) The so-called inorganic; 2.) The Biosphere; and, 3.) The Noösphere. The crucial implication of this, is the evidence that the Creator of the universe is characterized, ontologically, as manifesting the same universal physical principle, that of His continuing power of Creation, which is otherwise specific to the immortal potential embodied in each

⁶ As I have emphasized this word of warning in locations published earlier, some of the worst theology encountered among so-called "fundamentalists" today, is their implicit adoption of a wickedly libelous insult against the Creator himself, a libelous notion justly attributed to the Sophist Aristotle, among others. That Sophist's argument, as echoed in the work of the Roman era's hoaxster Claudius Ptolemy, was the insistence that the Creator had made a perfect universe which, therefore, could not be subject to change by the Creator Himself. This left the possibility of changes to the work of the Devil himself (or, perhaps Dostoyevsky's "Grand Inquisitor"), a theology whose evil consequences have been seen in abundance since that time. In fact, scientific evidence demands that we recognize that the universe's perfection is located in its continuing, *anti-entropic* self-development. That Sophist fallacy adopted by the followers of Aristotle, is to be credited to a related hatred against the Prometheus of that Aeschylus' **Prometheus Bound** who recognized the continuing willful power of the Creator in the development of the universe through aid of man's assistance, as such assistance is implicitly attributed by *Genesis* to man and woman. Thus, a very dear, late rabbi insisted on warning Jews that the Messiah will come when God decides, not according to someone's pre-set timetable.

⁷ Cf. Lyndon H. LaRouche, Jr., "Vernadsky & Dirichlet's Principle," **EIR**, June 3, 2005.

individual member of the human species. The human body dies, but, as Christian theology, for example, insists, the principle of immortality expressed by the individual human personality does not die. This distinction of the human personality is not merely an abstraction produced by theology; it is the universal physical principle (i.e., of the Noösphere) by which all decent human behavior should be self-regulated.⁸

That distinction of the human individual, is the great principle of science and history

The point, respecting individual human mortality, which I have just summarized here, is also expressed, and that most lawfully, as it could not be otherwise, as the essential principle of a science of physical economy. It is the principle whose comprehension defines history itself as a physical (e.g., economic) science.

The Immortal Self

Ask this question:

What is that significant effect of which only the human individual, among all living creatures, is capable? What is that *physical* effect?

To find the proper answer to such questions respecting man and his Creator, it were appropriate to discount any kind of effect which could be produced by a living specimen of those relatively lower forms of life known as animal species. Or, to pose the question in the form of a statement of principle: what is the type of net effect of human behavior which occurs only as the effect which is generated among the members of a human society, which can not be produced by a herd, or the like, of an animal species?

The clearest expression of the answer to such questions, is found in the increase of the *potential relative population-density* of a human society, an expression which has no equivalent form of expression, as a mass-effect, among animal species. The typical answer to that question, is, in its clearest expression, the effect of those discoveries of true universal physical principles, through which mankind increases its potential relative population-density *willfully*. Thus, it is most advantageous to locate the expression of human creativity, so defined, in those species-forms of individual activity which are most clearly responsible for such mass-effects.

In other words, when the individual mortal being of the person is deceased, the effect of those qualities of action, by that person, which are the origin of that sort of mass-effect,

⁸ E.g., all “Malthusian” dogma, such as the frauds of Britain’s Prince Philip and his son’s lackey, former U.S. Vice-President Al Gore, is not merely anti-scientific, but is also essentially pro-Satanic, as is the depraved dogma of the existentialists, such as Theodor Adorno and Hannah Arendt of ***Authoritarian Personality*** notoriety, generally.

continue to live on efficiently.⁹ These types of effects are implicitly equivalent, in their effect, to genetic improvements in humanity as a species. In that sense, they are creative actions, in the strictest sense of creative: they are creative (anti-entropic) actions by the relevant individual, actions which continue to act, as if a living principle, in the benefit which such discoveries continue to provide for the benefitted society.

At the same time, such actions by the individual who contributes such discoveries, express the quality of motive which most distinctly differentiates the human individual from the beasts. The proper expression of the desire to be human, rather than beastly, is the desire to be associated with the discovery and propagation of those actions which are expressed as *efficiently creative* in their *perpetuateable* benefits for that society which outlives the relevant mortal incarnation of that individual.

Without such creative expressions, mankind, even entire societies, were little better than cattle.

It is precisely that factor of creative motivation which drives the accomplished, actually creative Classical artist or scientist, or brave soldier, to pursuit of a sense of personal immortality. It is that motivation which actively expresses the difference between man and beast in the most essential way.

I react with a twinge of pain when I think of my poor, now deceased father's angered injunction to the effect: "Do as your teachers tell you; when you are grown up, then it will be time for you to question what you have been taught." On that point, he and I never came to any degree of agreement on anything of that sort but my decision to silently reject his instruction, rather than argue the matter out. I saw this same frequent error of his among most of my peers of childhood, adolescence, and later academic years. I saw the induced habits associated with such direction in the arrogance of other adults whom I pitied as silently as I could manage to do.

Indeed, it is more or less customary in our society today, to regard the individual who seems to violate that kind of "learn your manners" injunction as an inherent threat to the pacificity of the human herd. If we lack creativity among the young matriculants of our schools and universities, that lack of creativity is a result which we, as parents or peers, have brought upon ourselves, as a kind of vengeance we suffer as a consequence of the mischief we, ourselves, have done, thus, to our young, as, in my own youthful experience, it was attempted similarly against me.

⁹ This involves a notion of physical space-time *per se*, a notion to which I shall turn our attention here, later, below. This is, as I shall emphasize at a later point here, the principle of history.

Thus, when society, like the Olympian Zeus of Aeschylus' *Prometheus Bound*, prohibits the discovery and use of "fire" (e.g., the knowledge of the use of nuclear fission) by those doomed to the rank of lower classes of intellect, society is crushing the quality of humanity (true creativity) within the victims of such policies.

When we compare the population potentials of a species of higher ape with those of mankind, it is precisely this difference, that power of true human creativity lacking in all the beasts, and also in those men and women who behave like beasts, which makes the difference in effect.

So far, in human history, the ration of truly creative individual personalities is limited, either by a low level of allottable resources for achieving better than a marginal existence, or by a wanton waste of the relative "free energy" by those who could have spent their own, or others' "free energy" more wisely. Nonetheless, that potential is inherent in that which distinguishes the actually sovereign human personality from all lower forms of life. It is the essential function of those who deserve to be considered leaders, to uplift the self-estimation of the members of our society, accordingly.

The Soul in Physical Space-Time

It is time to deliver a warning to the reader. What I have to say in the context of the following, necessary references to some relevant aspects of the work of Johannes Kepler, is necessary for the purpose of treating the subject competently; but, as to the particular point on the human soul, presented here, it is nonetheless also to be admitted that what I have to say here on that account may be classed as "tough stuff" when presented to an ordinary reader. However, since the point to be made is preciously essential to an understanding of the plight of human nature in these perilous times, it would be immoral not to present it with as much refinement as I am obliged to muster at this point.

I state my case as simply as might be permitted, but I must forewarn the reader that each word, each phrase uttered on the concept of the human mind's experience of itself, has been carefully chosen out of decades of experience with the conceptions which I present with a relevant blend of precision and relative simplicity here. I can only warn the reader to appreciate the simplicity, without mistaking it for a lack of precision, or precision for *naive* simplicity.

It has often been correctly said, in modern times, that the notion that matter, space, and time are distinct categories of existence, is an absurd belief. There is no existence in the universe which can be separated *ontologically* from the unity expressed as the notion of *action-in-time*. In modern science, the irony of this fact was first encountered in a notable way in the work of the principal founder of modern European science, Cardinal Nicholas of

Cusa. Cusa, in reviewing the argument by Archimedes for the quadrature of the circle or parabola, noted that Archimedes was in error: no actual circle could be generated by quadrature. Also, as Kepler was to show, no planetary orbit could be competently located in mere space-time.

This fact, respecting the notion of action-in-time, has a well-defined, crucial role in modern physical science since Cusa, especially since the relevant argument, drawn out by Pierre de Fermat, was taken up by Gottfried Leibniz and Jean Bernoulli in defining a truly, *ontologically* infinitesimal calculus premised upon a universal physical principle of least action. The same notion has a corollary importance in defining the notion, here, of the distinction of the human personality from the existence of the beasts. It has a crucial importance in defining the distinction of the human soul from the existence of the identity of the individual beast.¹⁰

This crucial conception, the advancing of the conception of the fallacy of quadrature, by Cusa, became the cornerstone of his follower Johannes Kepler's discovery of the universal physical principle of gravitation. It would be Fermat who was to define the notion within the experimental framework of matters of refraction and reflection of light. Kepler's own relevant discovery is presented by him, before Fermat, chiefly in two phases, one in *The New Astronomy*, where the concept of the *ontologically infinitesimal* is presented, contrary to Archimedes' misguided notion of quadrature in curvature; and, as the general expression for gravitation within the Solar system, in his *Harmonices Mundi*, where the paradoxical roles of two kinds of "instrumentation," sight and hearing (harmony), are combined in their apparently essential contradiction, to force Kepler's mind to a higher agency for truth than mere perception defines, thus, and that uniquely, as in the notion of a general, "musical" principle of gravitation.

Once we have outlined the case to be considered in those terms of reference, we come to the same crucial point to which I shall refer as the matter of the human immortal soul: the subject of the *ontologically actual infinitesimal*.

Now, at that point, we must shift gears here, if but for a few moments.

2. Galileo's Fraud

The conventional academic view of Kepler's work is, still today, an intrinsically fraudulent one, a fraud perpetrated in one case by the contemptible Robert Fludd, but, most of the hoaxes spread against the work of Kepler, especially among putatively respectable academic

¹⁰ Apparently, on this account, human souls do not claim to exist among the ideologues of California's Silicon Valley. Perhaps, they once had souls, but had sold them in hope of a continuing flood of large amounts of money.

figures of today, are to be traced to apologies for *Galileo's politically motivated frauds*, such as those of Descartes and Abbé Antonio Conti.¹¹

I explain.

In its beginning, the founding of modern physical science was chiefly the work of Cardinal Nicholas of Cusa,¹² who first presented the relevant case at some length in his *De Docta Ignorantia*. Johannes Kepler's work was chiefly a reflection of the principles of physical science presented by Cusa, as also by notable followers of Cusa such as Luca Pacioli and Leonardo da Vinci. The same method employed by Kepler has also been that of all of the greatest scientific thinkers, as from Fermat and Leibniz through Riemann, Max Planck, and Albert Einstein, to the present day.

However, Cusa and his legacy in science had their opponents even among elements, then and later, within the Catholic Church itself. The first set of such backward reactionaries was echoed by the Habsburg-linked Inquisition of the Hitler-like butcher Tomas de Torquemada. However, because the first phase of that inquisition failed its purpose of eradicating the modern nation-state conception which had been launched by works such as Cusa's *Concordancia Catholica* and *De Docta Ignorantia*, the crudely neo-Aristotelean Inquisition of Torquemada *et al.* failed in its larger political purpose; it failed precisely because of the failures ensured by its hostility to those scientific and related freedoms on which the economic and related progress of the modern nation-state had depended since the signal, relevant, practical accomplishments in policy-making by Louis XI for France and Louis' follower Henry VII for England.

There was nothing less evil about the modern challenger of the original, Torquemada-led, Habsburg Inquisition, Paolo Sarpi, than his more conservative Venetian predecessors and rivals; Sarpi was, if anything, closer to the motives of the Devil than the monstrous Torquemada had been; Sarpi was cleverer. The charlatan Galileo became Sarpi's chief lackey, or, should we not suggest, "sorcerer's apprentice," whose own apprentices, in turn, included

¹¹ Admittedly, that fact is often emphatically denied, even among many otherwise competent scientists, who, in fact, have either followed the conventional pathway of never having actually traced Kepler's argument and its evidence in the course of their dumbly repeating what had become a standard bit of academic litany on this subject, or like Harvard's Professor Owen Gingerich, have read Kepler, but, despite Albert Einstein, nonetheless prefer to defend the frauds of Galileo *et al.* even arbitrarily. Cf. Owen Gingerich, Foreword, in Johannes Kepler: *New Astronomy*, William Donahue, trans. (Cambridge: Harvard University Press: 1992).

¹² Although a very important contribution was made, on account of several achievements by the same Filippo Brunelleschi who employed the principle of the catenary ("Funicula") for the construction of the cupola of Florence's Santa Maria del Fiore. As I rediscovered independently from my studies of the latter structure during the 1980s, Brunelleschi's work is the first known use of the catenary as an expression of an understood scientific principle until the work of Gottfried Leibniz and Jean Bernoulli in the discovery of the universal physical principle of the calculus, the principle of physical least action. Galileo pretended to have understood the catenary, but never actually did.

Sir Francis Bacon, Thomas Hobbes, Descartes, Antonio Conti, and so on, and on, and on, through the former scientist turned, Liberally, a charlatan while in the employ of Conti's Cartesian cult, Leonhard Euler.

Sarpi himself is most notable in political history for two features of his activity. First, his shift of the center of political-financial power of his Venetian faction, from Venice itself, toward the maritime territories of the northern coasts of Europe (without ever actually abandoning the Devil's own playground, the original Venice). Second, his tolerance, too extreme for the tastes of the brutishly sort of hard-nosed Habsburg reactionaries, for mechanical and related innovations in technology. However, that tolerance, like the Devil's own, was extended on a condition echoing the figures of Aeschylus' Olympian Zeus as also the pathetic former Vice-President Al Gore, that the principles of scientific discovery of principle not be permitted to be spread among the populations generally.

To that latter end, Sarpi decreed the discarding of the Habsburgs' scientifically indefensible Aristotle in favor of a revival of the intrinsic irrationalist doctrines of a medieval obscurantist, William of Ockham. This neo-Ockhamite method adopted by Sarpi and such among Sarpi's lackeys as Galileo, is what is termed *Philosophical Liberalism, empiricism, or Cartesianism* today. Such are the chief official, competing brand-labels of the pro-Satanic state religion of Anglo-Dutch Liberalism and its neo-feudalist rivals of today.¹³

The Attacks on Kepler

The attacks on Kepler's work by those in the Sarpi-Galileo tradition, are typified by those dubious remarks made by Harvard Professor Owen Gingerich in the 1992 Foreword to William H. Donahue's Johannes Kepler's *New Astronomy*, where they are to be recognized as reflections of the impulse of today's relevant Liberals and their institutions, the impulse to defend the tradition of Galileo's and related hoaxes at all costs, even in shameless defiance of the greatest scientists such as Gottfried Leibniz, Bernhard Riemann, and Albert Einstein, on this matter of scientific method. It might be inferred from reading aberrations such as the contribution by Professor Gingerich in that location,¹⁴ that the power of Her Majesty's Union Jack was staked upon the defense of Galileo against Kepler's, Leibniz's, Riemann's, and Einstein's work; doubtless, it is.

¹³ Logical positivism and existentialism are next to the outright Satanism of such as the followers of the Lucis cult of Bertrand Russell and H.G. Wells crony Aleister Crowley (sometimes known as "creepy Crowley"), that among the typically most extreme of those varieties of that perversion. A certain clear case of plagiarism, implicitly conceived in service of precisely such an intent, was spawned from the vicinity of Harvard for exactly such an intended effect, as a clear plagiarism against the preceding original work on Kepler by a LYM team.

¹⁴ *Op. cit.*

A famous, intimately related case, is that of the combined work of Abbe Antonio Conti, Voltaire, Abraham de Moivre, d'Alembert, Maupertuis, Leonhard Euler, *et al.*, work concocted in the form of the empiricist fraud expressed by Euler's fraudulent attack on Leibniz's adoption of the same ontological conception of the same infinitesimal of Kepler's orbit.

The crux of the matter of science, here, is two features of Kepler's work which bear implicitly upon an appropriate scientific conception of the human individual soul, a conception consistent with the definition of man and woman in *Genesis* 1. The first of these two is the notion of the *infinitesimal* introduced for defining the planetary orbit of Earth in *The New Astronomy*. The second of the two is the way Kepler's laws were defined in the *Harmonices Mundi*.

There are two leading features of Kepler's work to be emphasized by us in this present location. First, his echo of Nicholas of Cusa's rejection of Archimedes' attempted quadrature of the circle: Kepler's recognition of the ontological implications of the notion of the infinitesimal, as in defining the principle (equal areas, equal times) of the Earth orbit. Second, Kepler's rejection of naive "sense-certainty," in his recognition, as in his *Harmonices Mundi*, that neither sight nor sound are the actual experience of the subject which appears to have been perceived, but are "instruments" which come in the prepackaged "box" which contains the delivered, living human individual, instruments which present us symbolic reflections, like shadows, of experience, but not its actuality.

For example, take the case of modern studies of that Crab Nebula from which Earth (and our neck of the Solar System woods) receives its most notable, periodic showers of so-called "cosmic ray" radiation. By adopting different parts of the general spectra for each of a series of concurring electronic images of that nebula, we are impelled to appreciate the vast difference among the objects variously so perceived as raw evidence of the Crab Nebula. This case should be regarded as typifying the predicaments with which we are confronted by either our given sense-perceptual processes, or the synthetic ones which reductionists such as the Machian positivists, have often employed, naively, contrary to Max Planck's actual intention, and, that all too credulously, by their naive interpretations of the sub-atomic domain. It is the human mind's creative powers, and nothing of lesser ontological rank, which must be adopted as superseding all foolish interpretations of so-called experiences of "sense-certainty."

In the second case, the generation of the general formulation for gravitation, Kepler demonstrated that the Solar system is not a collection of bodies moving within an Aristotelean-Euclidean or Cartesian sort of empty space. The Solar system is not objects roaming, like Cartesian turds in empty space, but is a system of the pervasively efficient,

thorough existence of physical space-time. This view of mine is contrary to the implication of those savage attacks on Max Planck by the positivist followers of Ernst Mach, who insisted that only a quasi-Newtonian view of “quantum mechanics” would be tolerated by them. Apparently, they relied on the assumption that no human voyager within the vast reaches of sub-atomic microspace would succeed in bringing back a photographic image which would contradict their arbitrary presumptions about the way in which matters are actually arranged “down there.” For the dupes of Ernst Mach, Bertrand Russell, *et al.*, everything is essentially a subject of virtually sexual fantasies about bare sense-perception, not reason.

The studies of Kepler’s relevant work have been conducted and documented by two scientific teams of the LaRouche Youth Movement, and are available in detail in the LYM website, in a better form of critical treatment than any other known, published location.¹⁵ On that account, therefore, nothing more than that need be said by me here. I restrict my further attention on this general topic to the implications of two crucial points from Kepler’s own work.

First, is the significance of Kepler’s treatment of the significance of “equal areas, equal times.” This evidence, as developed earlier by Kepler, exposes the physical incompetence of the notion of “imaginary” employed by the scoundrels de Moivre, d’Alembert, Euler, *et al.* The problem, which those culprits avoid treating, in their hand-waving fashion in rhetoric, is that the evidence of the physical rate of rate of change in orbital pathway, points to a moving hand which lies outside an assumed, meager notion of merely abstract space (rather than efficiently physical space-time), the notion on which the opponents of Kepler, Fermat, and Leibniz, such as Euler, have implicitly relied.

That particular fallacy of composition by the principal avowed critics of Leibniz, including the disgustingly pathetic and vulgar sophistry employed by Euler, Lagrange, Laplace, and Cauchy, is exposed in the fact that Kepler demonstrates the efficient existence of a moving hand *from outside the reach of the quasi-Euclidean spatial domain* which the fools chose to superimpose, fraudulently, upon Kepler’s representation. This goes directly to the point of Albert Einstein’s upholding of the principled entirety of Kepler’s work, that the events which are to be observed in the universe, reflect universal physical principles which, superior to the mere phenomena of that universe, self-bound the universe without aid of any ontologically actual kind of external limit, and without any notion of “empty” Euclidean or Cartesian space. This self-boundedness of the universe, correctly attributed to Kepler by Einstein, is the definition of a finite, but expanding universe. Contrary to de Moivre, d’Alembert, Euler,

¹⁵ Following the publication of the LYM studies, a hastily composed, blatant plagiarism of the LYM work was published by anonymous sources traced to some place near to the vicinity of Harvard University. This included such crudities by the plagiarist as some notable hand-drawn sketches of figures which had been generated mathematically by the LYM taskforce, but which the author of the plagiarism was apparently unable actually to generate.

Cauchy, Clausius, and Grassmann, the actual effect of a similarly, infinitely extended principle upon any local action within that universe, is *efficiently, ontologically infinitesimal, but certainly never imaginary*.

The point was made clear by Kepler himself, as by the work of Fermat on least-action pathways, as this latter point was recognized by Leibniz in his own, and Jean Bernoulli's work on crafting the notion of universal physical least action. It is a notion which may be summarized as contrary to the clumsy, outright frauds of such followers of the empiricist hoaxsters Sarpi, Galileo, Descartes, and Antonio Conti, such as Voltaire, de Moivre, d'Alembert, and Euler, and their followers to the present day.

The argument which I have just summarized in this fashion, here, is an expression of the Platonic notion of *hypothesis*, rather than any contrary use of that term. In this approach, the experimental test of scientific knowledge lies in efficient action, rather than interpretation of bare perceptions (e.g., as by sense-certainties of crude materialism, or Euclidean inferences), in the demonstration of the efficiency of the relevant, adduced principle of *higher hypothesis*: the will to act on the unsensed universality, to such effect as that of apparently changing the previously assumed laws of a universe, wrongly assumed laws which might have been mis-defined in conformity with the ignorant man's naive sense-certainty.

To restate the point: rather than treating so-called physical principles as essentially descriptions of mathematical schemes, we demand that the ontological actuality of the principle of action be located within the ontological reality of the principle itself, rather than letting the principle be degraded to the status of being assumed to be merely that kind of accountants' summation of a column of figured data, treated as a mere aggregation of data which is typified by what is called empiricism, or called by the name of mechanistic deductive-inductive methods.

Man, unlike the beasts, should not merely prowl the domain he occupies, but must willfully change the quality of man's form of existence, if man is to survive as mankind. No different view than that *Promethean* prescription of mine here, serves as a decent definition of scientific knowledge and practice. After all, that is why the evil ones, such as Paolo Sarpi and Galileo, have, like the evil cult of Delphi, hated the image of Prometheus so devoutly (as also Bach and Beethoven).

3. The Self-Evolution of Man

The crucial point on which all competent future statecraft will depend, is the certainty that the essential force in history, is not the *simply physical* effects of human willful action as such, on the world outside our skins, but, rather, the changes in development of ideas which

successive generations of mankind, and various branches of human cultures, transmit, for better or worse, that in the form of *a method of generating ideas whose inner power, such as that expressed by discovery of universal physical principles, is that by which present and future mankind will act successfully, or will not.*

It is the power *within valid ideas based upon that intention*, which is the motive power upon which the upward quality of life of mankind depends absolutely.

That is to be recognized as *the ontological paradox*, the dividing-line, which separates really intelligent men and women, today, from that lower variety of persons called the empiricists in some particular cases, or, in general, simply, reductionists or deconstructionists.¹⁶

Mankind can blame no one but itself for its failures in decision-making (or, lack of decision-making) on this account, such as the pattern of continuing and worsening, prevalent net failures, overall, of the U.S.A. and Europe's *physical* economies since the close of the 1960s. In what we see, rightly or wrongly, in ourselves, we do, in fact, choose our destiny, and that of the generations of descendants who must learn, as we must, too, that they live on the bounties of our virtues, or, otherwise, they will lose, as so many of what had thought itself the triumphant "68ers" in power then; they must, therefore, come to recognize the terrifying outcome of their follies, follies which, for example, now confront most of them, increasingly, today.

In accounting for these failures, we must recognize the distinction of actual economy is that of *a physical economy per capita and per square kilometer of national territories*, as distinct from the often contrary, but also, at its best, a chiefly illusory character of monetary accounting. Monetary accounting, especially since the unloosing of the monetarist version of Gadarene swine, by President Nixon, in 1969–1972, has not improved its importance in any way since the medieval European collapse of the kind of "ppp's" swindle which New York's Mayor Bloomberg and his allies of the Rockefeller Foundation have proposed be revived, a swindle which echoes, today, the plunge of Europe, under a similar medieval policy, into the infamous Fourteenth-Century New Dark Age.

That Fourteenth-Century plunge was one, like that proposed by cronies such as the foolish Mayor Bloomberg, foolish Felix Rohatyn, and the Rockefeller Foundation today, based on private financing by the Lombard bankers representing independent city-states. Now, as then, that is a type of foolish scheme which, today, is already plunging the trans-Atlantic world, and more, into the greatest hyper-inflationary breakdown-crisis since that Fourteenth-

¹⁶ The definition of a "de-constructionist" can be best illustrated as follows. A boy, the deconstructionist in this case, takes apart his grandfather's gold pocket-watch. The grandfather asks, "Where did I leave my watch?" The boy sheepishly tenders a collection of the smallest constituent parts of the watch, saying, "Here's your watch, grandpa." The deconstructionist would argue the case at law as follows: "There never was a watch, just a collection of parts."

Century New Dark Age. What threatens the world, from the hands of Venetian residues such as Bloomberg, George Soros, and Rohatyn, threatening especially the U.S.A. and western and central Europe, is a far worse collapse in process than the John Law bubbles of Europe's early Eighteenth Century.

This past and presently onrushing experience with monetarist catastrophes, reflects the principle which is indispensable for any competent understanding of history, and, therefore, also not only of statecraft, but also of a prudent conduct of one's own individual life.

The Role of Ideas

From here on, in this present report, my use of the terms "idea," and "ideas," is limited to notions of that quality which we could rightly associate with the notion of the functional equivalent of the discovery of a crucial-experimentally validated universal physical principle. This is a principle of the organization of the universe considered, not as parts, but as a function of the dynamic whole, as Kepler's uniquely original discovery of the principle of gravitation illustrates this type of action.

Ideas so defined, are not limited to discovery of what are fairly regarded as universal physical principles today. We must recognize the implicit function of principles of the same dignity in *the competent performance of Classical musical compositions* by such as J.S. Bach, Wolfgang Mozart, and Ludwig Beethoven. The general notion is also met in truly *Classical* modalities such as John Keats' conceptually powerful *Ode on a Grecian Urn*,¹⁷ and Percy B. Shelley's deeply insightful *A Defence of Poetry*.¹⁸

This wonderful, peculiar spirit and its products are also met in Gottfried Leibniz's reference to "the pursuit of happiness." This phrase and the concept it represents, was taken by Benjamin Franklin, *et al.*, for our U.S. Declaration of Independence, as copied from Gottfried Leibniz's *New Essays on Human Understanding*. This is the same principle, as presented by Leibniz, and then expressed in that *Declaration*, as echoed the fundamental principle of U.S. Federal Constitutional Law, as identified by the specifically anti-Locke *Preamble* of our *Federal Constitution*.¹⁹

¹⁷ The efficient communication of the socially motivating notion of a proof of human spiritual immortality.

¹⁸ E.g., The power "of imparting and receiving profound and impassioned conceptions respecting man and nature." This is the principle of the Renaissance, such as the upsurge which produced not only the greatest poetry, music, and drama of that time, but the victory of the pre-1789 Classical renaissance and such included results as the victory of the American Revolution.

¹⁹ John Locke was most notable for his prominent role in trafficking in African slaves. That, and nothing different; traffic in slavery, was his principal profession, and the leading expression of the empiricist philosophy of himself and his American followers. On this account, Locke as a typical worst-case example, Gottfried Leibniz took him on in literary debate. It was Leibniz's reply to Locke's response to Leibniz's own *Essays on*

To summarize the introduction of that notion to the subject of this chapter, although the word “idea” is generally employed in many differing ways, some relevant to the point of my discussion here, and more often, not, what I mean by *idea* in this chapter’s argument, is the kinds of ideas which stand out in history and law, as distinct solely for reason of their likeness to such ideas as the idea of active universal gravitation *in itself*, as this was expressed by Johannes Kepler’s concept of gravitation, as distinct from the merely description-of-effect connotation of the word “gravitation,” as employed among the so-called Newtonians and their like.

On that account, I place special emphasis here on those qualities of ideas which have the kind of physical-scientific authority clearly intended by the current of modern physical science from Nicholas of Cusa through Albert Einstein: ideas which are also expressed, as I have already emphasized the relevant distinction here, within a context of what are actually certain Classically artistic conceptions.

I emphasize that distinction as I associate it with the outlook on a science of history presented by Friedrich Schiller, for example, as in Schiller’s Classical drama, his poetry, his studies of history, and the functionally practical role of the aesthetical principle in general.

To summarize the import of these immediately preceding remarks on the subject of ideas as such: in other words, *when we point to the idea of a form of action which serves as an instruction to cause an efficient quality of beneficial physical effect, by others, especially society generally, in respect to the quality of consequence for the resulting human condition. That idea has, in itself, a physical consequence for society which is comparable to the advantage expressed by the discovery of a true fundamental discovery of a physical principle, or the ill-gotten outcome of the adoption of a false one.*

Simply re-stated: the class of idea I emphasize here, is not a characterization of something which has happened, or might, or might not happen. It is, not a mere commentary on possible, or even actual activity. *It is, like any discovery of an experimentally validatable expression of an efficient principle of action in physical space-time, in and of itself.* It is an idea which acts upon the social process, as a universal physical principle acts upon an object, to

Human Understanding, to which Leibniz replied, in turn, with a fresh ***New Essays on Human Understanding***. However, when Leibniz learned of Locke’s death, during the intervening time, Leibniz withheld publication of his rebuttal, the latter piece. It was the circles of the great mathematician Abraham Kästner, Benjamin Franklin’s host at Göttingen University, which had forwarded Leibniz’s *New Essays* to Franklin. It was from this latter writing, that the crucial statement of a principle of constitutional law, “the pursuit of happiness,” entered into the 1776 Declaration of Independence. The British East India Company took its ships out of the slave-trade during the latter part of the 1790s, transferred its ships to the more profitable opium trade, and dumped the Company’s former financial interest in the physical traffic in African slaves, on Britain’s stooge, the Nineteenth-Century Spanish monarchy. Hence the lying hypocrisy of those perverts, then and presently, who have attempted to read John Locke into the U.S. Federal Constitution.

the effect of changing the quality of that social process, as in the same sense as the idea of a discovery of what can be validated experimentally as a universal physical principle.

All of my personal successes as an economic forecaster, in all long-range forecasts which I have made since the close of the 1950s, and each shorter-range forecast I have chosen to add, have been products of the method which I adopted to that purpose. All known other forecasts contrary to those of my own, over that entire period to date, have failed, especially those failed forecasts premised on monetarist statistical methods in general use by relevant academics and others over those same decades. The most notable examples of foolishness on this account is the case of those who insisted, wishfully, that Federal Reserve Chairman Alan Greenspan's sowing of future hyperinflation in his inflationary binge of the 1990s, was the road to an endless pathway to paradise for all true believers in that particular sort of hyper-monetarist buncombe. For many hearers, that is a most unwelcome fact to hear stated; but, it remains a fact, nonetheless.²⁰

A valid physical principle is but one quality of example of such efficient principles as such. The same kind of responsibility for consequences, whether by intent or by ignorance, must be assigned for the outcome of what might be considered as those professional matters of liberal arts which conform to the definitions which I have just summarized immediately above. These are ideas which, applied to the action of society, change the action exerted by that society, a change expressed in a manner corresponding to the effect of introducing a newly discovered universal physical principle to the physical-economic process.

Hence, we should recognize the sheer wrongness, the willful slipperiness, the sheer sophistry, of permitting the departments of so-called Liberal Arts to avoid being subjected to the quality of accountability for experimentally situated evidence of truth assigned to physical principles as such. The physical state of affairs brought into being through an argument on laws enacted, or other professional opinion, or governmental action, should be subject to the same treatments for consequence of a fraudulent, or even only erroneous intent, as any swindle which was perpetrated in the abused name of physical-scientific practice. In nature,

²⁰ At the beginning of September 1971, I uttered a report in which I described the failed academic economists of that time as "quackademics," that for reason of their explicit, or implied failure to recognize the imminence of the type of breakdown of the Bretton Woods System which I had been warning against, since the beginning of the 1960s, as likely to occur, about the end of the 1960s, or beginning of the 1970s. Admittedly, the decision, by the Chicago School's George Shultz, *et al.* to sink the U.S. Dollar, as Shultz's dupe Nixon did, was a voluntary action, not a *physically* inevitable one otherwise; however, my forecast had been based, since the beginning of the 1960s, on the assumption that if present trends, then, were continued into the mid-1960s, the institutions which had set those trends, based on their doctrines, would reach the point of readiness to sink the Bretton Woods dollar by about the beginning of the 1970s. Granted, the decision by Shultz *et al.*, was psychological, not physical in the sense of the frequently mistaken, academic notion of "physical." However, for Shultz *et al.*, then, as now, their essential commitment was never to physical realities of eating and dying, but to their perceived notion of the esteemed "self-interest" of the system whose perceived interests they were committed to serve. For them, what serves the god they worship, which is the British style in a radically Liberal monetarist system, is what they perceive as physically real; that was my point, then, and remains so, now.

George Shultz's action was fraudulent; according to Shultz's implied oath to serve the special interests of his system, the action was treated philosophy as *a physically mandatory reaction to a physical condition*, even though the action would be inevitably physically ruinous for the real economy.

Or, to put the point exactly, as it was said, decades ago, by the ghosts in the delightful German movie, *Das Spukschloß im Spessart*: "The important thing is the effect!" *the special quality of effect which inheres in the action for itself*. I restate the point for emphasis: *Those ideas which have the quality of systemic effects on society which I have identified above, must be assessed for this effect by the same intellectual standard as that we prescribe for assertions of, or disregard for what are representable as implicitly claimed scientific principles*.

For our purposes here, it were prudent that I speak exactly as I have done here. I speak from the vantage-point of the authority which I have earned as a long-range forecaster, in my profession, the science of physical economy. Thereafter, we may therefore examine matters, here and now, from the broader cultural implications of my indicated achievements, proven by experience, as a forecaster in that field.

The quality of distinction of a decision to act, which I emphasize for the case of physical economies, pertains, most clearly, to the consequences of what we would recognize as being of the nature of investments, either made, or investments which should have been made, but were not.

In real physical-economic processes, such as national economies treated as approximately wholes, the effect of the individual investment is located in the *dynamics* of the economic process taken as a whole, not a simply kinematic sort of chain-reaction, but as the Pythagoreans, Plato, and Leibniz defined *dynamics*. The essential principle of economy on this account, is Riemannian, not the customarily failed, customary practice of neo-Cartesian statistical forecasting such as that of LTCM. In the matter of this distinction, the mathematics is significant, but it is the concept of the nature of the process, as *dynamic*, which is essential.

As in a good marriage, it is the relationship between the partners, a relationship implicitly expressible as an idea of the quality I intend in this present part of our discussion, the quality which defines the probable result, not the particular action. A good marriage can outlive a mistaken act, but no act can actually rescue a systemically spoiled relationship; so it is in social processes generally, as in the domain of dynamic economic forecasting premised upon Riemannian conceptions of the relevant process represented by the action of ideas, that as I have defined ideas for this purpose, here.

Summarily, therefore, it were implicitly as stupid, even perhaps criminal, to regard a national economy in a piecemeal fashion, respecting its parts, as to define a living human body, as a deconstructionist might, as a collection of separate parts of assorted genesis left over from a motorcyclist's catastrophe. It is not only a matter of the way in which it might be presumed that the parts *ought* to fit together. The proper standard is what I have defined as *a required increase of the potential relative population-density* of the system as a whole.

I explain that first, and proceed from there to the other relevant points. For obvious reasons, I proceed in the remainder of this chapter by steps of successive approximations.

Dynamics & the Noösphere

In the preceding chapter, I had emphasized Albert Einstein's view of the genius of Johannes Kepler. I emphasized, as Einstein had, the evidence that the universe is self-bounded by unseen, but efficient universal physical principles, such as Kepler's definition of universal gravitation. This signifies that our universe as a whole is finite but self-bounded: not externally bounded in any sense excepting the considered effect of the inclusion of the notion of an anti-Aristotelean, universal physical principle of *anti-entropy* within the concept of the finite, expanding universe.²¹

This attribute of the Creator, is what is extended to define the essential nature of man and woman, as specified within the first chapter of *Genesis*. It is those creative powers, powers of a nature specifically common to the Creator and the actually thinking human individual, which define what must be taken to be the essential meaning of ideas in ordering of development within social processes taken as relatively whole processes, as with large national economies such as the United States, or China, for example.

Each idea of the relevant type so implied, contains an implicit reference to a set of already established universal physical principles, including certain strictly defined social principles; principles, which, taken into account for that application, are, when considered case by case, either correct or erroneous. It is these kinds of clusters of ideas which propagate, and thus radiate chain-reaction-like, actually dynamic effects, within the economic-social process viewed within Riemannian terms of reference. Each such "packet of ideas of principle," radiates dynamically throughout the economic process as a whole, to produce effects which shift the characteristics of that process (e.g., economy) as a whole.

The distinction to be emphasized here, is the following.

²¹ This notion of anti-entropy corresponds to the implication of Philo of Alexandria's denunciation of the pro-Satanic, Aristotelean folly of interpreting "perfection" of creation to mean the end of the power of the Creator to create.

First of all, it is the usual case, that the same packet of ideas which, as a whole, has set off such a chain-reaction-like process within the economy, has been adopted as an idea which will continue to exert influence on those who have participated in adopting it. Therefore, it is not a ripple which spends itself out, as if entropically, through radiation; but, it is, rather, an idea which is, so to speak, re-enforced by its own radiation. The creative powers of the human individual in society, the powers which distinguish the typical human individual's species from that of the higher apes, are essentially anti-entropic, not entropic; they are not merely "learned," but, when validated, increase the potential (e.g., the "influence") which *those ideas* represent within the thinking processes of those persons who participated in the radiation of the effects.

On this account, we must distinguish between the mind of the person who has learned a recipe, as in "cooking for dummies," or for hitting the nail with the proper end of the hammer, and the qualitatively higher quality of the state of mind (as cognitive potential) of the person who has had the experience of generating the germinal notion of principle expressed as a valid, original recipe. Call this distinction *The Prometheus Principle*.

Ideas & History

The action of the special quality of ideas on which my attention is focused here, has *the apparent effect*, relative to behavior within the Biosphere's set of species, of a virtually "genetic" change of species. Biologically, in all principal features of the living person as a member of a species, the qualitative, "evolutionary" cultural shift in species-quality, lies entirely within the development of the mental processes and the relationship of those processes to the physical aptitudes and propensities of the individual person.

However, limiting the discussion, for the moment, to cultural-evolutionary upshifts in instances of increase of potential relative population-density, the effectiveness of the attempted up-shift is not limited to the relevant changes in the mental function itself. In general, the success of such changes requires changes in the environmental setting, the social setting and also functionally relevant qualities of changes in the physical setting otherwise.

Spoken in broad terms, suited for purposes of general illustration, we have the following examples.

The most typical environmental change associated with upshifts of this kind, is typified by the thermodynamically anti-entropic progress traced from burning of wood, to burning of charcoal, to uses of waterpower, to burning of coal, to burning of coke, to burning of petroleum and natural gas or its like, to nuclear-fission, to thermonuclear fusion, and beyond. These changes in relevant sources of power are associated with required

improvements in modes of production and product-design, and a general rise in physical capital-intensity per capita and per square kilometer of the population.

The types of changes just mentioned are not merely optional; they are essential for, and integrated with the increase of productivity of the society per capita and per square kilometer.

These changes, when so ordered, are reflected by their inclusion of increase of the relative rate of increase of the accumulated Noösphere, relative to the “pre-biotic” domain, and to the Biosphere generally. Mankind, as a merely biological existence, does not change (very much) his per-capita impact by his existence, except through the aging process under conditions of increasing longevity; the correlated change induced by progress is located in the mental development of individuals; the quality of their social relations; and in the per-capita accumulation of required and by-product accumulations of necessary, cumulative changes in man’s mode of existence and means of production. Thus, the increase of the human population, which is itself an expression of the Biosphere and Noösphere respectively, increases at an increasing more rapid rate than the increase of man’s role as part of the Biosphere.²²

However, these advances have a strong, increasing rate of impact on the planetary system we inhabit. The resources available from within the planet are relatively finite in total, such that the very increase of the human population, especially under required conditions of scientific-technological progress, is to increase the ratio of “costs” of the Biosphere and Noösphere, alike, relative to the relatively fixed base-line of usable resources represented by the pre-Biotic stratum. This requires an increase of the Biosphere, and an acceleration of the rate of physical productivity of the population, per capita and per square kilometer, through aid of accelerated rates of increase of “energy-flux-density” per capita and per square kilometer, and qualitative changes in technologies employed.

In other words, contrary to the Malthusians, the increase of the rate of capital-intensity and energy-flux-densities of modes of power employed, is mandatory, if an ultimate breakdown-crisis of the world-system were to be avoided.

²² As I have written and said on several earlier occasions, we must be wary of the presumption that those cognitive powers which are specific to the only presently known case, that of the human mind, as cognitive powers distinct from all lower forms of life, are purely and simply—*explicitly!*—an outcome of biological evolution *per se*. The physical demonstration that this “property” is specific to the Noösphere, indicates that the distinction of man from beast on this account is a result of some appropriate “tuning” of the biotic aspect of the apparatus of human mentation to a principle of the universe; it must be a principle which the brain of the ape, or, perhaps, the currently incumbent President of the U.S.A., for example, can not “tune in,” perhaps, in the latter case, as a consequence of too many youthful flights to the land of cocaine.

The exemplary factors just treated, and relevant others, are not merely required, they express, implicitly and otherwise, the necessary trajectory of self-development of all mankind and its society.

4. The Crucial Idea

Now, turn to focus attention on the core of the conception on which this report, thus far, has been premised. Call this, therefore, “the crucial idea.”

The crucial ideas of the historical process are those typified by qualitative changes in policies of practice by nations or cultures, those changes which represent *changes in effect* in those physical-economic *principles* which govern the way in which policies of practice are defined in respect to their qualitative physical effect on the existence of the relevant nation or culture. That formulation reflects, chiefly, *anti-entropic* changes in direction of development.²³

Therefore, attention is to be focused now upon the included elements of policy which are essential to the determination of crucial physical effects on the direction, and quality of change of direction of the physical-economic and related cultural process.

The measurement to be made is, therefore, that of a functionally defined increase in *the potential relative population-density of the human population*. This means the relative increase of *the rate of increase* of the Noösphere, relative to the Biosphere.

The recommended rule-of-thumb for recognizing such qualities of change, is to compare the systemic effect which is apparently associated with the correlation of a change of culture, with the kinds of effects we associate, in study of the ecologies of animal life, with *qualitative* changes of species, or with relatively more significant “ecological” *changes in variety* which may occur (as if to say, “pushing the envelope”) within the bounds of the same species. In other words, our attention should be focused, for rough approximation, on margins of comparable significance induced by cultural up-shifts, or down-shifts, in rate of increase of potential relative population-density within the same society.

We must measure the present by its future: not what it has done as a finished product of the change, but where the change is carrying the society into the future. In other words, what are the boundary conditions of development implicit in the ongoing change, or the change being considered by relevant agencies?

For the convenience of our discussion here, let us, temporarily, call changes which meet that requirement, “crucial changes,” whether we know that they are actually principled changes in the quality of existence, or not. From the standpoint of modern economy, these are changes

²³ I.e., qualitative (anti-entropic) shifts upward.

which are more readily understood after critical examination of the fact of the change itself, are changes which can be, *often, but not always*, later understood, as changes in *physical principles of practice*, those which are relatively most susceptible of being read from a standpoint comparable to that of mathematical physics. Such a relatively simpler quality of change in employed physical principle in manifest policies of practice, is, therefore, the most readily accessible case, but, as I shall emphasize below, by no means, the only case.

Language & Art

In the case of language-cultures, or artistic aspects of culture generally, the most significant of the relevant subject-matters of cultural development as such, is presented to us with the relatively greatest accessibility, as the matter of the role of Classical expressions of irony in poetic and related composition in the literate use of a language-culture. While physical-scientific considerations, even in the conventional sense are the limiting conditions in development of potential relative population-density of cultures, those avenues of progress are also limited by the presence or lack of relevant cultural development, such as quality of political institutions, and of use of language and in respect to Classical art-forms, *and also religion*.²⁴ Here, at the prompting of this thought, the case to be discussed becomes more interesting.

On this account, over more than sixty years, I have not only insisted on what Leibniz would have regarded as Platonic culture, but I have also often recommended, to English speakers, William Empson's *Seven Types of Ambiguity* as a benchmark of reference for opening up insight into the role of Classical irony in Classical poetic and related composition. In the directly opposite direction of experience, we meet the crippling of the power of communication of ideas in general, as the breadth of access to the ironies which should be in the accessible range of use of a language, is shrunken by shrinking of working vocabulary, or simplification of methods of punctuation, or loss of contact with the practice of a truly Classical form of culture, as was done in the past by the *New York Times* style-book or a cultural down-shift, even among the leading intellectuals of society, like that of the post-1945–46 interval shift into radical forms of positivism and existentialism, away from Classical modalities.

The qualitative cultural downshift to which I refer in mentioning the post-World War II developments, is best illustrated by the moral and intellectual decadence expressed by the outburst of the radical white-collar, "Baby Boomer" stratum of 1968. This was a down-shift, from commitment to physical economic progress in the conditions of life of nations, toward that proto-fascist form of existentialist neo-Malthusianism which has characterized the rising

²⁴ Consider, for example, the depressing effect which the influence of Aristotle on religious doctrine has had on the ability of a culture to develop progress in economy and general welfare of an economy.

trend in U.S. and European policy-shaping by leading institutions of nations and international institutions over the 1968–2008 interval to date.

Typical of this is the substitution of “googling” for thinking among, most notably, the 18–45 age-group. Entire chunks of the knowledge, and related intellectual development accumulated by European culture over the course of the span from the Seventh Century B.C. to about 1968, have been virtually wiped from the cultural memory of an increasing portion of those two generations, a process which has been a characteristic trend of the 1945–2008 interval as a whole. We have come thus, as in the course of recognizable “dark ages” of the European cultures of the past, to a point at which only a true Renaissance, like that of Europe’s Fifteenth Century can repair the cultural memories of peoples from the effects of two or more successive generations of moral and cultural decadence.

Sometimes, as in the cases of past renaissances in the history of European, and other cultures, people who think and communicate seriously have found it convenient to refer to the deeper, more remote meanings which, while considered “archaic” by some, represent an essential source of the benefits which the users of a more literate tradition acquire under the influence of the effects of scientific and cultural progress; or, in interaction between ideas expressed in one language which can be expressed with fair approximation within the terms of other languages.

For example, the most typical expression of the force of ironical ambiguities related to metaphor as such, is the case in which the same word, or similarly sounding word, has available to it relevant double or even treble meanings, as in what is sometimes identified as “punning,” as William Shakespeare did, for example, in the ironical juxtaposition of the same, or similar-sounding terms, or, by change of context, or, through use of slightly off-key expressions which are definitely intended by the speaker. A choice of metrical organization of the composition and uttering of statements, is also a considerable variation. This multi-faceted quality of sense of irony, is most closely related to the kind of power of creative innovation we should associate with scientific discoveries. Similarly, for example, we meet such ambiguities in such forms as the ironical implications of the isotopes of the physical-chemistry of the periodic table, as most notably, for example, when the relationship between living and non-living modalities of isotopes is considered.

The aspect of the matters which I have just addressed as illustrations of the role of irony in use of language, is most significant in cases of the type which I shall be emphasizing in this present chapter of the report. Take as an example, the difference between the correct notion of universal gravitation (as by Kepler and Albert Einstein), as distinct from the misuse of Kepler’s own formulations when these were reduced to the form of a degraded approximation, as the latter, greatly defective types of readings are associated popularly with

Titius-Bode, or, in the worst extreme, with other more emphatically Newtonian approximations.

As an example of this difference, we have: Einstein's reading of Kepler's notion of a principle of universal gravitation, as related to what vulgar mathematical practice defines as Kepler's "Third Law," points most immediately toward the conceptual difference.

Albert Einstein's notion of a finite but (actually, better said) finitely self-bounded, universe is in accord exactly with Kepler's notion of gravitation as a principle which provides a self-bounding of an *implicitly self-finite* universe. From that standpoint, the effect of gravitation at any location in an orbit is *ontologically infinitesimal*. In contrast to that are the notions of a Euclidean (e.g., Claudius Ptolemy), or Cartesian system. In the latter type of case, there is no self-bounding of the universe (no actual principle of *dynamics*, as Leibniz defined dynamics), and relations are thus degraded to assumptions about presumed existence in a boundless, largely empty space, within which things are banging about betwixt and between, as this were simply kinematic action and action-at-a-distance.

Thus, the standpoint of the hoaxster Galileo who was, so to speak, the mother of Rene Descartes, could never actually understand the catenary as both Brunelleschi had done, and as Leibniz and Jean Bernoulli did, for precisely this reason.

In general, the kinds of qualitative change our approach here is seeking to make clearer, are changes which share the same general implication as, within the assumed bounds of physical chemistry, a change in universal physical principle.

However:

Where Does the Human Mind Reside?

The human mind is not a mental-mathematical calculating machine. The actual method expressed by the creative powers of the individual human mind is more closely connected to metaphor, than what is ordinarily considered today as the standpoint of mathematics.

This distinction I have just pointed out, is properly illustrated by the tendency for insanity among those trained as "pure mathematicians." The tendency for serious mental pathologies whose characteristic is fairly described as a loss of sense of humanity in their work, is an example of this. An example of this, is the tendency of some, such as in the celebrated case of John von Neumann, to behave as "idiot--savants" on this account.²⁵

²⁵ This is typical of the circles of the followers of the positivist dogma of Ernst Mach, but takes more severe forms among the devotees of Bertrand Russell's *Principia Mathematica*, such as the Norbert Wiener and John von Neumann, who were expelled, in disgrace, from Göttingen University, for reasons of behavior related to this syndrome. Von Neumann went to extremes in his *Theory of Games and Economic Behavior*, as co-authored with Oskar Morgenstern, and went into full-tilt insanity with his posthumously published lectures on

Return discussion to Kepler's discovery of the principle of gravitation. In both of the two successive phases of his actually defining a concept of universal gravitation, as in *The New Astronomy* and *Harmonices Mundi*, Kepler's mind moves outside mathematical thinking as such, to discover, in each case, a *physically efficient mental object* which had properly informed his mathematics, but which, like Kepler's and Einstein's universal gravitation, operated as itself, existentially, from outside the domain of numbers as such.

The fuller implications of this accomplishment by Kepler (among other great scientific thinkers known to me) were not fully grasped among any of the usually listed modern practicing scientists until Bernhard Riemann's 1854 habilitation dissertation.²⁶ Although the direction of Riemann's thinking on that account was not really original in itself, the uniqueness of his achievement reflected his creative boldness in following through the process of eliminating the specific legacy of Aristotle, Euclid, and Claudius Ptolemy, where others had not. This forced his consideration and treatment of a crucial ontological issue, an issue which had been haunting most of what is recognized as scientific method throughout most of the modern history of science, up to the point of Riemann's habilitation dissertation's appearance.

The relevant discussion of that issue runs as follows.

In so-called "traditional" teaching earlier, back as far as the "materialists," or Aristotle and other ancient Sophists, the standpoint of more or less official currents of thought among such folk still today, was to adopt a large measure of what was presumed to be reality, as presumed to be expressed in terms of *a-priori* blind faith in sense-certainty, as Euclid's *Elements* states that proposition. The notable feature of Riemann's habilitation dissertation is, from the very outset, that it throws away the *a-priori* assumptions of both Aristotle and Euclid, and also any presumptions like theirs.

The result of that is not the denial of the existence of what are usually considered to be the formal objects of physical science; rather, it is emphasizing that our senses afford us a view of shadows cast by reality, rather than of the acting reality itself. This is what Kepler had recognized, implicitly, thinking, thus, like Nicholas of Cusa before him, in showing that it was indispensable that we rely on neither a visual nor auditory sense of reality for defining the organization of our Solar System, but must treat each of them, together with the contradiction between them. Such contradictions are to be recognized as keys to defining an

The Computer and the Brain. The notoriety of the followers of von Neumann's extremities around "Silicon Valley," is notable on this account. The cult of "Information Theory" promoted by Dame Margaret Mead *et al.* from the Josiah Macy, Jr. Foundation, was responsible for the promotion of that cult, just as a relatively hegemonic accumulation around Tjalling Koopmans polluted the field of so-called mathematical economics with this sort of lunatic forms of incompetence in the name of mathematical formalism.

²⁶ Albert Einstein emphasized the relevant connections among his own work and that of Kepler and Riemann.

object whose reality is not specific to either specific kind of sensing, but only to the generation of the contradictory shadows cast (in this case) by each of both senses, each in its own way; just as we are obliged to examine the Crab Nebula's shadow cast on different sensing instruments, today.

Let us restate that case, but only slightly. The method used by Kepler for that case, was to use the contradiction between conceptions associated with two kinds of "instrument-readings" employed. His necessary approach was to define an object which was neither of the two sets of contradictory readings. The object was to discover, in this way, the real, unseen object whose efficient existence corresponded, congruently, with the evidence of the shadows cast by the contradictory readings met, respectively, in the instruments of vision and hearing. The unseen object, universal gravitation, was the real-universe object of a higher order than available to simply direct perception, an efficiently existing object for which the relevant, related objects of vision and hearing were merely shadows cast by the unseen, real object.

The ontological implication of the leading argument in Riemann's habilitation dissertation, is that what we actually know, mere shadows aside, is the objects known in the same way that Kepler discovered gravitation, first, in the definition of the Earth's orbit, with respect to the Sun and the Mars orbit, and then what a miscreants' use of the term "Third Law" reports as a formulation for gravitation. These real objects of scientific attention, such as universal gravitation, are never, and never could be products of mathematical induction or deduction. Yet, the human mind is enabled to know the real, unseen object, and that with a far greater, and far more efficient authority than deductive-inductive presumptions such as Titius-Bode could achieve.

Therefore, we must understand the nature of the human mind's creative powers accordingly, as powers which, as Kepler's discovery of universal gravitation shows, are closely related in their sensory expressions to the principle of metaphor.

It is the development of these specific kinds of higher powers of the human mind, associated with phenomena of metaphor, which ought to become the primary goal of the education and related development of the creative mental potentials of the child, adolescent, and adult in our society. Here lies the power of human individual creativity, as nowhere else. Here lies the power of human creativity; here lies the agency which supplies mankind the potential for increase of the productive powers of labor through fundamental scientific and related progress in the progressive development of the human economy.

In the instance of this report, the function of this process of generating real objects, as Kepler defined universal gravitation, is the key to understanding what I now also define as the fundamental principle of history, a principle also to be known as the principle of individual human creativity in the domains of both physical science and Classical artistic composition.

What Is Important Is the Effect

There exists no absolute separation between physical-scientific and Classical-artistic creativity. As the relevant point has just been illustrated: on a higher level, Classical artistic composition (the domain of metaphor) and the domain of discovery of what are subsuming physical principles, such as Kepler's discovery of the actual principle of universal gravitation, are facets of the same domain, a domain which is uniquely specific to the potentials of the human mind, unique, thus, among all known living creatures. That definition of *mind* is the actuality of the hypothesis of the higher hypothesis.

It should be implicitly clear (at the least), that the development of the individual mental potential for this kind of work, lies in the expression of forms of practice which foster the development of both kinds of metaphor, those of physical science (e.g., Bernhard Riemann) and those of Classical artistic composition (e.g., J.S. Bach and Beethoven, especially Beethoven's so-called "late works," the late string quartets, most emphatically). For example: a really intelligent mind says, "Rembrandt's The Bust of (wise) Homer contemplating (silly and pretentious) Aristotle."²⁷ Similarly, Archytas' construction of the perfect duplication of the cube, or Kepler's discovery that the increment of orbital action of Planet Earth is to be measured as Leibniz learned the lesson which led to his uniquely original discovery of the calculus, from Kepler: the idea is of an *ontologically (not spatially) infinitesimal increment of physical space-time*, not a Cartesian, nor Newtonian phenomenon.

To make this crucial point clear, let us emphasize in concert, that the term "the universe" should *not* be treated as a name for a collection, but the principle which generates those things. That poses the question: "How do we know that the universe actually exists?" Do we merely presume that it exists, *a-priori*? How might we distinguish an actually existing universe from the name of a depository into which all discarded experiences from the past and present are either dumped, or in the process of becoming dumped?

We know what we are able to change, as in the form of change experienced when we "break through" to a discovery of what can be shown, as experimentally, to be the higher principle which solves the riddle which refuses solution from below.

However, as Plato's *Parmenides* should guide us in reading Heraclitus' insistence that only the permanence of change is real, the persistent folly of opinion-making, still today, is to insist, first, as Descartes did, on discovering the existence of a fixed object, and, then, moving it.²⁸ The principled objects of existence in the dynamics of physical space-time, whether the dynamics of the Pythagoreans and Plato, or the modern science of Cusa, Kepler, Leibniz, *et*

²⁷ With Rembrandt, the eyes are crucial!

²⁸ Cf. Gottfried Leibniz, *Specimen Dynamicum*, 1695.

al., are typified by Kepler's development of the conception of universal gravitation: *creation is motion*.

So far, here, we have emphasized motion within, implicitly, the domain of what are treated as inanimate objects.

The Mind as an Object

At this point in the writing, we are now, clearly, approaching the conclusion to the present report. I have chosen, at this point, to identify the principle whose identity I have promised to present, first, and, after that, to append an explanation of that principle as the closing element of this report as a whole.

Among its many other distinguishing achievements for all competent modern science, it is fair to say that Kepler's discovery of a universal physical gravitation best typifies the competent basis for all that science. His achievement on this account has been, as Einstein emphasized, unique for all competent modern science.

The essential fact about that discovery by Kepler lies in the method he shares both with Nicholas of Cusa and such ancient predecessors as the science known as "Sphaerics," by Plato and the Pythagoreans. He discovered an object which is an integral part of the universe as a whole, which modern science calls universal gravitation, but which, while it exists outside all direct sense-perception, is proven to exist, as Einstein argued, with relative supremacy, by the very nature of its efficient effects.

Universal gravitation thus becomes, with Kepler, for our present knowledge, a universal existence, a principle, like others of that kind, which bound the universe which they represent. However, the real object which the knowing human mind, such as that of Cusa and Kepler, sees, is the reflection of the identity of the individual creative human mind. To "know thyself," to speak Platonic, is to know, with certainty the existence of the Creator. It is this knowledge of oneself, so attained from beyond sense-perception as such, which is, in principle, the highest level of all knowledge.

In the universe so defined, the scientifically validatable discoveries by mankind are of two principal forms of expression. On the one side, there are the discoveries of universal physical principles as such. At the same time, there are the necessary means by which individual human beings are enabled to cooperate in discovering universal physical principles bearing on the universe we inhabit, and are therefore required to discover, and to employ the means, known categorically, as appropriate forms of culture, by which the discoveries of universal physical principle are made, and the necessary social processes for choosing and implementing such discoveries are discovered by mankind. The latter aspect of the matter is the domain of culture.

This brings us to the most essential matter, the functional importance of individual human immortality, so-called “spiritual immortality.” The actions which the best among us may contribute to fulfilment of the Creator’s intended purpose, is a contribution to eternity made by mortal human individuals with very short lives (a mere century, or much, much less) relative to that mission to be performed.

There are enterprises such as railway systems, which as continuing, functioning institutions, are more than a century old. No current conscious experience of our people of the U.S.A. today expresses this irony more clearly than contemplation of such subjects as the creation and continued existence of the unique design, among all nations of the planet today, of our U.S. republic itself, a republic which came into being, through Columbus’ following of Nicholas of Cusa’s intended policy, of providing an alternative intended to rescue Europe from the follies of Europe’s own oligarchical traditions, by planting the best of European cultural traditions here across the Atlantic.

In a large scheme, the birth of Christianity at virtually the same moment of history that the evil which was the Roman Empire was born, is also an institution which is intended to carry on the mission for which it was founded, while the mortal remains of living people pass on. Yet, viewing the still more ancient institutions of mankind’s existence on this account, the fact should be made apparent to us, that living to serve the mission which it may be indicated that we serve while living a mortal life, is implicitly eternal, a form of existence-in-motion which never dies, but represents, if we choose, our brief mortal investment in the continuing work of eternity. Nothing represents that investment more typically than true science and great Classical art, but nothing more profoundly than what we are enabled to discover, as Kepler did, as the face of the Creator in the powers through which man, like Kepler, discovered the image of the Creator in the existence of our universe, and the image of our kinship to that Creator evidenced in the fact that we share in that creativity through which we were enabled to discover the image of ourselves in what Johannes Kepler discovered as the person and work of that Creator of our universe.

We need to rediscover our immortality, the immortality of our obligation to ongoing work which is the future of mankind within this universe. That rediscovery of that elementary truth must be recognized as the true commitment of all among us who are to be considered a reliable variety of citizen of our republic.

This means to see those fallen associates in great enterprises as with us through what they have contributed to the cause of our continuing obligations. The practical point to be emphasized can be made by standing before a mirror, my thoughts here in your mind at that moment, when you ask yourselves, “Therefore, who am I, really? What shall I, therefore, choose to become?”

In this time of great crisis in not only the continued existence of our nation, but the world at large, only men and women who can give up pursuit of cheap satisfactions for that kind of sense of mission, are truly qualified in stamina and loyalties to be respected as measuring up to the obligations of citizens of our republic in these presently terrible times.