

More on Physical Time: The Meaning of Physical Time

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February 3, 2009

[Published in *Executive Intelligence Review*, Volume 36, Number 6, February 13, 2009.
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My report "Nations as Dynamical" concluded with a summary outline of the economist's working definition of physical time, as opposed to clock time. Now, still responding to the same relevant question posted orally to my January 22nd website address, I focus on some essential implications of the role of physical time as such. I compare physical time, as a conception of a principle of physical space-time, with the related concept of physical space.

Foreword: Leibniz on Descartes

Now, as a few words on background, I present some prefatory observations on the subject of Leibniz's exposure of the fraudulent thesis of Rene Descartes. Thereafter, this report will turn to the indispensable further development of the argument, respecting creativity as such, which was identified in the concluding portion of my "Nations as Dynamical."

To summarize the relevant leading points in "Nations as Dynamical," I state the following.

The fact that a modern concept of physical-space is distinct from such silly notions of space as those of *Euclid's Elements* and Rene Descartes, was the premise of a major step forward in modern science by Gottfried Leibniz, as in a series of his writings dating from the 1690s on. For my purpose here, let me suggest to you that the most convenient among his initial statements to be referenced on this matter, might be his 1695 *Specimen Dynamicum*. In other writings commenting on his decision, Leibniz attributed the prompting of his own discovery of this fact to his close examination of the experimental evidence of certain systemic errors in Descartes' writings, errors which demonstrated the absurdity of the cardinal elements of Descartes' efforts to define a Sarpian (quasi-Euclidean), *a-priori* notion of the distinctions among space, time, and matter.¹

¹ Leibniz himself dated his development of this argument against Descartes from Leibniz's own encounters with Benedict (a.k.a. Baruch) Spinoza. Leibniz explained, that he had concluded that the principled flaws in Spinoza's thinking were a product of the malicious influence of Descartes. Leibniz's arguments of the 1690s were launched with emphasis on the systemic implications of some of Descartes' silly attempts at physical science. Leibniz, noting those crucial errors of presumption by Descartes, carried the further discussion of the

The germ of the modern discovery of a concept of physical-time, as opposed to clock-time, was already implicit in the relevance of Leibniz's introduction of Fermat's principle of least action, and into the development of the Gottfried Leibniz-Jean Bernoulli development of the higher principle of physical least action. This initiative of Leibniz and Bernoulli, led into the exposure of the fraud of what was allegedly Isaac Newton's theory of light, as that fraud was exposed by the École Polytechnique circles of François Arago and associate Augustin Fresnel. The specific, chief achievement of Fresnel, lay in his tracing out certain deeper, ontological implications of the functional difference between, on the one side, the pro-Cartesian, corpuscular notion of radiation of light which had been attributed to the authorship of Sir Isaac Newton,² and, opposing that, that physical principle of harmonics which had been established by Johannes Kepler's original discovery of the general astrophysical principle of gravitation in his *The Harmonies of the World*.

However, while all that I have just restated in these preceding paragraphs is true, scientifically and otherwise, what I have said within my "*Nations as Dynamical*," as a statement of a conclusion reached, left it to this present report to include the explicit process of discovery by means of which Kepler, among the predecessors of Fresnel, reached and proved his conclusion.

Contrary to what I emphasize in this present report, the typical sophist argues like the groom marrying what might appear to him as a beautiful bride, when she is only a wooden department-store dummy. As the years pass, he wonders (like a typical mathematician) why she never becomes pregnant! So, similarly, the sophists have argued against Kepler, and in favor of the customary, merely descriptive, reductionist nonsense on the subject. It is relevant, for understanding the achievement of Fresnel, that such opponents of Kepler ignored the fact, that Kepler's own discovery, which was a product of a conclusion rooted in a rigorous, experimental proof of principle, against which they had argued, against his conclusion, without any consideration of his proof and his development of that proof.

Dummies made of wood, plaster, or less gracious material, aside, Kepler's proof lay within his recognition that, although his experimental evidence relied upon both optical and auditory assumptions, respectively, neither form of sensory conception used, could be reconciled, by itself, as if mathematically, with the other. As the famous case of Helen Keller illustrates the crucial point of evidence for Kepler's case, reality lies, in principle, outside the bounds of literal readings of sense-perceptions. As Louis Pasteur emphasized, it is what are,

matter into taking up the implication of such achievements of the ancient Pythagoreans which are to be considered as leading into the genius of Archytas in designing the principled demonstration of the duplication of the cube.

² Laurence Hecht, "Optical Theory in the 19th Century, and the Truth about Michelson-Morley-Miller," *21st Century Science & Technology*, Vol. 11, No. 1, pp. 35–50 (Spring 1998).

ostensibly, as the exceptions to the presumed rule, which are the scientifically interesting realities of life, the realities properly recognized as truly universal physical principles. That same point by Pasteur, is to be translated into practice as principles which, in and of themselves, lie outside sense-certainty, that because they correspond to Johannes Kepler's uniquely original discovery of the way in which a general principle of Solar-systemic gravitation lies within the irony of *the contradiction between the mental image of vision and of harmonically ordered hearing. The optical and auditory experiences are not the reality of the matter; they are the adumbrated shadows cast by a reality which the senses themselves do not report. The human mind, not the senses, must discover, and demonstrate the object* which these mere shadows have cast upon the sense-organs.

So, it happens, that in much of what passes for modern physical and related science, the professional does not actually have an understanding of the relevant original process of discovery, but instead, simply relies upon the convenience of the apparently proven accuracy of some mere mathematical formulation, or its like, as a substitute for the actual process by which the discovery itself was made. The crucial issue which I emphasized in my "*Nations as Dynamical,*" was that the issue of the ontological character of human creativity as such, requires a more rigorous kind of consideration than what the unfortunately typical, contemporary owner of a doctorate in physical science has actually worked through. Here, we require clarification on the matter of *the ontological nature* of a principle of physical economy as such, as I do in this present report.

We must, therefore, focus attention here on the subject of the method for discovery of the physical principle of creativity in the field of the science of physical economy as such. Focus of attention on essentially relevant elements of the work of Johannes Kepler, Leibniz, Riemann, *et al.*, as such, is (as I shall show in a third paper of this series) essential for true insight into the indispensable role of scientific creativity in "driving" a recovery of the U.S.A. and other economies from the onrushing general breakdown-crisis currently nearing the point of a general, physical-economic breakdown.

I. Effective Work Per-Second

Throw aside what would pass in the *New York Times* counterfeiting style book, or comparable locations, for today's misuse of the term "creativity." The usual meaning associated with the term "creative," is, scientifically, mumbling nonsense; often, the defense of such nonsense as the *Times'*, is of the form, "None of the friends I trust will disagree with me." Contrary to such pathetic expressions of opinion as that, in competent scientific practice, "creative" has a specific, and rarely recognized, special meaning, a meaning which does not exist in the lexicons of typical, recent university graduates, or relevant others, today.

Properly employed, that term, “creative,” does have a very important, specific, scientific meaning. It refers to *a quality of the individual human mind which does not exist among lower forms of life, nor a typical Wall Street figure of today*. It refers to a term whose true meaning is rarely intended when the term “creativity” is ordinarily employed in academic, or related usage today.

To identify a much-needed, competent definition for the term “creativity,” we must restrict the term’s use, either to principles of nature which exist, and which in forms of life lower than mankind, but, even among our species, rarely occur as an expression of voluntary willfulness today, except among exceptional members of our human species, and that, so far.

Nonetheless, the proper use of the term is definitely limited, in the sense that it can be identified in a rigorous way, but that is only in a way which lends itself to the actual idea of creation, the quality of being susceptible of communication, even to persons who had been ignorant of even the very existence, and efficiency, of such an actual idea as I have defined it.

That said, take a case with which some among my younger scientific associates have become familiar, and that, happily, with increasing competence. Take the exemplary case on which all competent modern science is premised by reference, the case of Johannes Kepler’s creative action in his uniquely original discovery of the general principle of the system of Solar orbits, as in his *The Harmonies of the World*.³ The work by Kepler (with emphasis on *Harmonies*) is, for special reasons which I shall indicate in this present report, the proper beginning of an economically competent general practice of modern physical science; therefore, it provides us a standard of reference for the meaning of the notion of a specifically creative act of discovery within the bounds of the category of modern science as such.

That is an example of what I mean by true creativity.

The principal source of widespread difficulty respecting even the mere definition of “scientific discovery,” has usually been, historically, a prevalent pattern in the known societies of ancient through modern history, a pattern typified, symptomatically, by the central issue of Aeschylus’ *Prometheus Bound*.

Before turning attention, directly, to what I have just referenced as the function of human creativity as such, it is essential that we first focus on the socially systemic, academic, or other obstacles to recognizing the functioning of the human potential for creativity.

³ Admittedly, the title of Kepler’s work is often mistranslated as *The Harmony of the World*, rather than the proper *The Harmonies* (or, “harmonics”) *of the World*.

The Obstacle to Reason

The significance of Aeschylus' *Prometheus Bound*, is located in its thematic issue. That is, the Olympian Zeus' ban on human creativity: which shows Zeus's intended bestialization of all mortal human individuals, by forbidding, not only the use, but the discovery of any universal physical principle, such as "fire," or, today, nuclear-fission power. That issue arises in the location of this present writing by me, as the way in which human beings are actually conditioned, at least usually so, as in the contemporary U.S.A. and Europe, against any actually intentional employment of their individual creative powers, those creative powers which distinguish human beings from all lower forms of life. Thus, the very idea of the existence of an actual phenomenon of creation does not exist in the mind of the usual certified financial accountant, nor in the mind of most of today's faculty members of leading academic science departments or economics faculties.

Every gifted child has experienced the effect of that "Olympian law" of Zeus. Thus, any young person, as in schools, who shows the activation of his, or her actually creative mental powers, will probably become the "black chick" targeted for pecking by the "white chicks," as if he, or she were a virtual "outsider," if not actually comparable to an African-American at a Klan rally. Thus, it is usual to see that youth of the so-called "higher IQ" categories often seek to avoid hostile pecking by the "white chicks," by withdrawing from behavior which tends to bring them into that kind of attack which is set off when signs of their own more developed mental potential enrage the "white chicks," as the presence of the legendary swan enrages the ducks. If the more gifted student, for example, behaves naturally, generally, that student is often made "fair game" for mob-like attacks by some among the "white chicks." Even teachers in public schools and professors in universities have often tended to ally themselves, as more or less open sponsors, with the relevant "white chicks'" mob-like behavior.

Why did the "white chicks" (and many among today's relevant types of faculty members) tend to behave in such a brutish fashion?

For example, in my personal observation, during the 1930s and later, "anti-Semitism" of the 1945 "VE-Day" American populists over the interval from about the 1920s through 1940s, was associated with hatred of the child or adolescent, for example, who was suspected of being among "those brainy Jews." (Sometimes persons stereotyped as an "outsider" to "our American populist way of life" as in the mind of some American or European as being of Asian or African, or Spanish-American origins might be treated similarly.) The typical "free trade" fanatic of politics still today, especially that of Yahoo-like, populist leaning toward

racist hatreds, tends to fit the category of the “populist” anti-intellectual depravity mustered in support of the wildest, pill-taking and other radio and TV fanatics of that sort.⁴

On the opposite side, that love for other people which we should associate with the “Westphalia Principle,” is a reflection of the high regard a civilized human individual feels for all other sections of mankind, a love for that creative potential which distinguishes men and women from feral beasts, or beast-like populist fanatics, including the typical, ego-ridden, dumb religious fanatic.

Why should those “white chick” sets behave with such frequent hostility toward those portions of their own society and age-groups which would tend to make the relatively greatest contribution to the benefit of them all?

The result of those referenced, historically prevalent, “conditioned” forms of obstacles to actually creative thinking, which are often encountered among the majority of today’s populations, has been the predominant characteristic of virtually all known human cultures. Think of that majority as like the Prometheus-haters among the Olympian lackeys of the Zeus as portrayed by Aeschylus’ *Prometheus Bound*.

How and why such prevalent habits of known cultures differ from one another, and, more important, why they tend to converge in certain common features of their malicious effects, begs a broader study of those histories than is needed for our purposes in this present report. A few typical cases are sufficient, as matters of background, to provide a setting in which the specific purpose of this present report can be realized. That done, we will have now made my foregoing point clear enough for our purposes in this present report.

Take the case of the a-priori assertions of alleged principle which circumscribe the contents of a Euclidean geometry; treat this effect of Euclidean brainwashing as a key illustration of a general form of the method which has been employed, in classrooms and elsewhere, to prevent individuals from employing their innate, human creative potentials. In this regard, the opening two paragraphs, and concluding sentence of Bernhard Riemann’s 1854 habilitation dissertation, when juxtaposed, provide us with the model form of something likely to incite a direct attack of resentment, an attack intended to suppress “the ferment of human individual creativity” within the population, a brutish attack made in the fascist-like effort to terrorize the target into a state of cultural submission to the populist mediocrities of the many.

Thus, in that observation, we have the background, to recognize the essential characteristics of the sundry, ignorance-fed expressions of those forms of mass suppression of scientific-

⁴ For example, as late as the early 1950s, I was still the target of anti-Semitic attacks which were prompted by the fact that my heavy-rimmed spectacles marked me as “obviously Jewish” among the typical representative of the “anti-intellectual” classes.

technological progress, such as malthusianism, or today's neo-malthusian ("green") mass-stupefaction of populations, as by the World Wildlife Fund of the current Duke of Edinburgh; his son, the Prince of Wales; the late Prince Bernhard of the Netherlands; and Philip's American puppet, the perverse former U.S. Vice-President Al Gore, complementing forms of brainwashing such as Euclidean geometry.

Sarpi's Liberal Syndrome

Take that case of Britain's Duke of Edinburgh, as a typical expression of the evil embodied in the modern Anglo-Dutch Liberalism which was launched, in the aftermath of the famous Sixteenth-Century Council of Trent, launched by the initiative of the systemic irrationalist, and anti-Trent fanatic, Paolo Sarpi.

Whereas, Sarpi's rivals, the Aristotelians, imposed a simple suppression of knowledge of the existence of human creativity, Sarpi substituted a systemic irrationalism modeled, by his own choice, upon that of that wildly immoral, medieval irrationalist William of Ockham. The practical significance of the difference is that, whereas, the clerical Aristotelians insisted upon the suppression of creativity in society, Sarpi allowed technological and related forms of innovation, insofar as this license did not permit the consideration of a discovery of actual universal physical principles. This ideological strategy by Sarpi permitted the faction of Venetian usury oriented to the northern maritime regions of Europe, to choose a prospect of relatively greater military and other power, at the expense, strategically, of those relatively more backward devotees of Aristotle.⁵

Whereas, as Friedrich Schiller presented the image of religious warfare, in the Netherlands, and also, in his *Wallenstein* Trilogy, the clerical adherents of the nominally Aristotelean dogma, were no less irrational in their part as practitioners of post-1492, Nazi-like religiously motivated mass-homicide, than Sarpi's nominally Protestant followers of a revived cult of the medieval irrationalist William of Ockham. As the leading figure of the Eighteenth-Century British Empire, Lord Shelburne, understood, the British Empire whose strategy for empire was based on a commitment to the heritage of Julian the Apostate, all European empires, ancient through modern have premised the maintenance of their power on the emperor's reign by the power of the pantheon, as they did by playing one religious sect in virtual, or actual perpetual warfare against another.

The carnage of the pre-Westphalia conflict between the Protestant and Catholic religious party, from 1492 through 1648, was nothing other than two sets of the common dupes held

⁵ The superiority of the Anglo-Dutch Liberals over the others, was concentrated in superiority of Anglo-Dutch Liberal and related forms of maritime superiority over the Mediterranean region, as the latter is typified by the Eighteenth-Century ruin of the silly Spanish Armada.

in bondage to mutual slaughter, as in the case of the Sykes-Picot-ridden Middle East still today.

So, through the advantage represented by Sarpi's criminal-minded, Liberals' evasion of the strategically self-crippling characteristics of medieval and modern Aristotelean brutishness, Sarpi founded what was to become a new Venetian world empire, called, now, conventionally, a British, or Anglo-Dutch, or the post-1971-73, Anglo-Dutch-Saudi world empire of international financier rule through manipulation of the dupes into the game of religious or kindred perpetual, regular or irregular warfare. This British empire, which, since 1968-1973, has functioned as the only actual empire in the world today by acting through a policy of suppressing investment in relevant forms of scientific and technological progress, including the suppression of the development of productive investments in basic economic infrastructure. The true religion of the British monarchy and its principal subjects, is not the worship of God, but of the god of usury defined, in principle, by Adam Smith in Smith's 1759 *Theory of Moral Sentiments*.

So, the same movement of Sarpi which employed Liberal approaches to the use of merely technological, rather than actually scientific progress, to gain a strategic advantage of its Habsburg-linked rivals, reacted, itself, against the surge of the actual science which had been launched by Kepler's revolutionary discoveries. They reacted so against France's Cardinal Mazarin and Jean-Baptiste Colbert, and against Gottfried Leibniz, above all others. From the time of the Napoleonic wars of that foolish Napoleon Bonaparte who ruined continental Europe to British advantage with his wars, the policy of the Liberal followers of Sarpi *et al.*, has been, to the present date, to destroy the kind of scientific and cultural progress which can be achieved only through its realization in the increase of the productive powers and cultural development of the general population.

So, Napoleon Bonaparte lies like a hero's corpse in Paris. Either he was consciously a British agent, in his role of conducting what was, in fact, a new "Seven Years' War" on London's behalf, or, he did the job of securing a semi-permanent tyranny, by London and Amsterdam over continental Europe without knowing what a manipulated fool he was.⁶

⁶ The entirety of British imperial policy, from the 1890 ouster of Germany's Bismarck from the post of Chancellor, and including the assassination of France's President Sadi Carnot, the British 1894 launching of a continuing pattern of Japan's warfare against China during the 1895-1945 interval, the assassination of U.S. President McKinley, the 1905 warfare, World War I, World War II, and the so-called "Cold War," have been, each and all, an extension of the strategy of the so-called "Seven Years' War" which first established Lord Shelburne's British East India Company as a private empire with a private army and navy of its own.

Thus, the triumph of Britain (e.g., the Anglo-Dutch-Saudi new Venetian empire) over the U.S.A. and continental Europe since 1968–1973, is the sole principal cause of the presently ongoing general breakdown-crisis form of global economic collapse of the entire planet now.⁷

The principal characteristic of this general, global economic collapse of the planet has been the “new malthusianism” imposed by the influence of both the British empire and the “environmentalist” swindle of British dupes such as the wildly lying, former U.S. Vice-President Al Gore. Solar panels and windmills are the hallmarks of the advent of the world now into the already quivering brink of a planetary form of new dark age far, far worse than that which struck Europe during the notorious Fourteenth-Century “New Dark Age.”

Science versus Liberalism

To the best of my knowledge, and my knowledge is, on its record of performance since 1956–57, manifestly far superior relative to any other so-called “authority” in the field of economics throughout the world today, there has been, presently no competence in long-range economic forecasting among my rivals among nominally professional, putative economics and related professionals in the world today.

Earlier, during the 1950s and early 1960s, our relative successes in national economies in the U.S.A., some other parts of the Americas, in western and central continental Europe, Australia, and in the Asian rim of the Pacific were not due to any particular competence in the practice of economic theory, but, rather, were chiefly products of reliance on scientific and technological progress in increase of the physical-productive powers of labor, as in agriculture, the machine-tool-design side of industrial practice, and in programs in infrastructure such as those launched by President Charles de Gaulle’s Fifth Republic. The financier community’s role has been, chiefly a parasite, and the economists were chiefly, usually, at their moral best, a nuisance; but, certain habits of national agro-industrial and infrastructural progress had been embedded in the aftermath of the experiences of World War II. Although that happier impulse was already waning even before the assassination of President John F. Kennedy, its waning impact had been still strong.

⁷ The collapse of the U.S. dollar had been caused by the British floating of the pound sterling in Autumn 1967. However, already, during the middle to late 1950s, I had foreseen the threat of a decades-long decline of the U.S. economy. Until the middle of the 1960s, I consider that decline to be an active, probable threat. By 1967–68, I was assured that a long-term general breakdown-crisis was already in progress in the trans-Atlantic economies. As I announced in my July 25, 2007, webcast, I announced that what is now clearly the presently onrushing general breakdown-crisis of the existing world monetary system, is absolutely certain. Only the installation of a new credit-system, to replace the present monetary system, could save global civilization from a presently onrushing new dark age; without a U.S. leading initiative in launching a new credit-system, to replace the useless monetary systems, there is no happy change for mankind in the generations immediately ahead.

By the end of the 1970s, the impact of the World War II generation was already waning; as the 68ers' influence took over, more and more, the forces which had fought World War II and its aftermath, were leaving the site. With the disgusting developments of the 1968–1973 interval, the pathetic strains of the ideology of the “68ers” were now the reigning trend. The fatal economic downturn then reigning inside North America and Europe (most notably) will now continue, to its early catastrophic end, unless a new cultural impact conveyed by the relative best among an emerging young-adult generation now in their twenties and thirties, exerts the degree of relative influence at the top which the 68ers found during the 1970s and 1980s, a generation or more ago.

The point I am stressing at this point, is that there is an important, sometimes crucial distinction to be made, between acquired habits of one generation, and the direction of change represented by an oncoming younger one. The impact of my own family tradition in these United States, which is traced in my genealogy since the Mayflower and Massachusetts Bay colony, has helped greatly in teaching me to think of policy-shaping over a span of centuries, not a mere few years, even a decade. In general, no individual has much of a mark on his culture's history during a lapsed span of less than a generation, a generation being the span of a cycle of capital investment in production, and a much longer span, of two generations span, or more, that of investment in the types of basic economic infrastructure.

The nations of the U.S.A. and western and central Europe today, are fairly regarded as presently under the control of most extremely neurotic knee-jerk cultures. That is to point to what has become the generational span of those changes in economic and related policy of practice which are associated with revolutionary surges of scientific progress.

It is, perhaps, fortunate for us, that the new U.S. President is almost two generations younger than I am; thus, if he is permitted to do his job, and actually does it decently, he has a prospective life-span long enough to come to amount to something useful for our society, and the world.

II. Science, Money, & Economy

That much said in the preceding pages of this present report, so far: the essential point to be considered here, is the fact that human beings, unlike any other living species, have the inborn power to make actually creative discoveries of principle which, once adopted by society, change the universe, at least implicitly so. *Man is not merely an inhabitant of this universe, but is made in the actual likeness of the universe's Creator.* That is not an opinion, but a scientific fact.

Other species, including all the different orders of living species other than mankind, lack what is uniquely a quality specific to mankind; but, humanity expresses a universal, determining, characteristic principle which itself is lacking in the ecology specific to each of all known orders of life apart from mankind. It is the principle of mankind, which distinguishes mankind from the beasts.

At this point of the report, my attention, and, implicitly yours, is focused on a more modest aspect of the aforesaid general principle. My attention is focused upon that principle of human life which underlies any competent conception of a real economic principle for guiding human society's existence and progress.

The existence of the human population is conditional upon society's currently relevant *potential relative population-density*. Unlike all other living species and their varieties, the human race is the only living species which does not share the characteristics of population of sets (systems) of animal ecological systems. Mankind's equivalent of an ecological population-potential is variable. This variability is chiefly located in the increase of the capability of the human species through its intellectual development. This fact is most boldly underlined by a simple contrast of the increase of the human population of the planet relative to the level of the higher apes.

Thus, the success or failure of human ecologies depends chiefly on the factor of scientific progress, as that progress is embedded in influence and effect through increase of the physical productive powers of labor, as this occurs through realization of discoveries of fundamental scientific principles which are expressed as upward-directed changes in the culture of societies as a whole, or, on the contrary, in the relative cultural stagnation, stagnation of practices by component portions, more or less "neo-malthusian" rabble among that culture's population.

In the end, it is the discovery and application of what is called fundamental scientific and cultural progress, which predetermines the rise and fall of cultures. Thus, a policy and practice of cultural zero-growth policy of any society, as in the U.S.A. under the growing influence of the pro-Malthusian "68ers" during the recent four decades, dooms that culture by its own hand. That is to emphasize that man's ability to sustain even a fixed level of population demands sufficient progress to offset the inevitable effects of attrition. The success of the human species, its fundamental superiority as a living species over all animal species, "condemns" it to a commitment to what is, ultimately, fundamental scientific progress in the practice of physical economy, per capita and per square kilometer of territory.

These matters of discoveries have the quality of universal physical principles, as typified by that principle of universal gravitation discovered, uniquely, by Johannes Kepler. They are, to speak of this matter here in terms of relative modesty, ideas respecting economy which have the same quality of power in the universe as the uniquely original discovery of the principle

of universal gravitation by Johannes Kepler. No other living species has shown mankind's manifest ability to do this.

That means, that to survive, today's civilization must be, immediately, now, suddenly, and radically changed, back to policies consistent with the trends expressed by President Franklin Roosevelt. Otherwise, the so-called "environmentalist" trends of the recent forty-odd years have already certainly doomed this planet as a whole to an immediate plunge into a new dark age, in which population-levels might bottom out at about one billion individuals, or less. Either those trends are now suddenly, and profoundly changed in favor of what I have preferred, or there is no hope for civilization during several generations to come, —and, I have been repeatedly shown, over about five decades, to have been the best long-range economic forecaster alive.⁸

So, human creativity, as I have just summarily described it, is a specific quality of the human mental, willful potential, a quality which does not appear in any other living species, and *has no root in the biological apparatus of any other living species*. This means, as I shall present this case during the course of the remainder of this present report, and that successor soon to follow, that: in the expression of actual human creativity, such as Kepler's uniquely original discovery of universal gravitation, the human mind "taps into" a power within the universe, a power which is not to be found as rooted within the bounds of the capabilities of all other living species.

It is this latter distinction of mankind, to which we allude, when we speak of mankind as having a power, that of a soul, a power which is not a by-product of biological creatures as we know them otherwise, but which equips human beings and their societies with a genuinely creative potential, if we choose to accept that gift to us.

This potential is therefore associated with something specific to the manifestations of the human brain-function in some way, as a power which is clearly associated with the human brain's expressed function, but a power which does not exist in the brain of any other living species. The evidence is, that something in the nature of the human species has developed the ability to "tune into," as if by a mode of coupling, some higher power in the universe, as no other known species has done. It can be restated: that the specific distinction of the manifest creative powers of the human mind, is that it is susceptible of being tuned into the principle of the Creator of the universe. In other words, that power can not be a by-product of biology as customarily defined by science so far, but is, as I shall address this in the forthcoming, concluding part of this series of reports, rather, "tuned into," *dynamically*, a power which is of a specifically higher quality than the evolutionary potential of living processes otherwise.

⁸ I may not be perfect, but I am the only known forecaster, worldwide, employing a competent method.

The Dynamics of Economy

What I have just said on this account, is not speculation; it is a practical fact defined by the specific, manifest, practical, experimentally accessible distinction of the human species from all others. Such is the creative genius expressed by such as Riemann, Einstein, and Vernadsky.

When I refer, as I do here, to “tapping into” some power which is not identifiable as contained within the individual member of society (or any other comparably relevant kind of process), we are in the domain of *dynamics*, as Leibniz employed that conception. The actual expression of what we should intend to mean when we employ the term “dynamics” in physical science, is that in addition to discrete objects of sense-perception, or related kinds of matters, the form of organization within whose bounds such local manifestations exist, is itself an efficient object of scientific conception.

This distinction arises inevitably when we are impelled to reflect upon the fact that space and time as defined by Euclid, or Descartes, do not actually exist; but, rather that space and time are expressions of objects of a special kind, which act upon, and are acted upon by what we otherwise recognize as akin to our intention in pointing toward discrete objects. Call them “*indiscrete* objects,” (sic) forms of dynamics which are themselves a special quality of physically efficient kind of conceptual object, as Leibniz defined modern dynamics, since they tend to meddle everywhere, as universal gravitation does, when that interference were liked, or not.

What I have just said in the preceding paragraphs, had begun to become clear to science’s experience in the aftermath of that line of qualitative development of modern science, through such developments as the skein of those discoveries of principle leading from the work of Nicholas of Cusa, Leonardo da Vinci, and Johannes Kepler. However, the point I am making here and now, could not have been made explicitly, until the way had been cleared for this, as it was for me, by the kind of effect associated, for us today, by the experience with Riemann’s 1854 habilitation dissertation by such outstanding successors of Riemann as Planck, Einstein, and Vernadsky.

Riemann’s work broke science free, in principle, from old, decrepit, a-priori assumptions, through the practical effects of working through the image of actually building our way outward, as if from within a pre-established, seemingly fixed scheme of the universe, into a conception of a universe which, in itself, expresses its role in a continuing process of upward, qualitative evolution in man’s power to change the universe. Such had been the issue of Philo of Alexandria’s condemnation of the Aristotelians of his time. This was a development in man’s knowledge which has been of a type roughly analogous to the evolution of the Solar system, beginning with the periodic table of the Sun itself, to a planetary form of Solar

system with a higher order of elements, reaching beyond the traditional periodic table of D.I. Mendeleev, and into the more recent so-called trans-uranic elements. This conclusion is no mere speculation; it is simply the quality of scientific fact which was unleashed, as it was for me, by the effects of following the trail from Riemann's 1854 habilitation dissertation.

The implications of that to which I have just pointed in the preceding paragraph, in particular, brings to our attention something which has always been there for man to recognize, but something which has been avoided out of respect for either the Aristotelean or kindred notions of a simply fixed order within creation.⁹ This power, which exists as typical of the prototype of the human individual, does not exist as a willful power in any other form of life, even though the principle of anti-entropic forms of upward biological evolution of species, shows the biological-evolutionary system to be under the rule of the anti-entropic principle also expressed in the biology of the Biosphere. Other living creatures are subsumed by that principle; *mankind, to be seen as subsumed by the Creator*, embodies that principle as its own.

These considerations are not speculative, but practical.

The only competent definition of creativity, is rejection of what is assumed to be a qualitatively fixed system of the universe, replacing that definition by the corrected notion of a universe being actively recreated, negentropically, in higher forms, that being under the control of an anti-entropic law of the universe as a whole.

The so-called "Second Law of Thermodynamics" is much worse than being, as it is, essentially, merely a fraud of Clausius, *et al.* There is no actual universal law of entropy in this universe, although there are, admittedly, as among academics, especially those in the train of the Liberal system of Paolo Sarpi, rather stupid doctrinaires who express a different opinion on the matter.

The preceding set of summary observations just stated by me here, is the conception subsumed by the fruit of the truly clinical evidence of the actual characteristics of human individual creativity, as in physical-scientific creativity, but also Classical modes of artistic creativity. Other living processes and their evolution, are subsumed by the universe as it exists as given to them; however, man is unique, as human creativity shows: unique in man's power to introduce principled changes into the universe, rather than simply obey them, when they occur. This is not some arbitrary assertion by me; it is the evidence of the increase

⁹ In the time of Jesus Christ and his Apostles, the Aristotelians of that time were arguing that, if God the Creator were a perfect being, he himself could not have changed the perfected universe once he had created it. The dogma of the modern Malthusian does not extend to be a law of nature, nor as of mankind's evolutionary potential. The perfection of the Creator, contrary to Aristotle, is the power to continue creating without limit. The entire universe shouts this fact as truth, except for the fools who have decided, arbitrarily to assert the contrary to be true and also eternal.

of the human population on this planet, when the pattern of the human species' performance is contrasted to that of the higher apes.

Defy the Children of Satan!

Given that background material summarized in this present chapter thus far, our attention should now be focused upon the psychopathological implications of the virtually cancerous mental disease, that modern syphilis of the human soul, called "environmentalism."

To wit, the ability of the human species to support a global population of about 6.7 billions persons, so vastly surpasses the population-potentials of the higher apes, qualitatively, that we must tend, even for that reason alone, toward recognizing, on the basis of such evidence, that the human population's characteristics are premised on mankind's creating its own needed environment to support increase of the human population-potential, per capita and per square kilometer. There is no naturally fixed upper limit on the human population's ability to reach far beyond present levels of its population on this planet. There are other questions to be asked and answered on this account, down the line, but those questions, themselves, are not, for us presently, of a quality relevant to the immediate prospects of mankind within the present century.

What we should know now, at least in an impressively large degree, are facts respecting the nature of the human potential which produces results of a type which are excluded among all other mammalian, or inferior species. These expressed differences all lie within the practical domain specific to true human mental creativity.

So, ask again: *What Is Human Creativity?* What, and who are the enemies of that human creativity?

So far, we have empirical access to knowledge of two specific types of experience of true creativity. First, we have local creativity, as by individual discoverers of practicable knowledge of provable universal principles. Second, there is knowledge of creativity as built into the essential character of the universe we inhabit, as the matter of the discovery of trans-uranic elements illustrates that point.

However, pause for a moment at this point: not "*How do we know this?*" but "*Why do we know this?*" Any among us who have thought seriously about *why discoveries of principle occur in a non-statistical way*, and who have actually made such discoveries successfully, will be able to understand the significance, and profound accuracy of my question: "*Why do we know this?*" The complementary question is, then: "*How do we know this?*" Name "*Why do we know this,*" *Prometheus*, and "*How do we know this,*" *Epimetheus*.

Why should we be able, and willing, to pose a valid question of a new principle, when that question has not been derived “logically,” as a question, from preceding experience? In fact, so far in known history, most people are decidedly “not willing.” Discovery of principle is not generated by experience; it is generated by the concern that we must abandon our habits, in order to go outside the mere repetition of existing experience. The inspiration we require, if we are to escape the monotonies of mere memory, lies not in experience as such, but in the imagination, as Percy B. Shelley, for example, presents the summation of this case in the concluding paragraph of his *A Defence of Poetry*.¹⁰

This power of the imagination, to which Shelley refers in the conclusion of that book, is sometimes identified as the power of inductive, as opposed to deductive reasoning. However, not in the ordinary sense of the use of the term “inductive.” The case of Kepler’s uniquely original discovery of the harmonic character of the principle of universal gravitation, illustrates the case. In short, since we are confident that the universe is lawfully reasonable for the potential powers of the human mind, the evidence of a systemic paradox in evidence infuses us with confidence that systemic paradoxes in the reading of evidence have a solution, including the cases of systemic paradoxes expressed in our experience of the universe itself.

This quality of existence of confidence in the probable affinity of the human mind with the intention of the Creator, always lurks within our thinking, even if this appears only as a kind of last resort.

So, we are inspired, thus, to be alert to cases in which we mislead ourselves, or are otherwise misled, into assuming that some assumedly “self-evident” assumption will explain away reality, as this is typified by the case of the a-priori axioms and postulates of a Euclidean

¹⁰ I quote here the relevant same passage from Shelley quoted as a footnote in my *Nations as Dynamical*:

“... we live among such philosophers and poets as surpass beyond comparison any who have appeared since the last national struggle for civil and religious liberty. The most unfailing herald, companion, and follower of the awakening of a great people to work a beneficial change in opinion or institution, is poetry. At such periods, there is an accumulation of the power of communicating and receiving profound and impassioned conceptions respecting man and nature. The persons in whom this power resides, may often, as far as regards many portions of their nature, have little apparent correspondence with that spirit of good of which they are the ministers. But even whilst they deny and abjure, they are yet compelled to serve, the power which is seated upon the throne of their own soul. It is impossible to read the compositions of the most celebrated writers of the present day without being startled with the electric life which burns within their words. They measure the circumference and sound the depths of human nature with a comprehensive and all-penetrating spirit, and they are themselves perhaps the most sincerely astonished at its manifestations: for it is less their spirit than the spirit of the age...”

That passage must be restated, in print and sung aloud, repeatedly, for the sake of its unique relevance as being uttered by me, yet once again, as stating a principle which is typical of every culture, in every age: that the individual member of society should become able to recognize himself, or herself, as expressing a behavior which is often, predominantly, typical of the movement of his, or her time, rather than simply a conscious product of his own, individual opinion-making. (My punctuation and editing.) Without that concluding paragraph of his *A Defence of Poetry*, any reprint of Shelley’s piece were fraudulent by intent.

geometry. The very fact that we reject those *a-prioristic* presumptions alerts us to some great fallacy of assumption in our way of thinking about the relevant subject-matter.

Thus, the elimination of the *a-priori* notions of time and space, together, or respectively, typifies the existence of a dividing-line between true inductive reasoning and childish, *a-prioristic* presumptions respecting whatever reality is affected by this matter. Sometimes, the name for systemic forms of intellectual stupidity is called “being a practical person.” Such a “practical person,” like the typical follower of the empiricism of the followers of Paolo Sarpi, makes up all sorts of what are, in fact, lies, if that fiction appears to be an opinion which will be taken as convincing by the proverbial next, credulous sucker. The religious fanaticism of the self-righteously ignorant, is merely typical of this pathological syndrome.

Thus, like Plato, Nicholas of Cusa, Johannes Kepler, or Bernhard Riemann, all truly great scientists are theologians in the matter of fundamental scientific principles. Such is to be recognized in Albert Einstein in his later works, and in Academician V.I. Vernadsky. The method of thinking which inspires them is always a reflection of the ancient notion of *dynamis* on which Leibniz premised that concept of modern *dynamics* brought to its richer apprehension by Bernhard Riemann.

Such is the case of the paradox of human scientific reason.

In the case of human reason’s achievements on behalf of mankind, when we are confronted with the evidence of truly creative modes of reasoning, as Shelley points toward this in the concluding paragraph of his *A Defence of Poetry*, we encounter a phenomenon, thus, which we know, in one sense, as cognitive creative mentation in the individual. However, the action which that thinking by the individual extends into the form of intended changes in the way of thinking in society, and across the boundaries of death, into other parts of society, and coming generations, should warn us that the evidence thus presented to us has a more universal effect than a change in the behavior of that isolated individual. Thus, such creativity, as typified by the discovery of a universal physical principle, belongs ontologically to the domain of social dynamics, *universal* social dynamics. It thus becomes, as it grows, in effect, into an existent object among generations of mortals. It is, thus, the innermost part of the human personality which is efficiently immortal. It transmits its effect by a kind of mode of resonance, such that even when the idea originates within an individual mind, it reflects the dynamic action which that mind inhabits at that time; because of that arrangement, that aspect of the individual is itself immortal, and that dynamically.

Thus, the essential action of the thinking individual is the achievement of immortality of the self through that medium of action within and upon the immortal universe. It is probably the case, as I would attest from experience, that that sense of immortality, as we can readily recognize that in Shelley himself, and in his appreciation of John Keats, works exactly as

Shelley himself describes this experience of his, in the concluding paragraph of his *A Defence of Poetry*.