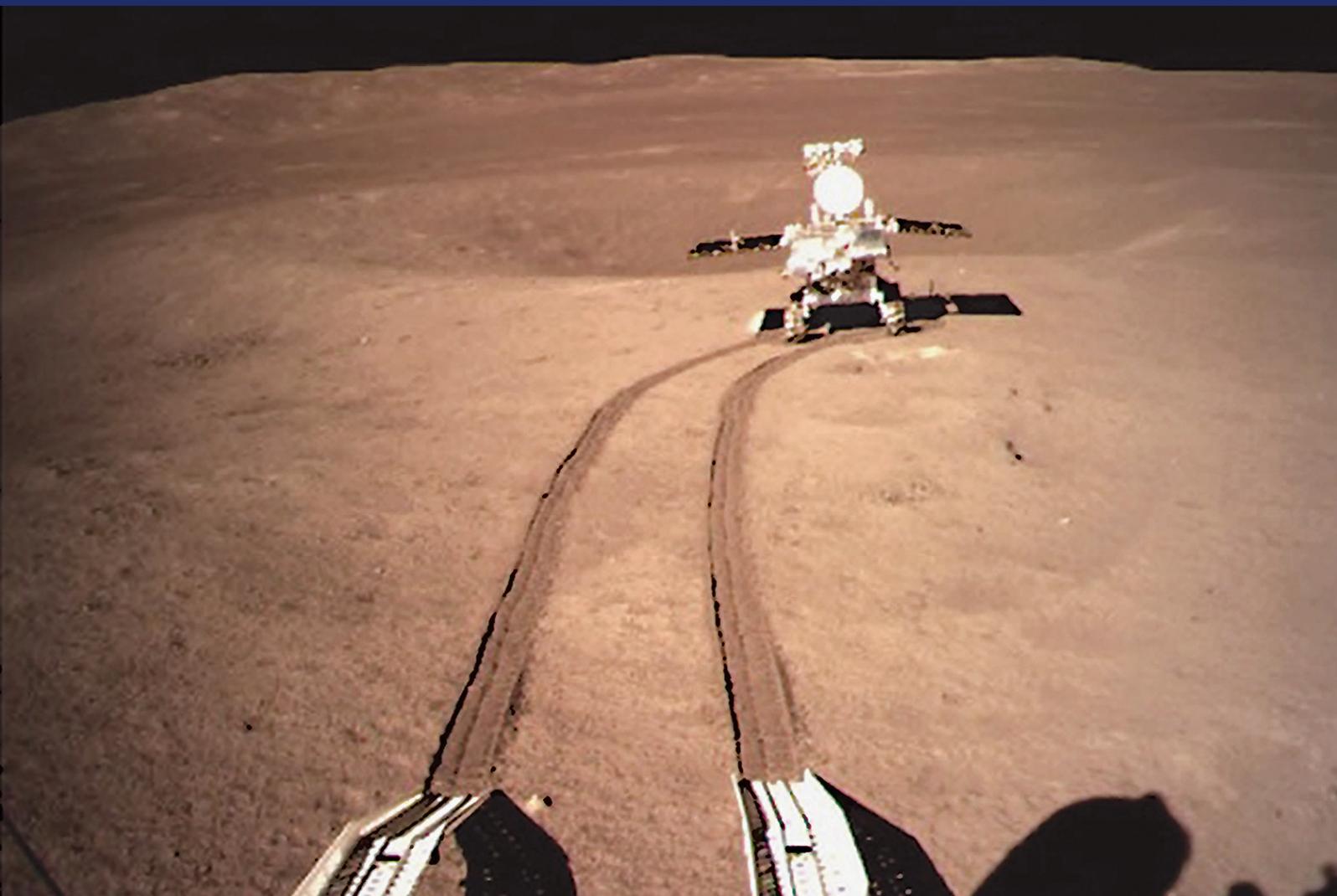


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## The Return to the Moon After Two Lost Generations





Editor-in-Chief and Founder:

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Webmaster: *John Sigerson*

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(571) 293-0935

**European Headquarters:** E.I.R. GmbH, Postfach

Bahnstrasse 9a, D-65205, Wiesbaden, Germany

Tel: 49-611-73650

Homepage: <http://www.eir.de>

e-mail: [info@eir.de](mailto:info@eir.de)

Director: Georg Neudecker

**Montreal, Canada:** 514-461-1557

[eir@eircanada.ca](mailto:eir@eircanada.ca)

**Denmark:** EIR - Danmark, Sankt Knuds Vej 11,

basement left, DK-1903 Frederiksberg, Denmark.

Tel.: +45 35 43 60 40, Fax: +45 35 43 87 57. e-mail:

[eirdk@hotmail.com](mailto:eirdk@hotmail.com).

**Mexico City:** EIR, Sor Juana Inés de la Cruz 242-2

Col. Agricultura C.P. 11360

Delegación M. Hidalgo, México D.F.

Tel. (5525) 5318-2301

[eirmexico@gmail.com](mailto:eirmexico@gmail.com)

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# The Return to the Moon After Two Lost Generations

## **EDITORIAL**

# New Year's Message from Helga Zepp-LaRouche

*This is an edited transcript of a Jan. 1 [video message](#) from Helga Zepp-LaRouche, the founder and President of the Schiller Institute.*

I wish you all a very good New Year! Some of you may remember that exactly one year ago I defined the overcoming of geopolitics as the most important goal for 2018, and many of you probably thought, “Geopolitics, what is that? Is that really the most pressing issue?” Geopolitics was the source of two world wars, and that is why I stated so strongly that we could not continue with such a confrontational policy in the age of thermonuclear weapons.

Now, see what has happened in the year that has just ended. We saw an enormous number of political breakthroughs globally. Many regions of the world are in the process of overcoming geopolitics.

Just to name a few: The historic summit between President Trump and President Kim Jong-un in Singapore is leading to a process of rapprochement between the two Koreas. Japan began, suddenly, to work with China on the Belt and Road Initiative. After the very important summit in Wuhan between President Xi Jinping and Prime Minister Narendra Modi, China and India began to work together on projects. After the election of a new prime

minister in Pakistan, there is reason for careful optimism for the relationship between Pakistan and India. Then, let us look at Africa. In the Horn of Africa, several nations not having any relations, or only negative ones—Somalia, Djibouti, Eritrea, Ethiopia—have established diplomatic relations and are now working together on infrastructure. The entire African continent is filled with a spirit of optimism because of what



White House/Shealah Craighead

*President Trump with U.S. troops at Ramstein Air Force Base in Germany on Dec. 26, 2018.*

China has been doing there, which is now also attracting investments from many other countries from around the world.

But maybe the most interesting of all these developments is the announcement by President Trump that the United States is going to pull its troops out of Syria. This has created a quite ironical situation. Many of the Europeans and others who were screaming, “Ami

[Americans] go home!” just a few years ago, are now saying the United States must stay, or it will lead to chaos, to rewarding Russian President Putin, and Iran’s Rouhani, and so forth.

Now, think about it: Isn’t it better that Trump is making good on his election promise to end the permanent wars of his predecessors? He has promised the same for Afghanistan. After futile efforts to solve the situation in Afghanistan militarily, there is now an intention to solve it through negotiation, to involve all of Afghanistan’s large neighbors. Isn’t it better to go in this direction, trying to seek solutions through diplomacy and negotiation?

Some forces, certainly the British government among others, are resolutely sticking to the old geopolitical paradigm. Look at the recent [report](#) by the House of Lords, “U.K. Foreign Policy in a Shifting World Order.” That report is a masterpiece of geopolitics of the worst kind. The EU and, unfortunately, also the Berlin government, are both continuing to insist that the so-called “rules-based order” must be maintained.

All these objections are not very convincing. I urge you to examine this yourself. Which way is better? Read the New Year’s message of President Xi Jinping of China, which is a very proud listing of all the incredibly many accomplishments China has made this past year—all the industrial parks, the beautiful bridge between Macao, Zhuhai, and Hong Kong, and many other projects. China has lifted 10 million people out of poverty in this past year alone and is confident that it will lift all its remaining poor out of poverty by the

year 2020. This is a message of somebody who cares about his country and his people. Please read Xi’s [message](#) yourself, especially because of all the anti-China hysteria going on. Now, compare that New Year’s message with the [one](#) of German Chancellor Angela Merkel, who finds it important to stress as the most important occurrence of 2018 the announcement of her own resignation. She otherwise presents just more of the same failed policies without any vision whatsoever.

The world will face dramatic changes in this coming year, 2019. It is not yet clear what these changes will be. It is clear, however, that the old order is disintegrating, and a new order is emerging. But what exactly the parameters of this new order, what the principles will be, is not yet decided. Let us look at the concepts of previous great thinkers of humanity, who had a clear view of our one humanity, who had a vision of the harmonious development of all nations. Let us look at these thinkers whom we can ask for advice—the great Chinese thinker Confucius, Nicholas of Cusa, Gottfried Wilhelm Leibniz, and, America’s John Quincy Adams, just to name a few.

So, I think humanity is at an historic branching point. We can shape a new era of civilization in which we overcome geopolitics for good. I ask all you to work with the Schiller Institute, so that we can win over the remaining nations that are still sticking to the old ways—especially the European nations, and get more of the peoples and nations of the world to join the New Paradigm. We can make a fantastic future if we work together.

# What the World Needs Now

by Tony Papert

Jan. 3—As all the world now knows, Chang'e-4 touched down yesterday on the far side of the Moon for mankind's first-ever controlled landing there. As Lyndon LaRouche had correctly forecast even before the Chang'e-4 mission was formally announced in December 2015, a new era has opened for mankind.

Ouyang Ziyuan, the chief scientist and father of the Chinese Lunar Exploration Program, was interviewed today on CGTN television, and discussed his discovery that the Moon's Helium-3 will provide fusion energy to power Mankind for the next 10,000 years. At the same moment, the great promise the Lunar Far Side offers for low-frequency radio astronomy—of which LaRouche's science team has written—was already being exploited as early as yesterday, when the Chinese lunar lander was coupled with their Queqiao relay satellite, to make a compound low-frequency radio telescope reaching out far beyond our galaxy, while sheltered by the body of the Moon from the Earth's interference.

Meanwhile, the Lunar lander is measuring the local water concentration, towards a future manned landing.

But still more important is Chang'e-4's role in our species' historic progress from Earth, and out into the Solar System, the Galaxy

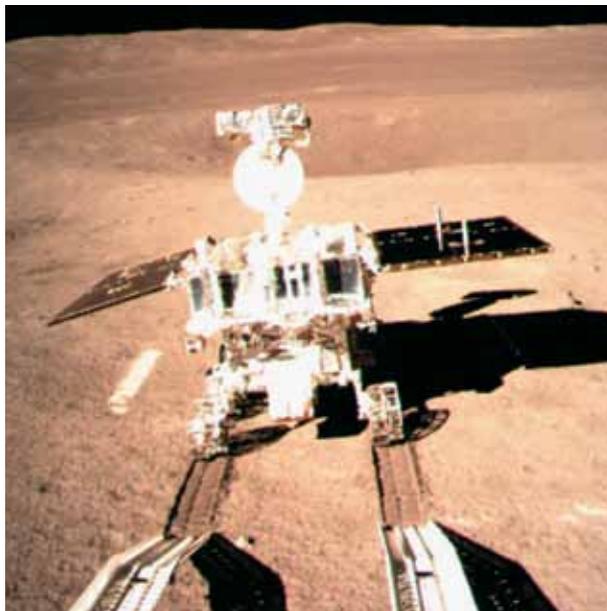
and beyond, which was begun, against tremendous odds, by heroic Germans, Russians and Americans of the 20th century. But then it was cruelly shut down by Britain after the American manned Moon landings of 1969-72. Now at last, that great mission of humanity has finally been resumed again after two lost generations.

We recall the words of the great Soviet space scientist Sergei Pavlovich Korolyov to his team at Baikonur on Oct. 4, 1957, when Sputnik was successfully launched: “The dreams of the best sons of humanity have been realized—the assault on space has begun.”

A new era has opened, *If* . . . If and only if we properly take advantage of it. If, instead, we miss this last chance, mankind can fall back into the darkness of the last century or worse.

On the same day that Chang'e-4 landed, January 2, Donald Trump enraged the British foe with a televised hour-and-a-half Cabinet [meeting](#), in which he placed responsibility for peace both in Afghanistan and Syria, on the cooperation, with U.S. support, between those countries and their neighbors, including India, Pakistan and Russia in the case of Afghanistan; and Turkey and Russia, perhaps with Iran, in the case of Syria. The President said that the Soviet Union had been right to intervene militarily into Afghanistan,

## EDITORIAL



China's Yutu-2 rover tracks away from the Chang'e-4 lander on the far side of the Moon.

CNSA

from which terrorism was flooding into their country. As Helga Zepp-LaRouche has noted, President Trump is opening the door to a Westphalian solution for Southwest Asia—one which Henry Kissinger, speaking for his British masters, excludes. Those British masters will never forgive Donald Trump for this as long as he lives.

But, once again, what is supremely important about this great change is not the facts in themselves (still less the commentary about them), but rather what *we* do with them—or fail to do.

The Jan. 4 *EIR*, which went out to subscribers Jan. 2, included a March 1998 speech by Lyndon LaRouche titled “Toward a New Bretton Woods.” He was speaking, among others, to officials and advisors of then-President Bill Clinton, and effectively to the President himself. After vividly pulling together the total idea of the New Bretton Woods System from its elements, including such features as the Machine-Tool Principle and the Eurasian Land-Bridge, LaRouche said, in effect, “You respond that those are all good proposals. Indeed, you admit that they are beau-

tiful ideas. But, you say, they are ‘not in the cards.’ Well, let me say something to you: Lead or get out of the way!”

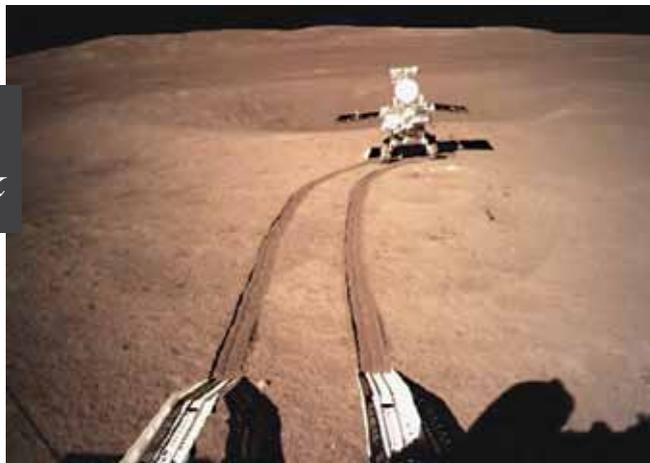
Dennis Speed’s article in the same issue opens with what he says is a Chinese proverb, very much to the same effect. “Those who say it is impossible, should not interrupt those who are doing it.”

In his referenced speech, LaRouche tells the unvarnished truth about what is leadership and what is not. Is the leader the one who painstakingly reads and rereads the instruments (or the sacrifices) to minutely weigh the odds of success or failure? Will Trump be impeached? Will this or that terrible thing happen (i.e., to me)? Or, does he boldly mark out the previously unseen critical path, and throw everything into the scales for victory, as von Schlieffen did? Fight relentlessly to turn the flank, sparing nothing, even if—as is often the case—the future progress of the war cannot yet be foreseen. This is the way we must fight on many fronts for LaRouche’s New Bretton Woods.

Why worry? Each of us is going to die anyway.

## Cover This Week

*First-ever landing on the lunar far side, Jan. 2. Here, the Yutu-2 rover of China's Chang'e-4 mission goes to work.*



CNSA

## THE RETURN TO THE MOON AFTER TWO LOST GENERATIONS

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## I. On the Frontiers of Science

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# China Takes a Decisive Lead in Space

by Kesha Rogers

The Moon is so rich in helium-3, that it could solve humanity's energy demand for around 10,000 years at least. Helium-3 is an ideal fuel for nuclear fusion power, the next generation of nuclear power.

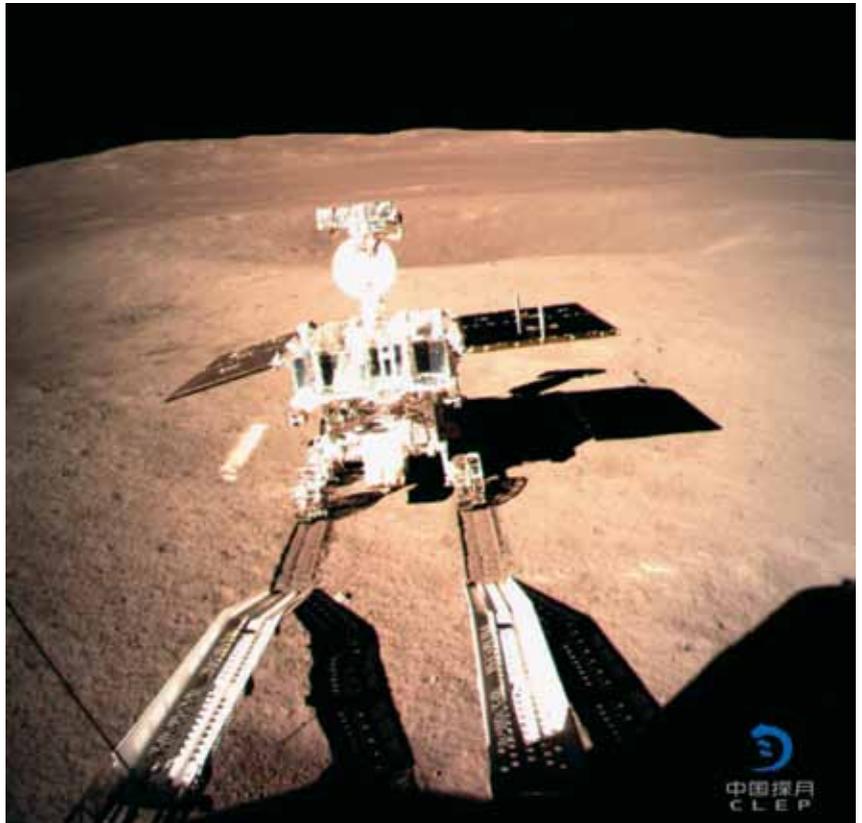
—Professor Ouyang Ziyuan,  
chief scientist of China's Lunar  
Exploration Program,  
the Chang'e Project

Jan. 8—On Thursday, January 3, Beijing time, China became the first nation to ever attempt—and accomplish—a soft landing on the far side of the Moon. This achievement has far greater implications than what has been reported in almost all media coverage.

I will begin with a quote from Lyndon LaRouche, because it is urgent to properly situate this current Chinese accomplishment, and the point made by Mr. LaRouche will define the larger context in which to view all of what is discussed below.

After China launched its first rover to the lunar surface, about five years ago, in 2013, the first Yutu rover, this is what LaRouche had to say about the implications:

We know that the greatest power in the solar system accessible to us now, the greatest power available to mankind in the solar system now is what? It's the Moon. It's the helium-3 on the Moon. That's the greatest power now. What if we should decide to take this great power, which is there, the Moon-power? It's more powerful than anything on Earth. The Moon is more pow-



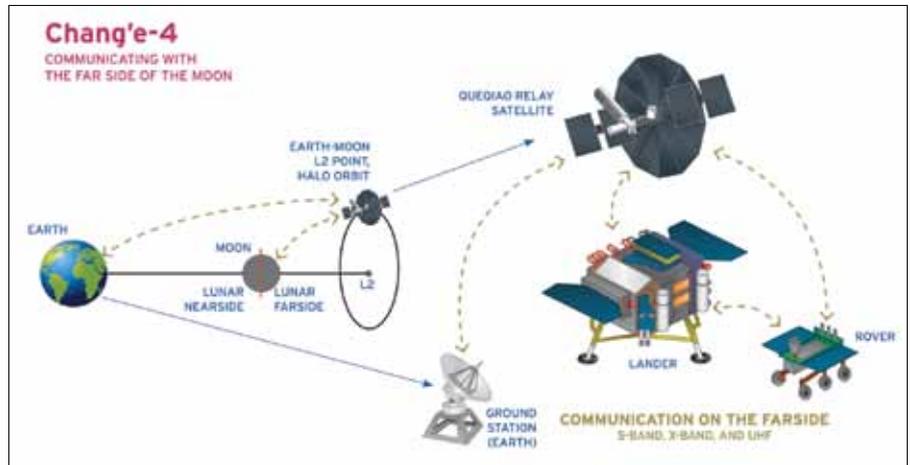
China's Yutu-2 rover makes history as it rolls onto the Moon's far side shortly after touchdown, Jan. 2, 2019. CNSA

erful than anything on Earth, and China's working with the Moon.

If you think about this, this is what we have identified in the economic laws of Lyndon LaRouche around his fourth law for the advancement of a fusion science-driver economy. As LaRouche makes very clear, the economic development of the Moon, in conjunction with a crash program for fusion power, would be the most powerful science-driver program for all of humanity.

What the Chinese have done, in their own way, is to

respond to that mission and vision, as outlined by Lyndon LaRouche. This is not just something that has been done in the recent period, but it has been an ongoing feature of the opening up of China for the past forty years. It occurs within the context of LaRouche's fight to free the United States and the rest of the world from British geopolitics, i.e., the pitting of nation against nation—and to initiate a new paradigm of growth and economic scientific progress. This is what we see going on right now.



CC/Loren Roberts for the Planetary Society

*Schematic showing how China's Chang'e-4 lander and Yutu-2 rover communicate with Earth from the far side of the Moon via the Queqiao relay satellite.*

### Rabbits on the Moon

China's Chang'e-4 lunar farside mission landed on the Aitken Basin's von Kármán crater, near the Moon's South Pole. The basin is massive in size, estimated to be about 2,400 km across and 13 km deep. The Chang'e-4 lunar mission has two elements to it: a relay satellite, Queqiao, and a lunar probe consisting of a lander and a rover. The rover, which has now separated from the lander and is now roving around, is named the Yutu-2. The first Chinese rover that landed on the Moon, just about five years ago, was the Yutu rover and this one is called Yutu 2. Yutu means "Jade Rabbit."

The first pictures from the Chang'e-4 probe have now been sent back to Earth, made possible because of the earlier launch and deployment of the Queqiao relay satellite. The Queqiao (or Magpie Bridge) relay satellite was launched in May 2018. Queqiao entered its current orbit on June 14, 2018. It is the world's first communication satellite operating on the far side of the Moon, in what is called a halo orbit, at the Earth-Moon L2 Lagrange point. There is no direct line of sight from Earth to the far side of the Moon, and direct radio communication is therefore not possible. This satellite makes possible communication between the Earth and the Moon's far side.

Chang'e-4 has a number of instruments on the lander and rover for performing a variety of studies, and many of these instruments have come from other countries, particularly a number of European countries, including the Netherlands, Sweden, and Germany. They will study the mineral deposits and the shallow lunar surface, the structure of the Moon's far side. They are also going to perform low frequency radio astronomi-

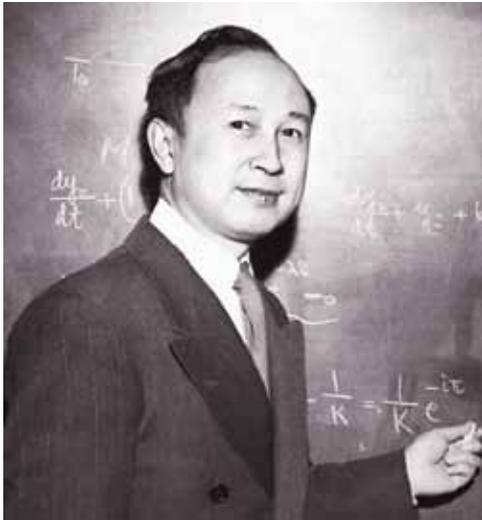
cal observations, and there are instruments to test for the presence of water on the far side of the Moon.

Among the instruments on this mission is a spectrometer that will be used to test for plasma that bombards the Moon. China will be looking for the rare isotope helium-3, which is known to exist on the Moon. Professor Ouyang Ziyuan, the chief scientist of the Chinese Lunar Exploration Program (CLEP), has said that "the Moon is so rich in He-3, that it could "solve humanity's energy demand for around 10,000 years at least." Ouyang has called He-3 "an ideal fuel for nuclear fusion power, the next generation of nuclear power."

### How Did China Get There?

Chinese involvement in understanding the importance of a space program began in 1935, when a 24-year-old Chinese student, Qian Xuesen, came to the United States on a scholarship to MIT. He then continued his studies, receiving his doctorate, at Cal Tech. There he studied under the great Hungarian-American aerodynamicist and aerophysicist Theodore von Kármán. For those of you who have been following the progress of the Chang'e-4 mission, this name might sound familiar, as the name of unique place Chang'e-4 has landed is called the von Kármán crater.

By 1943, Qian became one of the founders, with von Kármán, of what became the Jet Propulsion Laboratory (JPL) at Cal Tech. He was one of von Kármán's closest collaborators and von Kármán referred to him as an undisputed genius. As you may know, JPL has been instrumental in much of the scientific work of the American space program. During World War II, Qian began



*Qian Xuesen teaching at Caltech, before returning to China.*



NASA JPL

*Theodore Von Kármán (center) at the Jet Propulsion Laboratory in 1940.*

groundbreaking work on ballistics for the U.S. military and was commissioned as a colonel in the U.S. Army.

Despite his war-time service to America, after the war, during the years of the “red scare,” Qian was accused of being a Communist sympathizer by J. Edgar Hoover’s FBI, and in 1955, he was driven out of the United States. So, you had one of the greatest scientists, rocket engineers and individuals who has ever worked in the U.S. space program, forcibly expelled from this country and sent back to China. In China, he became a prominent scientist, working on the space program and its ballistic missile systems, until he died at the age of 97 in 2009.

In 1979, seven years after the last Americans set foot on the Moon, China’s leader Deng Xiaoping paid an extraordinary visit to the United States, as part of what Deng called the “Opening up of China.” It’s important to think about this history. Deng and his wife were invited to the Johnson NASA Space Center in Houston, where they were given a tour. Deng was able to ride in a lunar module simulator with astronaut Fred Hayes. He was completely transformed by this program, by our space program.

### **British Geopolitics: Enemy of Cooperation**

Despite the recent intensive efforts of U.S. President Donald Trump and Chinese President Xi Jinping to improve U.S.-Chinese relations, fools in the U.S. Congress and other British puppets continue to sabotage collaboration between

America and China in space exploration.

The U.S. space program led the way, going back more than forty years, in being the first nation to send human beings to the surface of the Moon, coming in peace for all of mankind. China has now resurrected that universal mission, as originally set forth by John F. Kennedy.



NASA

*Deng Xiaoping (center foreground) and his wife Zhuo Lin, being briefed by NASA Johnson Space Center Director Christopher Kraft, Feb. 2, 1979.*

China launched its first satellite into space on April 24, 1970. On the 46th anniversary of that event, April 24, 2016, China designated April 24th its first national Space Day. On that occasion, Chinese President Xi Jinping called on scientists and engineers to make China a leader in space exploration, to “seize the strategic opportunity and keep innovating to make a greater contribution to the country’s overall growth and the welfare of humankind.” He added, “Becoming an aerospace power has always been a dream that we have been striving for.” That dream has now become a reality, as China has now taken leadership in space.

I want you to think about all of this. Where is the United States going? Rather than an outpouring of enthusiasm greeting the success of Chang’e-4, or proposals for the United States to cooperate with China in this “return to the Moon,” Congress and the news media are targeting China, as well as Russia, as strategic enemies of the United States, demanding that we break the few ties of collaboration we have, that we refuse altogether to work with these nations in space exploration and settlement. That is what is being discussed right now, and that is what occurred already, back in the 1950s, when Qian Xuesen was deported back to China.

I want to make that point very clear: What has happened with this very successful mission of the Chang’e-4 lander is not just an event in and of itself. It’s not just that China did something for China; this is a breakthrough for all of humanity. China is following a path coherent with the conception of the great space pioneer Krafft Ehricke, who was a dear friend of Lyndon and Helga LaRouche. Ehricke proposed that it was mankind’s destiny to advance beyond any so-called limitations to growth, that there are no limitations to growth. This is the idea Krafft Ehricke always presented in his writings on lunar settlement and industrial development—what he called “The Extraterrestrial Imperative.”

The Moon is a “gold mine” and a breakthrough for the advancement of all of mankind. Krafft Ehricke demonstrated that space exploration is not just about space itself; it’s about the breaking free of the limitations and bounds of Earth, a “closed world system,” where nations with borders fight against each other, and where poverty suffocates and snuffs out so many lives—that all these things can be overcome by advancing mankind into what would be known as an “open



Convair/General Dynamics Astronautics Atlas Collection

*Krafft Ehricke discussing his design for the Experimental Manned Space Station, Sept. 19, 1958.*

world system,” where we leave the limits and bounds of the Earth and advance mankind scientifically and technologically.

*This* is what China is responding to. In landing a probe on the far side of the Moon, China has sent out a shock, a Chang’e shock, if you will, or, a new “Sputnik shock.” We can’t just sit back and get mad, or say with negative pessimism and cynicism, “Well, you know, if the Chinese are doing it, it’s no good.” China has raised the bar for mankind. The United States has to respond accordingly and adequately right now. The New Paradigm must replace geopolitics.

### **Let Optimism Reign**

This goes back to exactly what Lyndon LaRouche stated in the quote I cited at the beginning of this article about the Moon being the greatest power in our solar system. The mentally shallow Barack Obama once publicly dismissed the proposal for returning to the Moon with the foolish and dangerous adolescent quip, “Been there, done that.” Better that he should have consulted the scientists of the Apollo missions. China’s intention is not new. The leaders of the Apollo program understood the necessity of having lunar settlements not just to be there and raise our colors, but that getting there and being there drives advances and breakthroughs in mankind’s science and technologies in every field.

The termination of America’s lunar mission after Apollo 17 in December 1972 was a great loss for humanity, but China has taken up the torch forty years later.

In a recent interview with *Politico*, Apollo 8 Commander Frank Borman stressed that since the termination of the Apollo program, “NASA hasn’t been able to define a consistent mission.” Another astronaut, the geologist on the Apollo 17 program, Harrison Schmitt, has written a book called *Return to the Moon*. In it, Schmitt emphasizes the importance of lunar settlements and the development and industrialization of the Moon for mining of helium-3. This was the Apollo perspective; it was to be an economic breakthrough for the advancement of all mankind.

This is exactly the present view of China. They do not view Chang’e-4 as a narrow, single program. This really has to be looked at within the larger context of the “Opening Up” of China. What’s happened in China—one of the poorest countries on the planet—since Deng’s visit to the United States and NASA’s Space Center forty years ago? Over 700 million people no longer live out their lives in conditions of abject poverty. That is not something that “just happens.”

That is the result of carrying out a long-term vision—a mission intention—in the same way the United States, under the vision and mission of President John F. Kennedy, advanced and became a powerful economic force in the world with our space program. There wasn’t a separate program only for our astronauts and rocket scientists; it was a unifying force for the progress of the entire nation. This is what you see going on right now with China, because it has that vision; it’s a mission that is going to advance the whole of mankind.

The rapid growth of the Chinese space program and its historic mission to the lunar farside was not done without robust international cooperation and recognition of its effects on the whole of humanity. The director of International Cooperation at China’s National Space Administration, Xu Yansong, stated,

We have wide participation from the interna-

tional community. The dosimeter is from Germany, the neutron detector is from Sweden, and a number of other instruments are from Saudi Arabia, as well as the Netherlands. We have support from the European Space Agency and we are also cooperating with NASA on using the lunar reconnaissance orbiter from NASA to observe changes in the landing process. So we’ve been closely cooperating with the international community, and certainly look forward to very fruitful scientific returns.

NASA administrator Jim Bridenstine issued a tweet praising the landing as an “impressive accomplishment.” But Bridenstine and others who have welcomed space cooperation with China and Russia, are now being targeted by the anti-Russia, anti-China geopolitical fanatics. Yet, as America falls further and further behind in the field of space exploration and achievements, one has to ask how much longer these tired “Cold War” tactics will work.

This is the time to be absolutely optimistic, because mankind is taking off in a way that you would never have imagined. Despite all of the pessimism, all of the imposed cultural decadence, what we see now is the potential for the emergence of a cultural renaissance and a “Moon renaissance.” This is what we have to demand here in the United States.

We can no longer accept being a culture of a “limits to growth” paradigm, a nation which accepts widespread poverty and an increasing rate of suicides and drug overdosing. Open Up! Join in with the New Paradigm. We have the resources right at our fingertips. We just have to go out there and capture them. We should be happy to take inspiration from what China is doing right now in advancing mankind, in fulfilling mankind’s extraterrestrial imperative. Let us join hands with China and other space-faring nations in this great project.

We are living in very exciting times!



*A path to tomorrow: China’s Yutu-2.*

CNSA

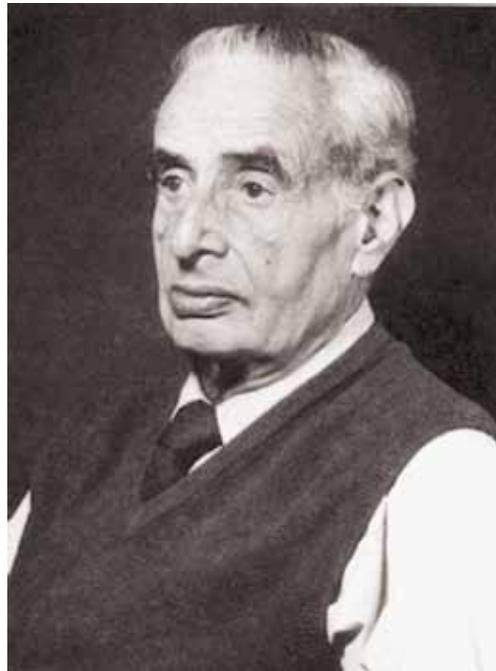
# Overthrowing the Mind-Body Dualism: Walter Elsasser's Major Contribution

by Dr. Ernest Schapiro

Jan. 7—Lyndon LaRouche's account—in his own major discovery—of the role of the subjectivity of science and the necessary role of metaphor, casts light on the groundbreaking work of Walter Elsasser (1904-1991).<sup>1</sup> A serious scientist is forced to recognize his own ignorance when faced with a paradox that his peers do not wish to recognize.

Elsasser, starting early in the 1930s, was convinced that mechanistic causal explanations, particularly involving mathematics, do not always apply to biology and social processes. His major discovery bears on the difference between living and non-living processes. Two experiences helped greatly to force the confrontation. First was his intense dissatisfaction with John von Neumann's book, *Mathematical Foundations of Quantum Mechanics* (1932) which asserted the completeness of quantum mechanics. The second was the discovery of his own creativity, which grew out of his own psychoanalysis and his insight into the role of the unconscious.

As a uniquely qualified expert in quantum theory and therefore in the principles bounding it, Elsasser



Walter Elsasser

began to increasingly recognize the domains in which it could *not* apply. Over a lengthy period of decades, he struggled for a better approach to understanding biological processes.

Finally, he developed a metaphor to resolve the problems of the widely-held, rife-with-paradox view, which he called “meta-physical,” that mind and living matter are separate substances with no direct relation between them. Elsasser's unexpected resolution was a metaphor for the creativity that could subsume the “unfathomable complexity” of both, which paradox made causal explanation in mathematical terms impossible. He came to the recognition that organisms, because they are not automata, are

creative even in simply morphologically reproducing themselves and in constructing their cerebral processes. In his 1987 book, *Reflections on a Theory of Organisms: Holism in Biology*, Elsasser specified that in so redefining creativity he was *not* referring to biological evolution.

In Lyndon LaRouche's unpublished 1985 preface to an intended translation by himself of Bernhard Riemann's *Zur Psychologie und Metaphysik*, he stressed his understanding of Riemann, and particularly Riemann's view that in the mind's expression in the form of what Riemann called “thought masses,” mind is as substantial as “matter.” LaRouche went further in the 1994 paper titled, “On LaRouche's Dis-

1. Harry Rubin. “Walter M. Elsasser, 1904-1991: A Biographical Memoir.” National Academies Press, 1995. Pp. 65. Available at <http://www.nasonline.org/publications/biographical-memoirs/memoir-pdfs/elsasser-walter.pdf>

covery,” in which he described how he (like Elsasser) was provoked to make his discovery in angered response to the information theory of Norbert Wiener and the equivalent radical positivism of von Neumann.

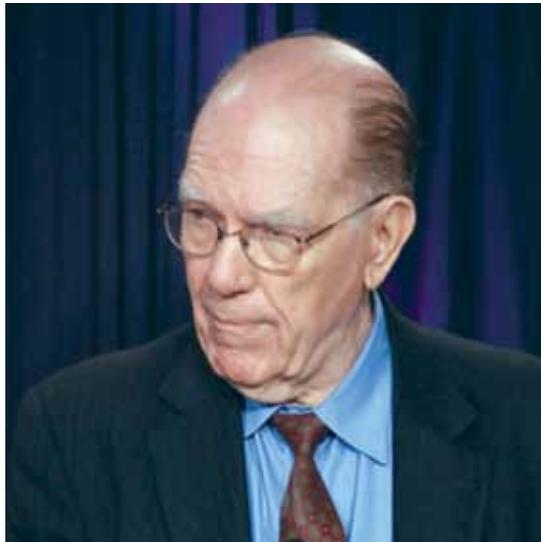
Elsasser arrived at conclusions equivalent to those of LaRouche, but by a very different route. Because the different routes imply a different way of hypothesizing, the implications of the developed ideas are somewhat different, because the hypotheses that generated the discoveries lead in particular directions.

LaRouche’s discoveries were derived from his study of physical economy, Vladimir Vernadsky, and classical culture, so that the individual organism is subsumed from a higher standpoint.

Elsasser started from the standpoint of physics and information theory. He found that living matter couldn’t be accounted for by our knowledge of chemistry and physics, even including quantum mechanics. He developed a negative proof from the standpoint of information theory that the sheer complexity of a single cell, that is, the number of ways it can be configured, is vastly larger than the number of living cells on the Earth. The cell, in replicating itself, therefore, can’t be following a script or program, but rather is choosing to select a particular path that will result in a cell very similar to itself but not identical.

### Life an Anomaly for Mechanistic Causality

The organism is thus not an automaton, contrary not only to Descartes but to all of today’s reductionist biology. Furthermore, organisms display a genetic stability over millions of years, as shown by the paleontological record, which violates the formulation of the second law of thermodynamics as applied to the genetic code



Lyndon LaRouche

NSIPS

by Claude Shannon<sup>2</sup> as a form of information. Elsasser writes,

In terms of the usual reasoning of the physicist, the information transfer observed in heredity has very often been described as a violation of the Second Law of thermodynamics . . . The mathematician Shannon showed that if a “message” (i.e. a set of symbols) is processed in a computer, or a communication system, any possible source of error will have a cumulative effect upon the mes-

sage; one can find a quantity (the entropy, a measure of disorder) which always increases, never decreases. This result is known as “Shannon’s Law” and is best taken as a parallel to the general statement of the statistical behavior underlying the Second Law of Thermodynamics.<sup>3</sup>



CC/DobriZhegllov

Claude Shannon

The faithfulness of replication over vast periods reflects the creative power of the organism. The genetic code serves a function of “operative symbolism,” that is, it is used by the creative power of the organism as a guide to reconstruct the whole. According to Elsasser,

This makes clear the relationship of the two processes of information transmission, that of homogeneous replication and that of heterogeneous reproduction. We are no longer forced to look for a purely particulate (or as the mathematician says, discrete) scheme of genetics to explain all

2. Claude Shannon (1916-2001). He was lauded by *Scientific American* magazine, among many others, as “the Founder of Information Theory.” Readers may consult his 1940 doctoral dissertation, “[An Algebra for Theoretical Genetics](#).”

3. Walter Elsasser. *Reflections on a Theory of Organisms: Holism in Biology*. Johns Hopkins University Press, 1987, p. 44.

heredity. We now interpret the discrete genetic message as a symbol of the complete reproductive process. Here a symbol is defined as an incomplete message, from which the organism can reconstruct a structure by the process of heterogeneous reproduction such that the final structure is similar to an ancestral structure. A machine would be totally unable to reconstruct information which was not present at an intermediate time. We have added the term “operative” to make clear that if we speak of “symbolism,” we do not have in mind any return to a dualistic philosophy.<sup>4</sup>



Gottfried Wilhelm Leibniz  
(1646-1716)

A further bold step was his discerning an equivalence between the physical replication of the morphology of the organism and the function of cerebral memory. The order of complexity of the processes, again, required by the central nervous system is so unfathomably vast as to preclude any specifiable mechanistic basis.

If one accepts Elsasser’s hypothesis of “operative symbolism,” it suggests that there are what Wolfgang Köhler (1887-1967) called memory traces in the brain. These “memory traces” are used to reconstruct an entire thought or gestalt. The Cartesian dualism between mind and matter is thereby discarded.<sup>5</sup>

I am reminded of Leibniz’s *New System of Nature and the Communication of Substances, as Well as the Union of Soul and Body* (1695) in which he presents us with an ordered series of his hypotheses, which began

4. Elsasser, *ibid.*, p. 45.

5. Wolfgang Köhler. *The Place of Value in a World of Facts*. New York: Liveright, 1938, 1966. Available at: <https://archive.org/details/placeofvalueinaw029252mbp/page/n7>

in the late 1670s with his groundbreaking hypothesis of “living force” and culminated in pre-established harmony. He says there:

I realized that the sole consideration of an extended mass did not suffice, and that we must emphasize the notion of force which is very intelligible despite its springing from metaphysics. It seemed to me also that the opinion of those who transform or degrade animals into pure machines, though a possible one apparently, is against appearances and even against the order of things.<sup>6</sup>

Leibniz hypothesized that the universe is composed of monads, each possessing a spontaneous impulse to act, but shaped by its perception of other monads, implying the freedom of the highest monads, and the spontaneity of all monads as implied by Elsasser.<sup>7</sup>



Rudolph Schoenheimer

### Multilevel Space-Time of the Organism

Elsasser proposed that the exercise of the creative selection of pathways is favored by instability; in particular, he cited the self-organizing of plasmas when experiencing instabilities. He suggested that electric charges are an obvious source of instability in the organism. This calls to mind the many anomalous phenomena which reveal—from the intracellular and molecular level up to at least the organ level—that the organism is under pressure to continually recreate itself.

We find the pressure on the organism to recreate itself in the original observations of Rudolph Schoenheimer (1898-1941), presented in his posthumously published book, *The Dynamic State of Body Constitu-*

6. Philip P. Wiener. *Leibniz: Selections*. Scribner, 1951, p. 106.

7. *Ibid.*, p. 533.



Many anomalous phenomena reveal—from the intracellular and molecular level up to at least the organ level—that the organism is under pressure to continually recreate itself. Pictured here is a time-lapse photo of an Amaryllis bud developing and opening into a flower:

ents (1942). Schoenheimer’s discoveries were never accounted for and rarely discussed.

He was one of the first biochemists to have access to isotopes of hydrogen, carbon, and nitrogen. Using those isotopes, he was able to begin to explore intermediary metabolic steps, hitherto a black box. He fed rats isotopically labeled fats and sampled their body fats after several days, finding that their body fat deposits were heavily isotope-labeled in most of their different kinds of fat molecules. This was so despite a caloric intake designed to maintain a steady body weight. To me this suggests a lability of the chemical bonds and a high energy-flux density. Such an increase in lability is indicated by the observation that low-energy transmutation of elements has been observed in biology, without any evidence of release of energy as would be expected in a nuclear reaction.<sup>8</sup>

On a higher level, within the organelles of the cell there is a similarly high rate of flux only discovered in recent years, in the form of autophagy. The cell continually breaks down and recycles the material of its organelles, such as the mitochondria. In addition to a basal rate of this process of autophagy (self-eating), it increases greatly under starvation conditions as an

8. Ernest Schapiro, “Are Nuclear Processes in Biology Unique?” *21st Century Science & Technology*, Spring-Summer 2012.

energy source, and in disease processes.

On a still higher tissue and organ level, is the phenomenon of the trophic function of lymphoid elements. The small lymphocyte is the most mobile cell in the body and spends its short life span migrating from its site of formation in the lymph nodes, spleen, thymus or bone marrow into the tissues, where it donates its energy-dense protein and nuclear material, especially in tissues in which there is a rapid turnover, such as the lining of the small intestine or the uterus or a lymph node. The lymphocyte has been seen microscopically penetrating epithelial cells and then decomposing, a process called emperipolesis (to wander about inside).<sup>9</sup>

These multilevel instances of rapid flux and turnover from molecular to cellular to organ level, are compatible with Vernadsky’s biogenic migration of atoms, and the progressive increase in flow of materials in a healthy economy driven by increases in energy-flux density and human creativity.<sup>10</sup> One can ask how the

9. Jack Shields, *The Trophic Function of Lymphoid Elements*. Thomas, 1972.

10. For a discussion of biogenic migration of atoms, see Benjamin Deniston, “Biospheric Energy-Flux Density,” *21st Century Science & Technology*, Spring 2013, p. 22, available at [https://21sci-tech.com/Articles\\_2013/Spring\\_2013/Biospheric\\_EFD.pdf](https://21sci-tech.com/Articles_2013/Spring_2013/Biospheric_EFD.pdf) Further discussion of this topic can be found in Andrey Lapo, *Traces of Bygone Biospheres*,

physical space-time of the organism is so structured as to facilitate these kinds of processes of rapid molecular turnover.

### Inverse Relationship of Mass to Cycle Speed

In the placental mammals, there is an inverse relationship of mass to the speed of cyclical processes, across an extraordinarily wide range of cycles of different duration, such as nerve activation and life span. There is also an inverse relationship of mass to metabolic rate. The product of these two relationships gives a number for the calories expended per gram of tissue during the given cycle. One such cycle is lifetime. This can be seen as energy-flux density or as “action” per unit of mass, the “action” being the energy expended in a process, summed over time, which is an invariant in evolution, being remarkably similar in a wide range of placental mammals.

In the course of elaborating the implications of Vernadsky’s ideas about space-time in biology, Benjamin Deniston has been the first to relate the above empirically known relationships to a relativistic principle of biological space-time. I see this as a fundamental discovery.<sup>11</sup> Remarkably, action is invariant in special relativity, unlike energy. It is relevant that Planck’s constant is in units of action.

This phenomenon can be described as follows. The lengths of a wide range of biological cycles, over many orders of magnitude, scale as the one-fourth power of the mass (an inverse relationship). The metabolic rates, also over a comparably wide range, scale as the three-quarter power of the mass (also an inverse relationship, because the power is again less than one). Multiplying these two relationships gives energy times time, divided by mass to the first power, yielding so many kilowatt-hours per kilogram of body mass. In the case of the lifetime, viewed as a cycle, one gets energy (kilowatts) expended per unit of mass over a lifetime. This number is remarkably constant

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Synergetic Press, 1988, p. 139 and *passim*, and in *Geochemistry and the Biosphere: Essays by Vladimir I. Vernadsky*, edited by Frank Salisbury, Santa Fe, New Mexico: Synergetic Press, 2007.

11. Benjamin Deniston. “Time for a Solar Noösphere,” *Executive Intelligence Review*, Nov. 28, 2014; Vol. 43, No. 49, pp. 43-49. For a detailed discussion of these scaling relationships, see S.L. Linstedt and W.A. Calder, III. “Body Size, Physiologic Time, and Longevity of Homeothermic Animals,” *Quarterly Review of Biology* Vol. 56, No. 1 (March 1981), pp. 1-16. The article neither takes the product of the two scaling relationships nor arrives at a concept equivalent to energy-flux density.

for the placental mammals from the mouse to the elephant.<sup>12</sup>

### Universal Principles or Empiricism?

It is remarkable that until the work of Lyndon H. LaRouche and his associate, Deniston, no one apparently had thought of relativity as extending from the original application by Albert Einstein to the domains of respectively physical economy and biological evolution, the latter also subsuming the individual organism. This is because the relevance of the work of Bernhard Riemann to these domains has been overlooked and considered of interest only to specialists in general relativity. More broadly, it is because the Platonic notion of universal physical principles has given way to empiricism, including its extreme guise as information theory. LaRouche has seen the Riemannian manifold of “dimensions” as the metaphor for interacting universal physical principles. He discusses relativistic physical economics and economic time in his 2009 book-length article in *Executive Intelligence Review*, “[Economics as History](#).”

### Concept of Action as a Measure

Physicist Martin Ruderfer addresses the question, why “action” is so crucial in a 1949 groundbreaking article in *Science* magazine, “The Concept of Action as a Measure of Living Phenomena.” [Ruderfer says](#),

There are two universal properties of living things upon which such a measuring rod [for living things —ES] could be based. First, every living thing absorbs and emits energy throughout its life span. Second, every living thing has a finite life span. These properties are common to all living substances from the single cell to the largest animal. The desideratum is therefore a measure which quantitatively unites these two properties, contains no other components, and is capable of being precisely determined.

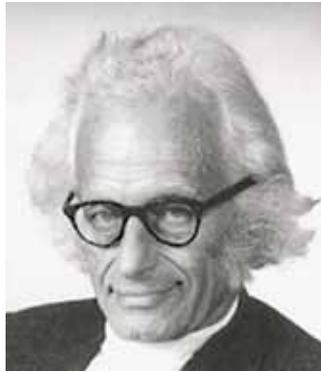
Since the units of these properties are respectively energy and time, the physical concept of action suggests itself, for action is the product of energy and time. This choice is not adventitious, because action is one of the most important properties of inert matter. The macroscopic properties of inert things—gravitation, electro-

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12. G.J. Hyland. *Herbert Fröhlich: A Physicist Ahead of His Time*. Springer, 2015.



Louis Pasteur



Herbert Fröhlich



Wolfgang Köhler

magnetic propagation, and mechanics—have been summed up in a single law, the Principle of Least Action; with the exception of entropy, action is the only invariant property that has survived the relativity theory; the curvature of space time is determined by the action at each point in the universe; and finally, the most important quantity in atomic physics is a quantum of action—Planck’s constant,  $h$ . Nature’s emphasis on action strongly suggests it as a universal quantitative measure of life.

Ruderfer showed that, despite their difference in life expectancy, men and women expend the same quantity of action in their lifetimes. Based on his 1949 results cited above, Ruderfer concluded that “the members of each living species may be associated with a finite value of action within narrow limits.”

### In the Footsteps of Louis Pasteur

The fact that physicists other than Elsasser have made such unique contributions to biology suggests to me that what is holding back progress in medicine and biology is the reductionist axiomatics predominating in those domains. A gifted outsider can leap over the group-think in pursuit of a challenging insight or observation. One can think of Louis Pasteur, whose entry point into biology and medicine was his highly original discovery that only living processes can produce a net yield of optically active molecules—molecules that he first studied for his doctoral dissertation as a chemist,

then examining the work of the leading physicists of his time.

Herbert Fröhlich, who had done outstanding work in solid state physics, saw that his knowledge of dielectrics was applicable to the cell membrane potential and went on to elaborate a new approach to the role of electrodynamics in biology.<sup>13</sup> Fritz-Albert Popp, who participated in the Jan. 8, 1989 Fusion Energy Forum seminar in Germany on The Implications of Negative Curvature in Physics and Biology, is a physicist who has done pioneering work on the crucial role of biophotons.<sup>14</sup>

Wolfgang Köhler, who was trained as a physicist and was an associate of Max Planck, developed the idea that the laws of physics are relevant to the behavior of “traces” in the brain. He first proposed that brain processes are isomorphic to the “contexts” they represent, that is, there is a discernible relationship between the mental process and the physical phenomena giving rise to it. The phenomena of the creation of visual gestalts is an example of the enormous creativity of the nervous system.<sup>15</sup>

A fundamentally new approach to the education of

13. G.J. Hyland. *Herbert Fröhlich: A Physicist Ahead of His Time*. Springer, 2015.

14. Fritz-Albert Popp. *Biophotonen—Neue Horizonte in der Medizin: Von den Grundlagen zur Biophotonik*. Third revised and expanded edition. Stuttgart: Haug Verlag, 2013; and Mae-Wan Ho, Fritz-Albert Popp, and Ulrich Warnke, eds., *Bioelectrodynamics and Communication*, World Scientific, 1994.

15. Wolfgang Köhler. *The Place of Value in a World of Facts*. See note 5.

specialists in biology, chemistry, and physics is needed that takes this history into account. More broadly, Elsasser often makes references to the history of science. For example, he refers to the replacement of the Enlightenment view since World War II by “Post-Rationalist Reconstruction.” He wrote,

While the extreme rationalist assumes as a matter of course that all problems can be solved by sufficiently clever analysis, our approach to the same question, as dictated by historically founded preconceptions, will be that Nature has aspects that are “irrational,” in particular aspects of spontaneity, that are by their very nature not amenable to analysis.

In my view, Elsasser has overcome the mind-body dualism of the last 350 years and allowed us at last to see many things in a new and different light.<sup>16</sup> Thus, an implication of Elsasser’s discovery that cerebral memory is creatively generated and maintained, is that there is a succession of memories which in effect have access to their predecessors and incorporate them. This calls to mind LaRouche’s statement that the simultaneity of eternity is the most important principle in science.<sup>17</sup> Such a process of creative memory is suggested



Marie Curie in her laboratory at the University of Paris in 1925.



Lauren Harnett

A NASA Johnson Space Center’s “Bring our Children to Work Day” activity engages the mind of a child.

to me in particular for biological evolution by the work of paleontologist Martin Lockley in his 1999 book, *The Eternal Trail*. Discussing convergent evolution, he says:

It behooves us to look at the cyclic pattern of ascending and descending forces that characterize the growth cycle of all individuals, species, and larger groups. It should be clear by now that all groups that we have examined and many more, besides, seem to show transitions from small, narrow, environmentally sensitive beginnings to large, wide environmentally emancipated endings. . . . Note the remarkable convergence between ancestral forms among dinosaurs, birds, and mammals. . . . The similarities in form reiterate throughout the entire evolutionary history of groups. So, there is not just a convergence of various isolated species, but a coherent reiteration of morphodynamic patterns throughout the evolutionary cycle of entire groups. Between cycles, the old morphologies seem lost, but then they are “taken up” again, as Herman Poppelbaum says in *A New Zoology*. One might describe it as evolution spiraling around a cone, so that each cycle resonates with the [past —ES] forms that manifest at that point in the cycle.

The forms that resonate all lie on a line from the apex of the cone to its base and therefore lie at the same phase angles in successive rotations around the cone.

The famous and hitherto unexplained embryological observation, “Ontogeny recapitulates phylogeny” is also relevant here.

The famous and hitherto unexplained embryological observation, “Ontogeny recapitulates phylogeny” is also relevant here.

16. See the latter section of Ernest Schapiro, “Leibniz from LaRouche’s Standpoint,” *Executive Intelligence Review*, Aug. 4, 2017, available at [https://larouche.pub.com/eiw/public/2017/eiv44n31-20170804/54-72\\_4431.pdf](https://larouche.pub.com/eiw/public/2017/eiv44n31-20170804/54-72_4431.pdf) to see why I say my view of the mind-body problem has changed after reading Elsasser.

17. Lyndon LaRouche. “Jesus Christ and Civilization,” *Executive Intelligence Review*, Sept. 22, 2000: “It is no mere coincidence, that this notion of simultaneity of eternity, is the most interesting, important, and profitable idea in all of physical science. (There, it appears most frequently reflected, today, in its reflection as *the relativity of time*.)” Also, see LaRouche, “The Truth about Temporal Eternity,” *Fidelio*, Vol. 3, No. 2 (Summer 1994).

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## II. LaRouche Teaches Science to Young Adults

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February 6, 2007

FOR TODAY'S YOUNG ADULTS:

# Kepler & Cusa

by Lyndon H. LaRouche, Jr.

First published in *EIR* on March 2, 2007.

***Kepler's discovery of the universal physical principle of gravitation, provides us today with the needed pedagogical typification of the meaning of not only the term "universal physical principle," but the refutation of the absurdity of all of those mathematical-physics and related assumptions, such as those of popular economics dogma of today, which are premised upon what is fairly represented as a Euclidean outlook. Here lies the essential continuation of the crime against man, science, and The Creator, by Wenck et al.***

***Prologue:*** For those among us who wish to understand such matters properly, the personal immortality of the sovereign individual human personality, is, at first approximation, formally distinct from the mortal frame which the creative powers of the human mind inhabit.<sup>1</sup> This is demonstrated by the role of the human cognitive function, which is lacking in all known living species other than mankind, but which is peculiar to the biologically expressed individuality of the human

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1. It is to be noted from the outset, that crucial categories implicitly referenced in this writing, refer, inclusively, to the categories defined for experimental science by Academician V.I. Vernadsky's definitions of the respectively *dynamic* Biosphere and Noösphere. Living processes in general, belong to the Biosphere, whereas the function of creative intelligence specifically unique to the human individual (among living creatures) belongs to the domain of the Noösphere. *Dynamics* as defined by Gottfried Leibniz's reading of the Pythagorean/Platonic Greek *dynamis*, and of *dynamics* as defined by the work of Bernhard Riemann, are also implied throughout this piece.

*person. This is expressed in those immortal, creative mental actions which are, in effect, contrary to the expressed opinions of Britain's T.H. Huxley and Frederick Engels, actions which distinguish the willful increase of the potential relative population-density of the human species, absolutely, from the characteristics of species of the higher apes.*

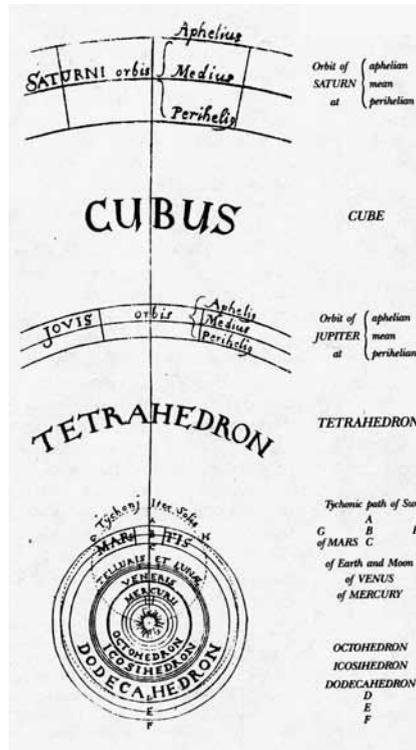
*Nonetheless, the mortal human frame is, clearly, functionally appropriate, specifically, for the work of cognition, as no rival species of organism could be.*

*Those are essential facts of even the mere existence of secular society, as much as a belief of any particular religious denomination. Unfortunately, in today's European cultures, in particular, knowledge of this specific power unique to the individual member of the human species, has been often suppressed, as by the present influence of a new, persistent, pro-Luddite brand of existentialist Sophistry.*

*Today, that suppression is a contemporary expression of a Sophistry which has been, most notably, an influence bred into the generality of that special generation of the "white collar class," the "Baby Boomer," "68er" generation, of Europe and the Americas. That has been, specifically, more narrowly, a pro-existentialist philosophical influence, which was installed widely among the "white collar" segment of those born, in the Americas and in western and central Europe, between approximately 1945 and 1956. It is this implicitly "existentialist," "Baby Boomer" syndrome, as fostered in post-1945 Europe by the Congress for Cultural Freedom (CCF), which had willfully mislaid the fact of the actual connection to that sense of immortality which is implicit in the fundamental principle of our U.S. Federal Consti-*



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In his *Docta Ignorantia*, Nicholas of Cusa (right), laid out his “projected program for the creation and development of all competent strains in modern European experimental science.” The most notable among Cusa’s avowed followers was Johannes Kepler (left). In this diagram from his *Harmony of the World* (1619), Kepler shows, by approximation, that the planetary orbits are elliptical, not circular. From this starting point, he derived the harmonic properties of the orbits.

tution, the fundamental principle of its Preamble.<sup>2</sup>

However, this widespread corruption among the “Baby Boomer” generation’s “white collar” class, and others, is a pathology which is not entirely original to those born in those times and circumstances. The relevant European existentialist currents of today, have been an outgrowth of the heritage of the ancient “oligarchical model” of Babylon, of the Achaemenid Empire, of the Delphi Apollo cult, of Sparta, and of the Roman Empire, Byzantium, and the medieval tyranny of the Venetian financier-oligarchy and its Norman allies. It is the legacy of the Olympian Zeus which was attacked by Aeschylus’ **Prometheus Bound**, in which the figure of the Olympian Zeus serves as the typification of the way in which oligarchical societies and their traditions willfully bestialize the culture of that great

majority of humanity over which the oligarchy reigns, up to the present day.

Notably, the United States was the outgrowth of the work of those Europeans who brought the finest, anti-oligarchical, cultural traditions of Europe to the Americas, so that those traditions might be, hopefully, permitted to prosper at a relatively safe distance from that traditionally “anti-American,” oligarchical culture, which continued to reign in Europe. It has been the continued penetration of the U.S.A., in particular, by what had been, originally, chiefly, the Eighteenth-Century British East India Company’s continuing influence of Anglo-Dutch Liberalism in post-1763 North America, which has been the leading, top-down source of the political and moral corruption encountered within the financier-centered classes of the Anglo-American Liberal Establishment in the U.S.A. and other parts of the Americas, still today.<sup>3</sup>

Thus, the “Baby Boomer” white-collar type, met in both the Americas and Europe today, expresses a peculiar variety of socially determined, functional and

2. Although this syndrome is fairly described as having the effect of a characteristic of the individual personality, it is rooted in “group behavior,” as a dynamic feature produced by a social process, and associated with a type of group behavior, rather than being an individual trait expressed outwardly, as such. It is a pathology triggered by a sensed presence of a specific kind of group-relationship, producing what appears to be a different quality of personality in that quality of social setting than in other settings.

3. See Jeff Steinberg, “Britain’s Assault on America Revisited” *EIR* Vol. 34, No. 8, Feb. 24, 2007.

moral impairment of natural human cognitive powers, a variety which is also met, as in ancient and medieval society, as a kind of brutishness—a kind of intellectual “castration,” a loss of intellectual fertility: an induced loss, by means of which oligarchical classes impose a likeness to dumb, “gin-like” Liberal brutishness upon their victims among the so-called lower classes.

Anglo-Dutch and kindred forms of modern “liberalism,” or what is otherwise properly identified, technically, as Twentieth-Century Sophistry, is also a way of inducing a desired quality of irrationality, of relative “dumbing down” of a population; this modern form of Sophistry, is used Liberally as “shackles of the mind” worn by the social classes which are, deceptively, apparently, outwardly free from such more obvious repression of ancient and medieval slaves, serfs, and Jews. The victims of such conditionings are, in that degree, fairly described as relatively more or less dehumanized in their habits of daily life, including, often, their brutish inclinations in religious beliefs.

That fundamental principle of creativity (which is assaulted to such effect by our contemporary Liberal Sophists), is expressed by the same sense of immortality which Plato’s Greek designates as *agapē*, a sense which is reflected in the great principle of the 1648 Treaty of Westphalia. This principle of creativity, is expressed as Gottfried Leibniz’s specifically anti-Locke principle of “the pursuit of happiness,” a principle which is embedded in the core of the U.S. Declaration of Independence, and in the fundamental principle of natural law expressed as the Preamble of the U.S. Federal Constitution, and also expressed as the return to the enforcement of that Preamble led by President Franklin D. Roosevelt in the conduct of national and world affairs.

The “pursuit of happiness” expresses the motives of the immortal soul dwelling within the mortal frame: the happiness bestirred by devotion to a benefit of one’s mortal life for generations yet to come. That is a devotion which was rather typical of the moral American and European prior to the regressive influence of the Congress for Cultural Freedom on the “white collar” generation born during the 1945-1956 interval, a devotion which has been, in the main, lost, to the presently aging “Baby Boomer” of that heritage today.

The issue of the conflict between truth and Sophistry, of a truth which was virtually ripped out of the childhood and youth among most of the relevant “white collar” types from that 1945-1956 generation, has another, complementary side. Sophistry is a kind of legacy often bestowed by certain theologians, as is shown by

an exemplary debate, treated here, in the following pages: a debate which illustrates the antiquity of the issue of European oligarchical traditions of moral corruption so posed to trans-Atlantic society still today.

## Introduction

What I say here, expresses a mission which I had intended to craft for publication back during the middle of the 1980s. Known events intervened. Although I have touched frequently on crucial aspects of the same subject-matter of scientific method, repeatedly, during the 1990s and later, the subject of the following commentary on Jasper Hopkins’ *Nicholas of Cusa’s Debate with John Wenck*,<sup>4</sup> has waited, again and again, for its uttering on a convenient occasion. The recent publication of the LaRouche Youth Movement (LYM)’s report on the discoveries presented by Johannes Kepler in *Harmony of the World*, has provided that occasion.<sup>5</sup>

My own special contribution to this subject-matter, here, is, to the best of my knowledge, predominantly unique. Yet, this contribution itself rests upon the foundations of discoveries respecting the principles of human knowledge made by numerous others who have lived in earlier times, even those beyond known historical reckonings. These have been, most notably, made by those whose work is summed up in the contributions of the Pythagoreans, Socrates, Plato, the Christian Apostles John and Paul, and, for modern times, Nicholas of Cusa, Kepler, Pierre de Fermat, Gottfried Leibniz, and that great successor of Carl F. Gauss, Bernhard Riemann, and also the great Academician V.I. Vernadsky. My own essential contribution, as presented here, must be presented, as I do, in the context of those upon whose shoulders my own discovery has depended.

The special relevance of the presentation of this material at this time, is its bearing on the setting of ongoing special research work in progress by scientific task-force teams presenting the international LaRouche Youth Movement (LYM). My function on this account, is to set the stage upon which those independent actors in the pursuit of science develop and unleash their own powers of creative performance.

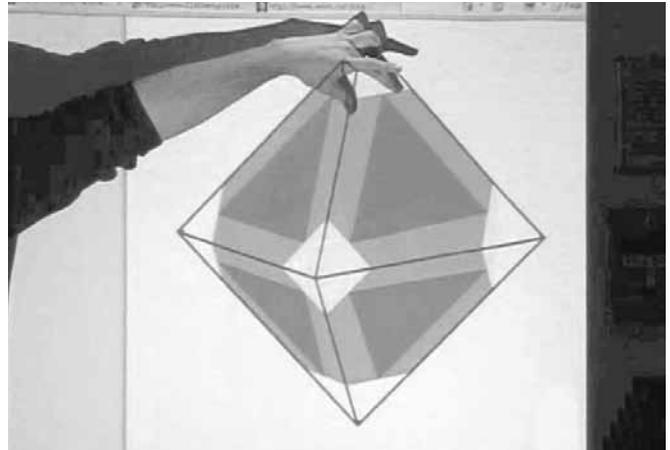
On the subject of the crucial issues posed by Cusa’s science itself, in his *Introduction*, Hopkins’ otherwise adequate treatment of the debate did not address the matter of the substance of human scientific and artistic

4. Minneapolis: The Arthur J. Banning Press, 1980, 1984), pp. 3-18.

5. See LYM website: <http://wlym.com/~animations/harmonies/index.php>.



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*Kepler's work on music and astrophysics emphasizes the unity of physical science and Classical artistic composition. "It is this latter consideration which is essential for a rounded insight into the activity of practicing competent economic science as a branch of physical science." The photo on the left shows LYM scientists Tarranja Dorsey (left) and Megan Beets (right) demonstrating vocally, the "music of the spheres," during a recent four-hour class on Kepler's World Harmony. On the right, a truncated octahedron.*

creativity as such. As my own work here will make clear, Hopkins' *Introduction* was therefore weak on the side of science itself; in that aspect, it wandered away from the most crucial, relevant issue of scientific method, the kernel of the subject-matter of Cusa's founding of the most crucial prescriptions for the launching of modern physical science. On that account, to fill the gap, it is necessary to take the subject, the actual founding of a competent method for modern physical science, on its own terms, as I do here.

The setting of that issue, is, summarily, as follows.

The work in question, justly defended, in the main, by Hopkins, Cusa's *De Docta Ignorantia*, is, essentially, the first of a series of published works which defines what has been, in fact, the projected program for the creation and development of all competent strains in modern European experimental science. Therefore, *that series of writings on science, by Cusa, could not be competently studied from any standpoint, except from the standpoint of viewing this work of his, as the founding of the practice of modern physical science, as that practice was developed, on foundations he provided, by such leading, avowed followers of Cusa as Luca Pacioli, Leonardo da Vinci, and, most notably, Johannes Kepler; and onward from that, as reflections in the work of such of Kepler's followers as Pierre de Fermat, Gottfried Leibniz, Carl F. Gauss, and Bernhard Riemann, attests to this fact.*

My subject here, is, therefore, the special, highest aspect of experimental science as a whole, the role of the creative functions of human cognitive powers, in generating the increase of the relative population-density of mankind, per capita and per square kilometer: the function of individual human cognitive powers themselves in shaping the evolution of the planet, Solar System, and beyond. *This may be fairly identified, otherwise, as the essentially spiritual essence which underlies all competent notions of physical science and economy.*

Let me emphasize, once again, that I have been disappointed, not by what Hopkins says, but what he did not treat on this just-stated account; but, my complaint on that account is tempered by my recognition, that the auspices under which he composed his relevant published work, would have tended to warn him against risking certain attacks, from sundry quarters, a risk which is required for competent treatment of Cusa's explicit role in the founding of the modern science of Johannes Kepler et al.

The lurking threat which implicitly constrained Hopkins, like others, is the brutishly political enmity toward Cusa and toward such among his followers as Kepler, not only by the old European oligarchical parties, but, specifically, those modern Liberal institutions established under the leadership of Paolo Sarpi, and promoted by such haters of Kepler and his scientific followers, in particular, as the notorious Robert Fludd

and Galileo Galilei, and the modern Anglo-Dutch Liberals generally.

My point here, is essentially, therefore, the following.

### The Importance of Cusa for Science

The point is, that the view of, in particular, Nicholas of Cusa's doctrine for science, could not be competently presented without including a focus, essentially, predominantly, on what I have indicated, above, as those core principles of a competent modern physical science, itself. The needed view must be developed by focusing on the differences between the reality and the mere description of science, on the one side, and, on the other, examination of the fraudulent definitions of that subject which have been expressed as *a priori* assertions among theologians who have been typically ignorant of, or even passionately hostile to the essential discipline required of a competently chosen dynamic in the progress of physical science.

For example, on the matter of science, many theologians have tended to do as that Sophist, the notorious *a priori* Euclid of Euclid's *Elements* had done, in his mutilation of the original work which he parodied, destructively, from, chiefly, the Pythagoreans and the circles of Socrates and Plato. As cases in point, consider the examples of those who have made the terrible blunder of choosing between two fraudulent views of the universe: the shameless hoax of the Sophist Claudius Ptolemy, on the one side, and the hoax by Paolo Sarpi's lackey Galileo Galilei, on the other.

The widespread ignorance on matters of science among theologians, in particular, bears crucially on the problems inherently risked in the way, as I shall show here, that Hopkins, in his *Introduction*, avoided the crucially relevant, underlying issues of science itself.

For the Christian in the tradition of the Apostle Paul, or Cusa, especially, the new view of the relationship between the Creator and mankind, which the personality and mission of Jesus Christ reflected and embodied,

Harmonies Between Two Planets		Apparent Diurnal Movements		Harmonies Between the Movements of Single Planets
<i>Diverging</i>	<i>Converging</i>			
$\frac{a}{d} = \frac{1}{3}$	$\frac{b}{c} = \frac{1}{2}$	Saturn at aphelion	1'46" a.	1 : 48" : 2'15" = 4 : 5, major third
		at perihelion	2'15" b.	
$\frac{c}{f} = \frac{1}{8}$	$\frac{d}{e} = \frac{5}{24}$	Jupiter at aphelion	4'30" c.	4'35" : 5'30" = 5 : 6, minor third
		at perihelion	5'30" d.	
$\frac{e}{h} = \frac{5}{12}$	$\frac{f}{g} = \frac{2}{3}$	Mars at aphelion	26'14" e.	25'21" : 38'1" = 2 : 3, the fifth
		at perihelion	38'1" f.	
$\frac{g}{k} = \frac{3}{5}$	$\frac{h}{i} = \frac{5}{8}$	Earth at aphelion	57'3" g.	57'28" : 61'18" = 15 : 16, semitone
		at perihelion	61'18" h.	
$\frac{i}{m} = \frac{1}{4}$	$\frac{k}{l} = \frac{3}{5}$	Venus at aphelion	94'50" i.	94'50" : 98'47" = 24 : 25, diesis
		at perihelion	97'37" k.	
		Mercury at aphelion	164'0" l.	164'0" : 394'0" = 5 : 12, octave and minor third
		at perihelion	384'0" m.	

*After discovering that the planetary orbits were eccentric, Kepler sought to discover a "more basic principle" that would account for the reason for the particular eccentricities they exhibited. He measured each planet's maximum speed when it was closest to the sun (perihelion), and the minimum speed when the planet was farthest from the sun (aphelion), as if he were observing the planet's motion from the sun itself. Then, comparing the speeds of neighboring planets, he found that the ratios of these intervals corresponded to those intervals which human beings considered harmonic in musical compositions. Shown are a chart of the ratios at perihelion and aphelion (above), and their representations as musical intervals (below), taken from the Harmony of the World.*

[In Modern notation:  
 Saturn Jupiter Mars approx. Earth  
 Venus Mercury Moon  
 —E. C. Jr.]

lifts mankind, theologically and scientifically, up from out of purblind spiritual childishness, to a new quality of personal responsibility, a quality actually congruent in practice with the scientifically provable instructions set forth in *Genesis* 1:26-31.<sup>6</sup> We could not merely

6. Notably, by the rigorous definitions of Biosphere and Noösphere supplied by the crucial experimental evidence presented by Academician V.I. Vernadsky.

adduce a description of true principles of the universe on which we might wish to act, within the limits of *a priori* presumptions. We are responsible for much more than a merely descriptive doctrine; we are responsible for the *efficiently practical* consequences of our choice of method, both for the practical consequences of such belief for mankind, and, even more, for the well-being of the Creator's universe which we inhabit, and in which we serve.

Consequently, as in the particular case of Christians following in the footsteps of the Apostles John and Paul, we are no longer excused for continuing an historically earlier condition, a condition like that of credulous children. Those Apostles have blessed us with the privilege of adopting, at least implicitly, a fully adult responsibility for the care of all past, present, and future humanity, and of the universe which humanity inhabits. It were, therefore, time, so, for us, too, to grow gratefully out the primitiveness of childishly credulous ways, into the moral maturity of a present and future, adult humanity which serves that intention competently.

It should, therefore, follow, on that latter account, that if Cusa were correct in terms of the expressed outcome of his founding of a true quality of modern European science, then, that fact, in and of itself, is the crucial challenge to be delivered to those misguided theologians who had, in varying degrees, attempted to discredit the central principle of the argument presented within what Cusa launched in such locations as his *De Docta Ignorantia*.

After all, the test of an opinion on the Creator's composition of the universe, is a show of proofs of that opinion, proofs which must be extracted from the crucial evidence supplied by the most essential expression of physical science, as in the systematic comprehension of nothing lower than astrophysics. It is only by looking at the set of Cusa works associated with *De Docta Ignorantia* and its aftermath from that standpoint, that we have the basis, in modern science, for adducing whether the theological implications of *De Docta Ignorantia*, do, or do not, correspond to the nature of the powers commanding that actual universe within which Cusa's treatment of the subject-matter of science and theology is to be located.

Finally, as a matter of introduction, I must refer to my own special authority in these matters of science.

My principal achievement in these matters, is two-fold in nature. More easily recognized, is my original

work respecting *the special ontological position* of a science of physical-economy within the domain of physical science as a whole. Here, there is the matter of the principles of physical economy, as to be recognized as an expression of Riemannian dynamics, in opposition to the popular reliance of statisticians on the mechanistic-statistical methods of radically reductionist outgrowths of Cartesianism. The subtler, but more essential consideration, is my emphasis on the unity of physical science and Classical artistic composition, as the case of Kepler's work on music and astrophysics, combined, already illustrated this. It is this latter consideration which is essential for a rounded insight into the activity of practicing competent economic science as a branch of physical science.

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## 1. Meet Modern Science

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For modern civilization, the first crucial experimental test of Cusa's principle for the modern practice of physical science as a whole, came with Johannes Kepler's uniquely original discovery of the principle of universal gravitation.<sup>7</sup> The significance of Kepler's discovery of this principle of experimental method, and his ensuing discovery of the harmonic composition of the planetary orbits, typifies the notion of universal principles which should have guided modern European science thereafter. A theologian's differing opinion expressed on those discoveries has often been expressed as a slippery sophistry buried within the theologian's adopted method.<sup>8</sup>

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7. The work of Cusa et al. in establishing the rebirth of science during the course of the mid-Fifteenth-Century Renaissance, was, to a large degree, a revival of the virtually lost knowledge of the work of the ancient, pre-Sophist, Greek science of Thales, Heracleitus, the Pythagoreans, Socrates, and Plato. This clarification by Cusa et al., laid the foundations for Kepler's establishing a truly universal (i.e., astrophysical) basis for a modern, universal form of physical science.

8. Very few modern scientists have been as self-consciously frank with their readers as Johannes Kepler. For example, after Carl F. Gauss had demolished the systemic attack on Gottfried Leibniz's notion of the infinitesimal by such empiricists as D'Alembert, Euler, and Lagrange, Gauss was never again explicit in his publications on the subject of issues of anti-Euclidean physical geometry, even when that standpoint was, often, the clearly implicit foundation in method for what he did report. It is only with the work of Bernhard Riemann, that these implications of Gauss's direction of methodological approach were presented frankly. In the case of Cusa's *De Docta Ignorantia*, the work of the Cusanus Gesellschaft's Rudolf Haubst has led in opening the doors of scholarship to the deeper roots of Cusa's accomplishments; but, even

This was a modern change in context of physical science. In earlier known European civilization, for example, the prevalent task was the development of the power of a grouping of some among the individuals in society as a whole. This frequent limitation was expressed in the low physical productivity of the populations, per capita, under the prevalent oligarchical and closely related systems, as in the so-called “Asian model.” The significance of the Fifteenth-Century eruption of modern European civilization, as centered in the great ecumenical Council of Florence, as it had been expressed, politically, earlier, by Dante Alighieri’s *De Monarchia* and, later, Cusa’s *Concordantia Catholica* and *De Docta Ignorantia*, is the qualitative shift of emphasis to the idea of the *commonwealth*, as typified by Louis XI’s France and Henry VII’s England, rather than the desired advantages provided to a ruling oligarchy. This meant that we required a shift of emphasis, from men and women developing within the confines of the existing conditions of our planet, to mankind as a whole developing its expanding role in the development of that very universe which we inhabit: the entry into the moral adolescence of humanity, and into the yearning for humanity’s yet-to-be-reached true, adult maturity in service of the discoverable intentions of the Creator.

The usual opposition to such needed progress of mankind’s self-conception for practice, has been usually ferocious.

For example, modern scientific scrutiny has presented crucial proof that the work of Claudius Ptolemy was always an outright, intentional fraud. This was not merely a matter of Ptolemy’s burying the known, truthful evidence presented by Aristarchus of Samos under Ptolemy’s intentional lies, and also, similarly, the work

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then, those roots have their own deep antecedents within the scope of Classical European history since the time of Thales, Heraclitus, Solon, the Pythagoreans, and Plato; and even that does not trace the roots far enough into the earlier past. So, Hopkins is confronted with the challenge of exploring the bald fallacy of composition which saturates Wenck’s piece and its influence, dealing with both the relatively obvious fallacies of composition, and even cruder errors of assumption in the content and subsequent, historical implications of Wenck’s item. As the essential Sophistry expressed by the use of arbitrary (a priori) definitions, axioms, and postulates by Euclid, illustrates the problem, we must always probe the actual roots of the assumptions which the *aprioristic* and similar qualities of the assertions, which *apriori* practices are employed to protect.



*The passion of Albert Einstein, the physicist, to discover fundamental scientific principles, also inspired him as a Classical musician, as LaRouche emphasizes the unity of physical science and Classical artistic composition.*

of the Pythagoreans earlier: but, also, that Ptolemy, in his concocting fictitious data in support of his argument, was therefore exposing himself as the author of what was a clearly willful hoax. Otherwise, the evidence is that Copernicus honestly failed to get the point; and, although Tycho Brahe did much better work, he, too, failed where Kepler succeeded in a uniquely original way. Thus, as Kepler was the first of the avowed followers of Cusa’s prescriptions to actually test a set of principles of the universe as such, it is the work of Kepler, and those who faithfully followed his line of investigations, which presents the type of evidence against which the foresight of Cusa’s defining of modern science, as in *De Docta Ignorantia*, is to be tested.

Therefore, as the mathematical physicist Albert Einstein came to make this point, the essence of the actual achievements of modern European physical science, lies in the efficient conception of the human mind’s relationship to the development of the universe itself, the astrophysical, as distinct from merely astronomical universe. *The question is: Is the physical universe, as Einstein summarizes this, finite and yet without external bounds, and is that, as such, a conception of what that universe is, as Einstein insists? Is that universe, as Einstein defines it implicitly, characteristically anti-entropic, rather than entropic?*<sup>9</sup>

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9. “Negative entropy” (“negentropy”) as presented by Bertrand Russell’s dupe, Professor Norbert Wiener, was essentially a hoax, signifying, as in Ludwig Boltzmann’s Machian scheme of things, a matter of locally borrowed (abstractly, mathematically) entropy.

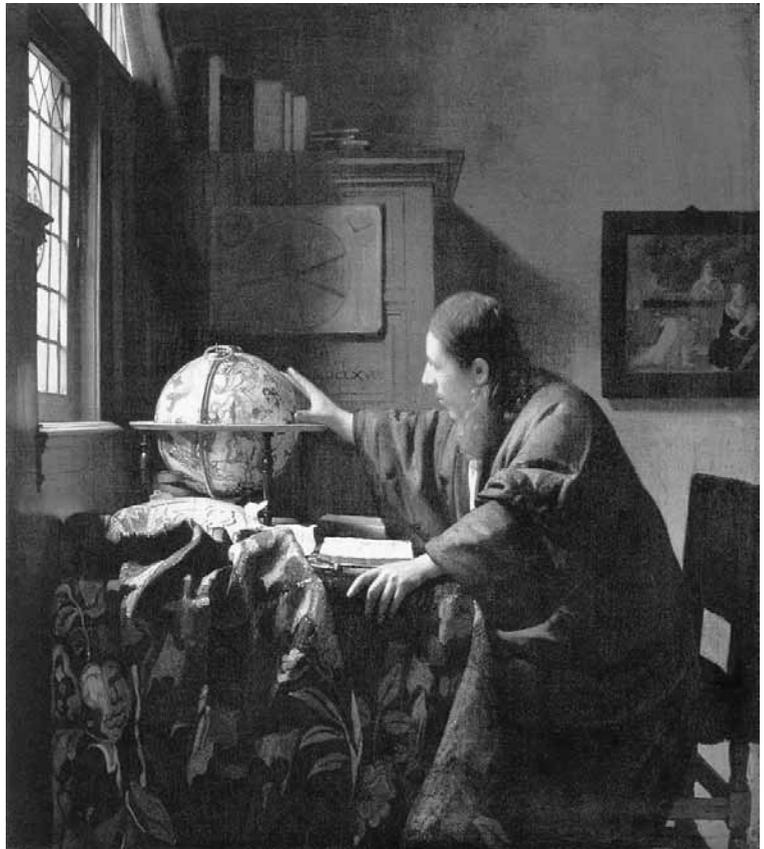
*Einstein's is a conception which an honest modern science has secured from its successes; the essence of a valid form of modern science, is to be located in a process of development of knowledge of true universals from practical origins in the work of Kepler, and beyond, that through the consequences expressed, uniquely, as Gottfried Leibniz defined the mathematical concept of what Kepler's discovery of gravitation had defined as the infinitesimal, and as what Einstein also specified, as the outcome of the work of Bernhard Riemann.*

As a matter of contrasts, the incompetence of that work of such Leibniz enemies as de Moivre, D'Alembert, Euler, Lagrange, et al., respecting the fundamental theorem of algebra, is shown as their incompetence was exposed by Carl F. Gauss's 1799 doctoral dissertation. This case, typifies the hoaxes likely to be generated when the standard of true universals is excluded, as Euler and Lagrange did that.<sup>10</sup>

After all, "universal" either means an empirically existing, functional "universe," or the use of the term itself were merely pretentious gobbledegook: whether by those classed as theologians, or anyone else. "Universe" is, at the start of our inquiries, like the *Sphaerics* which the Pythagoreans adopted from their Egyptian predecessors: it is the image for the mind of man when looking out, as to above, upon that which envelops all existence within our view. It signifies the oceanic traveler, navigating, through seas and seasons, by the stars.

It means more than that. It means the discovery of that which is *efficiently invisible to our senses*, but which is, nonetheless, undeniably manifest, in experienced effects, as a universal power of change (i.e., *dynamis*) within the universe. It signifies "change" in the sense of the famous aphorism of Heraclitus and Plato's grasp of the implications of that aphorism in Plato's own *Parmenides* dialogue, and in the sense of Leibniz's and Bernhard Riemann's successive definition of the role of the Pythagoreans' and Plato's principle of *dynamis*, as the concept of the physical universe: as in the form of the modern, *physical dynamics* of the Leibniz calculus, and the *dynamics* of Riemann's physical hypergeometries.

10. The issue was the denial of the existence of the infinitesimal, as this error is exemplified by the case of the fanatically deranged Euler.



*"'Universe' is, at the start of our inquiries, like the Sphaerics which the Pythagoreans adopted from their Egyptian predecessors: it is the image for the mind of man when looking out, as to above, upon that which envelops all existence within our view. It signifies the oceanic traveler, navigating, through seas and seasons, by the stars." The Astronomer, by Johannes Vermeer, was painted in 1619, the same year that Kepler published the Harmony of the World.*

Thus, before speaking of astrophysical matters, theology is obliged to enter this universal practical domain of *Sphaerics*, the domain of *dynamis*, since the very notion of the human soul, as reflecting the conception of man and woman as proffered in **Genesis** 1:26-31, defines an absolute, ontological distinction, a distinction of powers (*dynamis*), of the human individual, from not only non-living processes, but all lower forms of life.

*The ability of the human species to increase, willfully, its potential relative population-density over the course of successive generations, is the empirical test of the proposition that the human individual expresses a distinction which is expressed as a power of the individual person. This is an individual who possesses an essential quality, of a power, of being, which is in some fashion efficiently immortal, as it is distinguished by a power in the likeness of the Creator, to change the universe in which mankind exists: to make such qualitative*

*changes in the relationship of the human species to the universe, and even to change the quality of the universe which our species inhabits, to do that creatively, in a manner like, and in the faithful service of the continuing work of the Creator.*

Therefore, it is from this standpoint, that we should define what we should signify by use of the term “universal physical principle.” That question is posed to us, typically, in the manner in which Cusa’s follower Kepler uncovers the efficient existence of an efficiently invisible universal power (*dynamis*) of gravitation, first, in his *The New Astronomy*, and in, *The Harmony of the World*, the implications of the more inclusive picture of the harmonic ordering of the Solar System.

This accomplishment by Cusa’s follower Kepler, was made in opposition to the legacy of both Cusa’s opponents during Cusa’s own lifetime, and to such later opponents of the method of Cusa and of Kepler as such followers of Fludd and Paolo Sarpi, as Sarpi’s lackey Galileo Galilei. The list of defectives includes those modern empiricists, positivists, and existentialists, who have adopted, in common, those philosophically indifferentist methods of William of Ockham, which Sarpi and his radically reductionist followers, including John Locke, René Descartes, and the frankly wicked Bernard Mandeville, François Quesnay, David Hume, Adam Smith, Leonard Euler, Immanuel Kant, Joseph Lagrange, and Jeremy Bentham, had brought into modern European practice up through the current day.

### Albert Einstein’s View

Notably, to understand Albert Einstein’s referenced conclusions respecting the significance of the general accomplishments of the practice of modern science, from Kepler through Riemann: we must acknowledge the evidence that the principle of gravitation, as discovered by Kepler, is “invisible” to mere sense-perception: that, because it is, *efficiently*, as big as the universe, and thus, like every true universal physical principle, it supplies that universe with the quality of boundless finiteness as a whole, but is, also, therefore, in a manner of speaking, so large, that its efficient local expression is, apparently, *ontologically infinitesimal*.<sup>11</sup> This implication of Kepler’s discoveries is then made more efficiently comprehensible, by the explicitly *anti-Euclidean, dynamic, physical hypergeometry* of Bernhard

11. Since the universe is changing, anti-entropically, through the process of generation of discovery of universal principles. It is the anti-entropy which bounds the universe.

Riemann, as this is to be contrasted with the silly, neo-Euclidean, mechanistic-statistical, mythical universe admired by the modern, empiricist dupes, who have followed the method of Descartes, including those such as Immanuel Kant et al.<sup>12</sup>

This was already the essential view of science, and also of related matters, by such practitioners of the science of *Sphaerics* as the ancient Pythagoreans and the Pythagoreans’ allies among the circles of Socrates and Plato. This was in opposition to that incompetent, Aristotelean view of astronomy, as represented by the Roman Sophist and exposed hoaxster Claudius Ptolemy, and by the explicitly Sophist Euclid.<sup>13</sup>

### Is Our Universe Dying?

Notably, if we adopt the reductionist view, such as that of Aristotle, we have implicitly adopted the same notion which underlies Friedrich Nietzsche’s “God is dead” slogan. For if the Creation were seen as completed, in the sense of “perfected,” then we are assuming that the Creator himself were incapable of intervening, willfully, to alter its composition. If, however, we define the universe as *anti-entropic*, as a process which features a lawful ordering in successively higher states of existence through development, we have a universe in which our Sun, in its youth, was a solitary, fast-spinning object in its nook of celestial space, but which generated those higher states of the periodic table from which the planets and other bodies of our Solar System were chiefly composed: a universe representing a *universal anti-entropic principle*. This is a universe, like that of Heraclitus’ aphorism, in which Creator and man collaborate in a willful process of development of the universe into higher states: *a universe in which nothing is permanent, except a universal principle of anti-entropic change*. The boundless process of successive, willful acts of creation by individuals in the likeness of the Creator, never ends.

12. It is not the action as such, but the dynamics (the physical geometry in which the action is situated) which is primary. Therefore, the crucial work of Bernhard Riemann dates from his 1854 habilitation dissertation: *Über die Hypothesen, welche der Geometrie zu Grunde liegen* in *Bernhard Riemanns Gesammelte Mathematische Werke*, H. Weber, ed. (New York: Dover Publications reprint edition, 1953). See, also, Lyndon H. LaRouche, Jr. “Vernadsky and Dirichlet’s Principle,” *EIR*, June 3, 2005. The latter has pervasive relevance throughout this present report.

13. This is noted in passing by Proclus, in his Commentary on Plato’s *Parmenides Dialogue*, but is confirmed by any systematic comparison of the method of Euclid’s *Elements* with the anti-reductionist, clearly anti-Euclidean method intrinsic to the work of the Pythagoreans and of Plato’s circles.

The fundamental principle of reductionism, which permeates the Sophist realm of Euclid's *Elements*, as it does the arbitrary universal principle of Claudius Ptolemy's hoax, is the same "principle" expressed by the satanic Olympian Zeus of Aeschylus' *Prometheus Bound*. That was the Zeus who charged Prometheus with the offense of enabling mortal men and women to discover the use of "fire," or, as we might say today, the destiny of mankind to discover and use the principle of controlled nuclear fission. Under that Zeus' reign, all men and women are treated as merely in the specific likeness of cattle, either as herds of tamed cattle to be reared and culled at the owner's pleasure, or wild cattle to be hunted down for sport, even exterminated, as the Legions of an evil ancient Rome often did, and as the youth of Lycurgus' Sparta hunted down helots for sport.

Thus, the Roman Empire prescribed the doctrine of *Prometheus Bound*'s Olympian Zeus, as universal law. This was not only the doctrine of Imperial Rome, but has always been the elementary doctrine of practice of all expressions of what was known, explicitly, to no later than the time of Philip of Macedon, as that "Oligarchical Principle" which permeates the cultures of Europe, top down, and axiomatically, still today.<sup>14</sup>

This was also the underlying doctrinal principle of the ancient Sophists and their modern expression as today's Malthusians and those modern "Luddites" called "environmentalists." The same dogmatism of "The Olympian Zeus," has been the systemic characteristic of the imperial law of the ancient Roman and Byzantine empires, the medieval *ultramontane* system under the sway of the Venetian financier oligarchy and its Norman crusading butchers, and of what has emerged as the intrinsically linear, monetarist model of the neo-Venetian, Anglo-Dutch Liberal financiers' British Empire in its sundry phases to date.<sup>15</sup>

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14. The modern Anglo-Dutch Liberal system derived from the guiding influence of Paolo Sarpi, is a qualified exception to the general rule of most oligarchical systems of earlier European and related history. Sarpi reacted to the evidence that the Venetian financier oligarchy would make a grave strategic error, against its own interests, were it to attempt to turn history back to the Norman-Venetian oligarchical systems of the Thirteenth and early Fourteenth Century. Sarpi adopted the irrationalism of the medieval William of Ockham, as a replacement for the strict formalism of the Aristotelean system. This permitted the existence of some scientific and technological progress in economy, but on the condition that the methods of discovery of fundamental physical principles themselves be crippled, or even suppressed.

15. As I have detailed this in earlier locations, the British Empire, which was established, in fact, as a de facto empire of the British East

Although we have crucial elements of information, which reflect creative acts of scientific discovery of physical principles during times prior to the work of science in ancient Classical Greece, and as expressed by ancient cultural strains outside what can be meaningfully classed as European culture, we know, from the evidence of the existence of human cognitive powers absent in the lower species generally, and relative to the great apes more narrowly, that the creative powers exhibited within the bounds of European civilization, are the same which have always set the human species apart from lower forms of life, that in exactly the terms expressed in celebrated verses of *Genesis* 1:26-31. Against that background, the study of the development of the physical science and Classical modes of artistic composition, presents us with a body of evidence which demonstrates that all principled forms of progress of European civilization, both in science and the role of Classical artistic composition, form a knowably unified, coherent body of knowledge, a body of knowledge which is coherent with the fundamental distinction, the universal physical principle, of distinction of man from beasts.

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## 2. 'Who Am I?': Science & Theology

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In the immediately preceding section of this present report, I have already emphasized the importance of recognizing the pernicious role of certain layers of *aprioristic* and kindred presumptions, as these are typified by the definitions, theorems, and postulates of a Euclidean or other reductionist geometry: a geometry by aid of which people usually evade their own *Cartesian-like* doubts about the reality of their existence as conscious persons. The pivotal expression of such pathological impulses, is the notion often referred to as "sense-certainty."

In contrast to the generations born prior to World War II, that problem is a greatly aggravated one today,

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India Company, by the February 1763 Peace of Paris, is distinguished from the earlier type of Venetian-Norman imperialism by the rise of Paolo Sarpi's "New Venetian party," which adopted the medievalist irrationalism of William of Ockham as the basis for what became known as Anglo-Dutch Liberalism, as a system of imperialist rule by a slime-mold-like financier-oligarchy, whose goal was the establishment of a "unipolar," axiomatically "monetarist" empire of so-called "free trade," an empire modeled on the image of the ancient Tower of Babel.

especially since the middle of the 1960s. Such has been the effect of the successive, post-war waves of degeneration in public and higher education, and also in loss of rationality in popular culture relative to the period under President Franklin Roosevelt's leadership. For example: today, since the late 1940s and 1950s, there is virtually no honest education in the subject of history, relative to what was standard in even respectable public schools during the pre-war generation's youth. Thus, commonly, science as taught under the influence of the 68ers today, is either an articulated gibberish of mere mathematical formulas, for most, or, it is a form of professional higher education saturated with the atrocities solicited from the followers of the most evil man of the Twentieth Century, the Bertrand Russell whose devotees included not only Aldous and Julian Huxley, but also Professor Norbert Wiener (the putative author of the "information theory" hoax) and the John von Neumann who complemented Wiener's nonsense with the mechanistic notion of "artificial intelligence."<sup>16</sup>

Largely as a by-product of such axiomatically irrationalist cults as "information theory," popular culture today has been polluted, massively, by the effects on even younger generations, of the "68er" style of mass-brainwashing of the "68ers" generation's modern Ludites' revival of the Delphi Gaia cult's Dionysian, anti-science "environmentalism." The destruction of standards of rational behavior, by the influence of such cults as "information theory," has fostered the spread of depraved, contemporary existentialist fads of the sort met among the academic devotees of Mrs. Lynne Cheney's neo-Fabian, international "new right" ACTA cult. That cult and its like, are rampant in trans-Atlantic academia, complementing paganist forms of enraged religious cults in society at large. The mind of today's typical young adult, even in relatively higher-paid professions, is assaulted by avalanches of more or less popular, impulsive, fragmentary beliefs. Dante Alighieri would see, thus, a world which waits in the anteroom of an onrushing new dark age.

That is the prevalent situation in which the issues

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16. The "cybernetics" project featuring Professor Norbert Wiener of MIT, was steered by Margaret Mead et al., at the Josiah Macy, Jr. Foundation, as a post-President Franklin Roosevelt project. It was led from the Massachusetts Institute of Technology's R.L.E. program. John von Neumann's "artificial intelligence" program, which was introduced by his posthumously published Yale lectures, was also steered prominently from MIT, an effort associated with Marvin Minsky and Noam Chomsky.

treated by Hopkins' referenced work, might seek attention within ostensibly educated strata today. Despite that, the issues themselves, as Hopkins addresses them in the referenced work, exist, and also the deeper issues with which I supplement Hopkins' referenced work here. Despite the added recent sources of difficulty within the body of the public today, even the nominally educated public, the issues are even more important, and urgent, than they ever were before. They are issues which must be treated with the same degree of rigor, perhaps even greater rigor, than would have been required two generations and more ago.<sup>17</sup>

### **The Menace of *Apriorism***

The problem which Hopkins' treatment of the Wenck-Cusa controversy leaves essentially untouched, is the crucially relevant, ontologically very deep, real-life implications of the notion of sense-certainty. This is a problem of scientific method which can not be treated adequately by merely shifting the approach to emphasize the implications of science for theology. We must cast Wenck and his sympathizers *efficiently* aside, if we are to meet those requirements implicit in a competent elaboration of adopted Christian doctrine's bearing on organization of a notion of natural law required for society.

The pathological character of the use of sense-certainty in educational and related programs, coincides with the implications of Wenck's attack on Cusa in the following way. A certain amount of essential background on issues of scientific method must be brought into play.

The universe is actually operating on the basis of what are strictly classed as universal physical principles, as Kepler's original discovery of a universal principle of gravitation illustrates the point. The number of such principles is open-ended, that in a fashion which has been clarified for modern science by Bernhard Riemann's work in establishing the principles of the *dynamics* of a physical hypergeometry. The work of Mendeleev in, most notably, opening the domain of nuclear physics, the work of Louis Pasteur and his followers, through Vernadsky, in defining the principled distinction of the phenomena of living processes, and Verna-

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17. Notably, Hopkins' *Nicholas of Cusa's Debate with John Wenck*, was written and published before the principal part of the potential audience for such publications was dying out, and being thus superseded by the rise of the "Baby Boomer" generation to a dominant influence in shaping ostensibly learned as much as popular culture.

dsky's posing of the character of human cognition as a category beyond both non-living and living physical-chemical processes, presents us with an image of a pattern of an endless accumulation of discovery of universal physical principles. *Science must proceed always with respect for its own ignorance of such universal principles yet to be discovered. Here, the genius of Cusa's work on **Learned Ignorance**, shows up, thus, today.*

Since the relevant, fragmentary work of Carl F. Gauss on the subject of hypergeometries, and Riemann's broader development of this field, competent modern physical science today is located primarily in the successive work of, chiefly, Gottfried Leibniz, Gauss, and Riemann, in exposing the incompetent mechanistic-statistical methods of the empiricist Descartes: that, as a result of Leibniz's re-introduction of the ancient Pythagorean/Platonic concept of *dynamics*. Since Leibniz's attacks on the Cartesian method, on this account, all competent science is premised on the extended use of the Leibnizian principle of *dynamics* as shown by Gauss, but, chiefly developed by Riemann. Today, all competent definitions of economic systems are based on the principles of Riemannian *dynamics*, in opposition to today's residue of inherently incompetent Cartesian mechanical-statistical systems, such as those of Mach, Boltzmann, and the usual present-day economic analyst and forecaster.

This concept of modern *dynamics* was introduced to modern physical science as I have already indicated above, chiefly, by Cardinal Nicholas of Cusa, beginning, most notably, with his *De Docta Ignorantia*. Cusa's method was that explicitly adopted by Johannes Kepler for Kepler's uniquely original founding of modern astrophysics, work which served as the basis for the development of competent trends of discovery and practice in modern physical science. In economics, in particular, the generally employed, intrinsically incompetent methods of forecasting and related analysis, are those of Cartesian mechanical-statistical forecasting, as illustrated by the calamity promoted by the work of Morton Scholes and his associates which led into the celebrated 1998 monetary crisis. Thus, most contemporary official and other leading forecasts are products of intrinsically incompetent methods, which lead, sooner or later, toward intrinsically awful results.

Thus, among its notable other defects, Wenck's argument expresses the same intrinsically stagnant pool of incompetence inherent in reductionist method, the

which is the same root-error, as, later, and still today, of Cartesian mechanistic-statistical methods generally. Thus, the result of adopting *aprioristic* notions of principle, is that blind faith in the reality of sense-perceptual experience as such, leads to the problems which underlie the motives of all that opinion which tends to fall into the same niche as Wenck's attack on Cusa's *De Docta Ignorantia*.<sup>18</sup> There lies the importance of exposing the fraud of Wenck and his followers today.

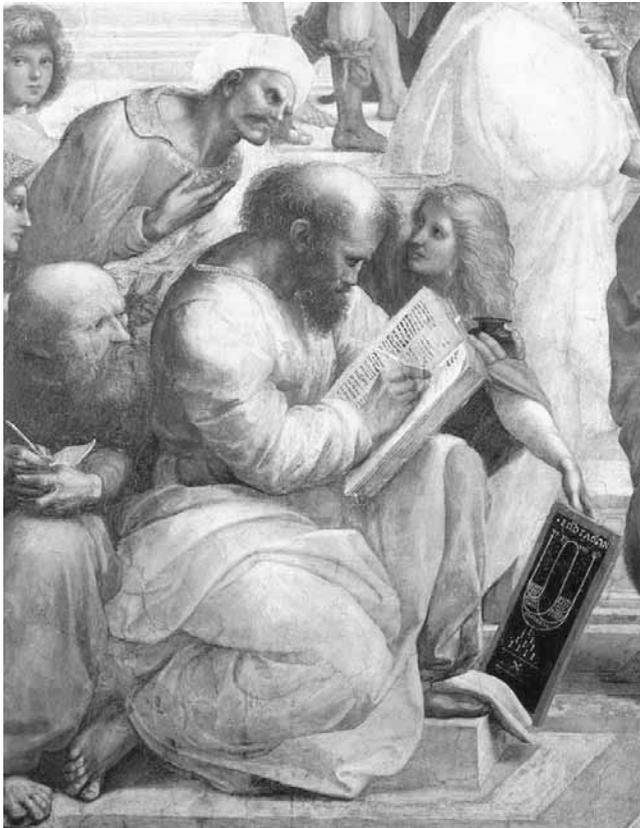
### Where *APriori* Methods Come In

If we treat the human species as it were another animal species, one compared to the higher apes, we must be shocked, today, by the comparison of the relatively fixed potential relative population-density of the population of apes dwelling in their species' appropriate environments, to the increase of the potential relative population-density of the human population today. To sum up that point: What the human species accomplishes by revolutionary improvements in the technology of culture, without any relevant degree of change in human genetics, defines humanity as a species whose characteristic mode of existence expresses a new kind of principle of "genetics" which is absent in all forms of merely animal life.

If we look back at the record of human existence, especially its self-development, over the tens of thousands of years of recent pre-history and history, looking at this from the vantage-point of the social effects of modern scientific progress, and, if we examine this in terms of changes in potential relative population-density, we find the prototype of the quality of change which distinguishes man from beast, in the effects of practiced discoveries of universal physical principles. Once we have taken those discoveries into account, we are left with evidence of progress in potential relative population-density, such as the change, from a feudal

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18. Hopkins' book presents us with a Wenck who, in English translation, represents, intellectually, a crude and brutish figure, a figure of more political than theological significance, who would not be worthy of consideration by Hopkins, or by me, except to point attention to the notable poor wretches who, chiefly for political reasons, have referenced Wenck's attack on Cusa as an authoritative source. In these respects, Hopkins' book is adequate for its stated and implicit intentions. My purpose here is to focus on the need to recognize Cusa as not only the founder of modern European experimental science, but to clarify the importance of Cusa for insight into the special significance of the need to define the theological implications of the science of physical economy, as I address that matter explicitly at the appropriate point in this present report.



Since the work of the Pythagoreans, in the field of Sphaerics, “all competent scientific work, in so-called ‘physical science’ and otherwise, is premised on the notion of universal physically efficient principles of the quality which those Greeks associated with the concept of dynamis.”

This detail from Raphael’s “School of Athens” (1509) shows Pythagoras surrounded by his students, including Archytas, seated behind him, taking notes. The tablet held by the youth shows Pythagoras’ musical harmonies.

society, to a commonwealth form of national social-political system of the type proposed, successively by Dante Alighieri and Nicholas of Cusa, as in Dante’s *De Monarchia* and Cusa’s *Concordantia Catholica* and *De Docta Ignorantia*. This is the commonwealth form introduced, actually, by France’s Louis XI, and copied from Louis by England’s Henry VII and Sir Thomas More. We take into account, similarly, the effects of those revolutionary changes in artistic culture which European civilization came to regard as Classical, which have a similar quality of usefulness in promoting improvements of the ability of the population to cooperate in promoting what might be termed clearly “physical” improvements in potential relative population-density.

All of these factors associated with qualitative

forms of increase of society’s potential relative population-density, have the kind of net effect otherwise typical of valid discoveries of universal physical principle. Indeed, we have demonstrated, experimentally, that the principles of Florentine *bel canto* modes of choral composition and performance according to the J.S. Bach legacy, have, as Johannes Kepler’s work shows, a crucial significance as being, effectively, universal physical principles in the domain of astrophysics. Mathematics appears to be indispensable in physics, but without the principles of choral counterpoint defined by the work of J.S. Bach, and the generation of Leonardo da Vinci earlier, there is a lack of the *passion* needed to move discovered principles of what are somewhat misnamed as so-called “physical science,” into effective action. Every truly great Classical artist, and every truly sane scientist knows this from experience.

*I have an image of Albert Einstein, the physicist, performing with his violin, in services conducted at the great Jewish place of worship in Berlin, during the time before Hitler’s dictatorship.*

The point which I am developing at this juncture in the report, is, crucially, the following.

Since the work of the Pythagoreans, in the field which they and Plato’s circles identified as *Sphaerics*, all competent scientific work, in so-called “physical science” and otherwise, is premised on the notion of *universal* physically efficient *principles* of the quality which those Greeks associated with the concept of *dynamis*, the concept which Leibniz and Riemann, most emphatically, associated with the modern term *dynamics*. This was, in turn, a notion which the relevant Greeks traced to Egyptian astrophysics, an astrophysics established there long before the erection of the great pyramids, an astrophysics with characteristics traced to the functions of astrogation used by a maritime culture within the period of the last great glaciation of the Earth’s northern hemisphere.

The simplest demonstration of the distinction of the physical geometry practiced commonly by the Pythagoreans, such as Archytas and the circles of Socrates and Plato, is that the relations among point, line, and solid are in no way “self-evident.” As Archytas’ solution for the construction of the doubling of the cube illustrates the concept of *dynamis* associated with *Sphaerics*, the relations of action within physical space-time are defined by an apparently “external” force of action on that space: the modern notion of physical space-time, as de-

veloped from the work of Cusa follower Kepler, and through the later view developed by Albert Einstein. *To draw a line in the sand, and to generate a line of physical displacement in physical space-time, are not equivalent mental actions. Contrary to the modern Sophist Descartes: Space by itself, and time by itself, have no independent real existence in the actions of the real universe.*

The Sophist's Euclidean system, which was a hoax created in defiance of all earlier Egyptian and Greek physical science, effectively destroyed real science wherever it was permitted to reach. It destroyed science by eliminating respect for the existence of *efficient physical action for change in state*, as the subject of human knowledgeable practice. Thus, reductionist methods such as those of Euclid, effected a change which degraded Classical Greece's culture, from the levels it had achieved in Magna Graecia and its Athens earlier, backwards toward the ideal represented by the Delphi Gaea-Apollo cult's Lycurgan Sparta. The effect was to throw Greek civilization backwards, toward the evil state of mind prescribed by the Olympian Zeus of Aeschylus' *Prometheus Bound*, to a state of society (at least of most among its populations) in which the great majority of men and women were treated as either herded or hunted cattle, denied, through an evil policy of "zero technological growth," like that of our contemporary "environmentalists," the right to change their customary practice from that which reigning tyrants had assigned to the general population's forebears. Even, as by the lunatic "environmentalists" of today, to throw the level of cultural practice and human relations back toward a relatively more brutish state of customary affairs, as this kind of general moral depravity has been imposed, once more, under the sway of the "68ers," over the recent nearly three decades of today. The hope of the future of mankind now lies in the willful hands of those who will free mankind from this accursed, lunatic "neo-malthusianism" spread among, and by the "Luddites" of so much of the so-called "Baby Boomer" generation today.

### **Dynamics: From Archytas to Einstein**

Modern science was founded as it had to have been founded, in the founding of modern astrophysics by Johannes Kepler. The two most crucial discoveries by Kepler, first, of universal gravitation, and, second, the harmonic composition of the internal ordering of the Solar System, are the foundation on which all general

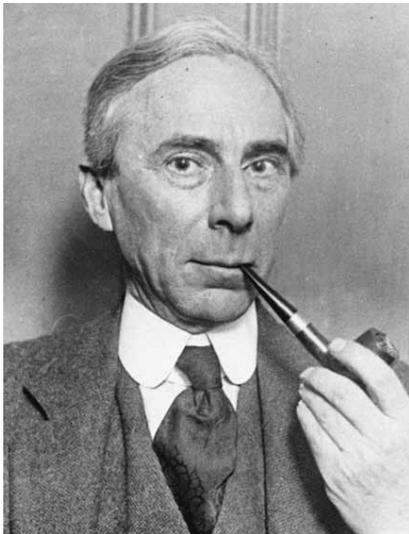
practice of a competent form of modern science continues to depend.

This set of discoveries by Kepler, gave us the basis for the modern revival, by Leibniz, of that concept of *dynamis* which had been largely buried under the heaps of ashes from the time of Plato's death, and, more emphatically, since the deaths of Eratosthenes and his collaborator Archimedes, until the outstanding role of Cusa's relaunching experimental physical science. Leibniz's introduction of that principle of dynamics, on which all competent modern science now depends, was an outgrowth of Leibniz's actual development of what Kepler had prescribed as the needed development of a calculus of the infinitesimal, a need identified with the role of the infinitesimal in the function of universal gravitation.

Thus, on foundations provided, respectively, chiefly, by Cusa, Leonardo da Vinci, Kepler, and Pierre de Fermat's discovery of a principle of least action, Leibniz developed the foundations of an extensive form of universal modern physical science. From this vantage-point, Leibniz, in fact, demolished the pretensions of the Sophist Descartes, and, with the amplification of the calculus by the catenary-cued, universal physical principle of least action, established the principle of *dynamis* on which all competent scientific method has depended, from that time, to the present date.

Nonetheless, despite that accomplishment by Leibniz and such notable followers as Gauss and Riemann, the old pro-oligarchical enemies of human freedom from forms of brutalized chattel indenture, have persisted, even within the provinces of physical science itself. The epitome of that obscene regression within the ranks of modern science and its society, has been the work and passion of the evil Bertrand Russell, and such among his lackeys in the field of science as Norbert Wiener and John von Neumann. Nonetheless, despite the modern Sophists, the indelible accomplishments of modern science, in fundamentals, lives on; the discovery of universal gravitation, by Kepler, is still the most efficient paradigm for making the principal current problems of science apparent. It is from this standpoint that the brutish intellectual wickedness of Wenck becomes clearer.

*Kepler's discovery of the universal physical principle of gravitation, provides us today with the needed pedagogical typification of the meaning of not only the term "universal physical principle," but the refu-*



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*“The epitome of that obscene regression within the ranks of modern science and its society, has been the work and passion of the evil Bertrand Russell [left], and such among his lackeys in the field of science as Norbert Wiener [center] and John von Neumann [right].”*

***tation of the absurdity of all of those mathematical-physics and related assumptions, such as those of popular economics dogma of today, which are premised upon what is fairly represented as a Euclidean outlook. Here lies the essential continuation of the crime against man, science, and The Creator, by Wenck et al.***

Albert Einstein enjoys full credit for making clear to me, as to others, the fact that Kepler’s discovery of the principle of universal gravitation, defines the universe of physical science as essentially *Riemannian*. That is, as I have stated above, the proof that gravitation is expressed uniquely in the local form of a mathematical infinitesimal, as by Kepler, defines gravitation as not only a universal principle, but a principle whose efficiency encompasses the universe. This was not explicitly claimed in those terms by Kepler; but the point was recognized by those, such as Einstein, who were qualified to look back toward the work of Kepler from a relevant historical distance. Implicitly, Kepler already understood this, or an equivalent conclusion.

This concept, as expressed by Einstein, had been already the position taken by Leibniz’s refutation of Descartes, and the refutation, as by Carl F. Gauss’s 1799 doctoral dissertation, of those, such as Euler and Lagrange, who foolishly attempted to deny the infinitesimal implications of the Leibniz discovery of the so-called modern calculus. The implication of Leibniz’s relatively perfected version of the calculus, his cate-

nary-cued universal physical principle of least action, was what was developed later as the Riemannian form of physical hypergeometry, as Einstein was to recognize the relevant connections in his time.

What Riemann accomplished, thus, was the establishment of the notion of a *generalized dynamics*. *Here lies the hard core of proof of the specific charge to be made against Wenck and all the fools who have followed him.*

In the real universe, the increase of the productive powers of labor, as measured per capita and per square kilometer, is made possible through man’s discovery and use of notions which qualify, efficiently, as either universal physical principles, or their derivatives. All such principles, like universal gravitation, bound the universe of our experience. It is the exploration of the practical implications of a concert of universal physical and comparable principles, which enables mankind to increase the expressed power in the universe which the individual’s or society’s actions gain through application of those principles and of their combined action.

All such principles are invisible to the senses, but their effects, like the effects of gravitation, clearly, are not. These principles are the objects of cognitive insight, a quality of insight unique to the powers of the human individual human mind (and that of the Creator).

*Hence, the principle of Learned Ignorance, of Cusa’s De Docta Ignorantia.*

As we should know from the progress in scientific

discoveries since the Fifteenth Century, as for example, Kepler's discovery of the principle of gravitation, not only were these revolutionary discoveries, respecting man's potential power in the universe unknown *but the existence of unknown physical principles was known!* In such cases, as Cusa's work on science makes this point clear, it is our paradoxical knowledge that something exists as an efficient principle, but is a "something" which we do not yet know, which is the essence of passion, like the passion of great Bachian counterpoint, as expressed by Bach's great follower, Ludwig van Beethoven, which drives science and human creativity in general.

So, modern civilization explores intra-Solar System space, not because we know what is there, but because we dare not ignore what might exist, and what we must discover, out there beyond our presently available certainties. It was on precisely this account, that Nicholas of Cusa is the founder of all valid currents of modern European physical science. Anyone who opposes his approach on this account, is clearly an adversary of science, and, therefore, also, of the Creator's intention for mankind.

### **Dynamics in Economy**

It is just for the same reasons underlying my argument in this report thus far, that virtually all economists known to my studies, in the world today, are relatively incompetent in their efforts to treat the most urgent classes of the problems with which the world as a whole is presently confronted. Virtually all such economists rely upon a Cartesian, or Cartesian-like statistical method of treating economic space as mechanically—e.g., kinematically—ordered. Neither the universe, nor any real economy operates according to rules consistent with such a Cartesian method.

This does not signify that none of those economists are good people. Many of them are intelligent and useful, in addition, in some cases, to being good in their intentions. It signifies merely the limited competence of any economist, or kindred professional, who believes in the rightful existence of a monetary-financial system as the foundation of organization of any system of national economy, or relations among sovereign nations in the world at large. The only competent system is a system of physical economy, whose financial relations are organized approximately as the Bretton Woods system was intended to become, as a rela-

tively fixed-exchange-rate, international credit-system, of a quality fit to have pleased our own Henry C. Carey, and Benjamin Franklin and Alexander Hamilton as well.

Any existing state of organization of an economy, as if according to prevalent forms of existing guides to action, is inherently doomed by the mere fact that it is operating, more or less, on reliance on an existing, *false* set of implicitly assumed universal principles. The worst of all important economic doctrines, are those premised, like the currently global "free trade" system, on a primary role of usury within any Anglo-Dutch Liberal style in monetary system.

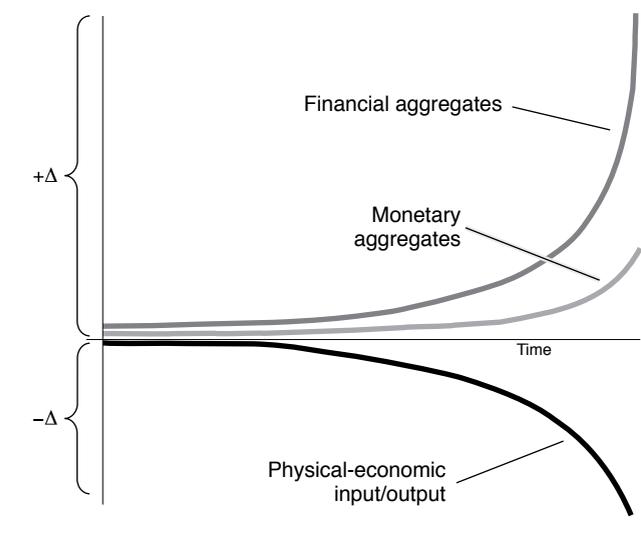
In fact, unless the presently reigning rules of international trade, technology, and monetary affairs are repealed, that more or less immediately, civilization on this planet is, presently, about to disappear for a long time to come. What the date of the expiration might be is not certain; it never is, which is one of the collateral reasons that my rivals among customary forecasters are always wrong in respect to the functional course charted by the presently reigning policy-shaping matrices. Nonetheless, we are presently at the verge of a general collapse of civilization throughout the planet as a whole, unless the presently reigning policies of the planet, especially the deadly monetarist and "pro-malthusian" ones, are more or less instantly scrapped, and replaced by more suitable, honest ones.

The real function of physical-economic processes, is not locatable within the scope of statistical kinematics. Competent economic science, and competent national economic policies are premised upon dynamics, not statistical kinematics. *The real function of economies is located in the relevant Riemannian form of the set of dynamics within which the economic process is currently operating.*

Any set of universal physical principles, as Kepler's discovery of universal gravitation illustrates the notion of such a principle, is to be regarded as a *boundary condition* within which the relevant economy is currently operating: the confines, like the walls of an aquarium, within which the economy is operating.

In any relatively fixed such state of an economy, three general conditions are operating. The rate of change of a capital-intensive form of potential relative population-density, the approach to a boundary-condition defined by a limited range of universal physical

FIGURE 1  
**LaRouche's Typical Collapse Function**



principles in use, and the limits imposed by lack of development of the general economic infrastructure in which the economy is operating. These conditions define a relative limit, within which any relatively fixed state of that system is operating. *Briefly:* As the physical-economic process approaches the proximity of those limits, a barrier appears. Unless a relevant, qualitative form of technological change is introduced, the rate of growth of the economy, as measured in physical terms, per capita and per square kilometer, will enter a phase of accelerating slowing of the rate of growth of the economy, and, thereafter, will approach a condition at which the growth becomes negative. As this phase of the process is entered, the rates of change to this effect tend to become hyperbolic, as we are witnessing the complex process of decline and impending breakdown of the U.S. economy throughout the 2001-2007 period of the George W. Bush, Jr. Administration (**Figure 1**).

This threatened breakdown could occur if the economy were simply operating under preexisting trends in policy-shaping, as in the decline of the U.S. economy under President Clinton. It would be qualitatively worse, if the rate of breakdown of the economy were accelerated radically by the changes in policy, relative to those of the Clinton Administration, which were introduced, again and again, in a reckless and lunatic fashion, under President George W. Bush, Jr., especially a change like the monstrously, ruinously wasteful

economic effects of the Bush Administration's war and national security policies.

In fact, the situation is much, much worse than that. Contrary to the myth of British-trained economist Karl Marx, neither "decennial market crises," nor anything like them, were ever scientifically inevitable. Admittedly, crises of approximately that description did occur, as a taxidermist's stuffed animal may look like a living one, but the cause for their occurrence was never inherent features of the modern system of technologically progressive agro-industrial economy. All such crises had specifically political, not economic, underlying causes; all such crises in modern economies were the consequence of political "child abuse" of national economies by rapacious political-financier interests.

Of course, modern economic depressions occurred, like that presently onrushing in the U.S.A. and beyond at the present moment; but, the cause itself was never economic. Rather the cause was always, in net effect, political offenses against the welfare of the economy. The nature of and remedies for such crises and related calamities, must be understood from the standpoint of the science of physical economy; but, the best designed economy, like the best breed of child, will not necessarily withstand the consequences of predatory abuse.

### Geopolitics & Economic Crises

The death of President Franklin Roosevelt had been a relative disaster for what had been, otherwise, the prospects of the U.S. economy and for the state of the world in general. Nonetheless, as long as the policies of the U.S. and the international monetary system continued to echo the "protectionist" pattern in international and national affairs continued from the Franklin D. Roosevelt reforms, there was still a trend for net physical growth, per capita, of the nation's and the world's economy. Despite all foolishness under President Truman, and later, this relatively happier state of the U.S. economy continued through the assassination of President John F. Kennedy.

However, the assassination of President Kennedy was the beginning of an existential crisis for the U.S.A. and the security and economic well-being of the world at large. This downward trend had already set in from virtually the day of President Kennedy's inauguration; his assassination unleashed the nightmare which his Presidency had tended to resist, or even contain. Sev-

eral developments in the policy-shaping of his Administration, including his progressive physical-economic policies, his resistance to the intended extension of the war in Indo-China, and his launching of the commitment to placing a man on the Moon, provided the motives among certain Anglo-American circles for wishing President Kennedy and the prospective future candidacy of his brother, Robert, out of the way. The Kennedy commitments to a replica of the achievements of the Franklin Roosevelt Administration, were directly opposite to the way in which the relevant Anglo-American financier interests wished matters to proceed—the same Anglo-American-centered financier interests which had brought Mussolini, Adolf Hitler, Franco, and relevant others to power during the period from the Versailles Treaty through Hitler’s launching of war.

World Wars I and II, were not inevitable; the preparation and launching of those geopolitical wars, which had been initiated on behalf of the perceived global self-interests of the Anglo-Dutch Liberal faction, had been voluntary interventions against the way the world’s affairs were tending to move, since the interval following President Abraham Lincoln’s U.S. victory over British Lord Palmerston’s Confederacy assets.

Lincoln’s victory had realized the intention of former Secretary of State, and President John Quincy Adams’s commitment to the consolidation of a sovereign republic lying between two oceans, and its Canadian and Mexico borders. With the developments set firmly in place under the Lincoln Presidency, the U.S.A. had become an independent power which could not be conquered by any invader, excepting externally induced corruption of its policy and morals.

Against this fact of U.S. sovereignty as a continental power, the developments since the time of the U.S. Philadelphia Centennial of 1876, through the British preparations for a geopolitical war against continental Eurasia, U.S.-inspired influences on that continent, were considered a threat to the imperial interests of the Anglo-Dutch Liberal maritime power. This was the view of that power and its accomplices inside and outside the financial centers of the U.S.A. itself. During the course of the 1870s, as typified by the cases of American reforms adopted in Japan, in Bismarck’s Germany, in Mendeleev’s and Alexander III’s Russia, and elsewhere, imitation of the U.S. economy threat-

ened to build up the economic power of Eurasia to the point that the imperial domination of the world by Anglo-Dutch Liberalism’s maritime power was threatened.

The two World Wars of the Twentieth Century were the typical products of the Anglo-Dutch Liberal reaction to geopolitical conflict between the rising, combined independent powers of the U.S.A. and its friends of continental Eurasia, and what Britain’s Lord Shelburne had intended to establish as a permanent Anglo-Dutch Liberal world empire to surpass the durability of the Roman Empire.

It was not economic rivalry as such, which prompted Anglo-Dutch Liberal interests’ presently continuing imperial-geopolitical commitment to a “one world,” unipolar empire (and the presently onrushing, Anglo-Dutch Liberalism-steered, and post-1989, Thatcher-Mitterrand-launched destruction of the U.S.A.’s and continental Europe’s economies). It was a conflict between two irreconcilably opposing social systems, the Anglo-Dutch Liberal imperial system aimed at permanent world government (e.g., “globalization”), versus the concept of a system of respectively perfectly sovereign nation-state republics, as that latter system is typified by the American System as described by the U.S. Treasury Secretary Alexander Hamilton who was shot by a British spy, Lord Shelburne’s and Jeremy Bentham’s Aaron Burr.

There is no inevitability of recent or future cyclical depressions on this planet, but only the opposition, as typified by the expressed outlook of H.G. Wells and Bertrand Russell, to that science-driven economic development which would carry the planet through the impending boundary-layers defined in terms of successive scientific-technological revolutions in world economy. For as long as we persist in the economic policies implicit in our struggle for independence, our Constitution and its provision for a national-credit system, rather than a monetary system, there was never any inherently systemic inevitability of an internally-generated economic crisis within our sovereign republic.

The challenge presented to us by the present world crises, and by the wicked role of a monstrously corrupted U.S. Bush-Cheney Administration, is not any inevitable economic crisis; nor any other potent external foe, but the domestic and foreign accomplices of that Administration and its current domestic and foreign

policies. Were the U.S. to replace the present Bush-Cheney Administration with a competent new administration—and the means to bring this change about in a constitutional way presently exist—the means of cooperation with leading powers of the world, and others, already exist, at hand, to bring the present economic and other ominous threats to civilization under control, and that rapidly.

Therefore, once we understand who, and what our republic's ultimate adversary is, and we act accordingly, we are presently situated to get on with the real business of world and national economy to which we should be attending. At that point, the subject of economic policy becomes the subject of a knowledgeable approach to dealing with the challenge of transforming an already largely ruined economy into a healthy, and permanently prosperous one.

### **The Principle of Prosperity**

The proper intention of economic policy, is not to make people rich, but to make them happy, that in the sense that the authors of the U.S. Declaration of Independence chose Gottfried Leibniz's devastating rebuke to the wicked John Locke, "the pursuit of happiness," as the avowed essential intention of what we intended to be the reigning policy of our newly created republic.

Since we all die, sooner or later, for sane people, happiness could not lie in reaching the state of death, but in our assurance of a happy outcome of our having lived a life which contributed to the virtuous aspirations of earlier generations, and the benefit of future ones.

To accomplish this, we must develop our physical economy in a fashion consistent with that definition of happiness. For a clearer understanding of that intention, we should employ the term, "happiness," as a corollary for the term *agapē* as employed by Plato and the Apostle Paul's *I Corinthians* 13. This does not mean that we should merely amuse other people, or ourselves; we should rather amuse our Creator, in whose custody our immortality reposes. I am certain that that Creator has a very well developed sense of humor, otherwise how could the prevalent foolishness of living populations be tolerated? Provided that we do our part in moving the development of the universe, and of mankind, forward, He will be amused by our little foolishnesses, as all good parents show loving tolerance for their often foolish children. Happiness lies, for us, in what we do to

secure the future of mankind, and what we do to accomplish this by such enterprises as improvements in the liveable state of our planet today, and of our Solar System for times beyond.

So, a loving, wise grandfather tells his grandson: "I helped to build that!"

The characteristic economic challenge to mankind, is the urgency of increasing what may be described as the potential relative population-density, per capita and per square kilometer. To accomplish that, we must take into account the fact, that each discovery of universal physical principle is both a source of increase of the power of the human species, but also a boundary condition which threatens to become a crisis as our activities converge on that boundary as a limit.

Today, the most obvious such principled boundary is represented by the urgency of an accelerated development of the use of nuclear-fission, and the similar urgency of mastery of the technologies associated with thermonuclear fusion. We are now approaching a point at which mankind is about to become "out of resources"; we are approaching a point at which the relative physical costs for providing those resources will accelerate, unless we introduce the more advanced technologies needed to cheapen those relative costs in physical terms. In this respect, with regard to such cases as the dwindling of resources of potable water for human consumption, if we do not unleash the use of high-temperature modes of nuclear-fission-power applications, the condition of much of humanity could become desperate not long ahead.

With that in view, it should be evident that the essential expression of production is the quality of technological progress in modes of physical production which represent a net increase in effective, usable output, per capita and per square kilometer, on which secular progress in science-driven technology advances. It is science as the production of the means of producing the needed superior quality of means of production, as also product, which must be recognized as the underlying principle governing all competent views on the practice of economy.

This is not a required imposition on mankind. The development of the intellectual powers of the human individual, is both the moral obligation of each individual, and the fundamental principle of competent notions of economy.

This task can be accomplished only through the pro-

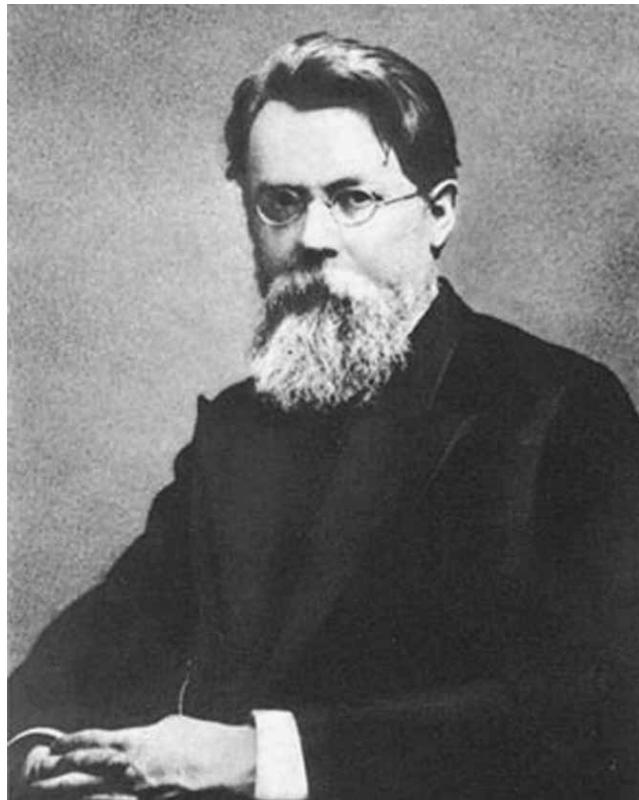
motion of the development, to qualitatively higher states, of the individual in society. This means, of course, precisely what Nicholas of Cusa emphasized as the principle of Learned Ignorance.

### What Is the Human Soul?

Academician V.I. Vernadsky, who, in 1935-1936, gave the world a rigorously scientific insight into the nature of life, also provided us with the basis for one of the greatest of all discoveries: How we might define the human soul *ontologically* in respect to Vernadsky's discovery of the relative meaning of life, life as absolutely distinct from non-living processes.<sup>19</sup> At a later point, Vernadsky made a similar argument for the distinction of the human intellect from that relatively lower form of existence, called "life." I referenced this matter in my 2005 *Vernadsky and Dirichlet's Principle*.<sup>20</sup> I summarize the aspects of that argument which are relevant for the matter of theology at hand in this presently immediate context.

On the subject of life, Vernadsky stated that although the chemical components participating in living processes, were apparently the same found in the Periodic Table otherwise, the organization of the living processes using this material was dynamically qualitatively different than that of non-living processes. Vernadsky also came to recognize that this distinction of living processes from chemical processes using the same chemical constituents, is a matter of Riemannian dynamics.<sup>21</sup>

As I stressed in the same 2005 report, human creative reason is a specific quality of dynamical principle, which stands above the living processes of the human body which it hosts. So, as life comes only from life, and



*The Russian scientist V.I. Vernadsky, in 1935-1936, "gave the world a rigorously scientific insight into the nature of life, [and] also provided us with the basis for one of the greatest of all discoveries: How we might define the human soul ontologically in respect to his discovery of the relative meaning of life, life as absolutely distinct from non-living processes."*

is never an outgrowth of non-living material as such; so, human creative reason comes only from the superior principle of human reason, and not otherwise from within the confines of living organizations as such. We should say, that the living body of the human individual is of a biological type appropriate for the support of the dynamic function of human creative reason.

For example, just as a universal physical principle such as gravitation, is, for both Kepler and Leibniz, both as extensive a form of existence as the universe, and, therefore, seemingly infinitesimal in its localized expression, those cognitive functions of the human mind which are properly associated with the functions of universal physical principles, express a universal physical principle higher than that of living processes, as a universal physical principle acting efficiently upon appropriate expressions of living processes. In brief, the intervention of this universal principle of cognition

19. Vernadsky's Russian contemporary, A.I. Oparin, wrote a widely appreciated text, published in English as *What Is Life?*, but when we compare Oparin's argument with the essential statement of Vernadsky on this subject dated from the middle of the 1930s, Oparin's argument was clearly in error *ontologically*.

20. Op. cit.

21. Near the close of the 1980s, Professor Robert Moon of the Fusion Energy Foundation, reacted to my argument on the significance of Kepler's *World Harmony* for contemporary physics matters, by returning to the continuation of his own much earlier work in challenging the radically reductionist "magic numbers" doctrine respecting isotopes. This prompted consideration of the deeper implications of the same ordering according to truncated Archimedian solids which arises in Kepler's *World Harmony*. This poses issues of such physical harmonics, as this bears on living chemistry, as matters of relevance for today's emerging "isotope economy."

on the relevant biological processes, uses those processes as a medium for its efficient expression.<sup>22</sup>

Thus, through the synthetic action of universal creative powers of human reason, the relevant aspects of biological processes are used by the dynamic of creative reason, as the dynamic principle of life uses the otherwise inorganic material of living processes.

Thus, the non-living domain, life, and human creative reason, express respectively distinct, but interacting dynamic principles of the universe as a whole.

As Cusa's criticism of the error of Archimedes on the subject of the isoperimetric principle expressed by the circle, echoes the relevant conception, the cognitive powers of the specifically human individual mind are not a secretion of the living body, but a principle which subsumes the living body *dynamically*.

This dynamical principle of human reason, reflects the idea of the image of the Creator. There can be no doubt of this specific comparison, since only the creative human intellect, whose characteristics do not exist in lower forms of life, is capable of participation in the quality of ideas we associate with the person of the Creator. On this account, the fact that creative intellects among human individuals are creative from the vantage-point of the standards of dynamics, we need have no doubt of the existence of the Creator as an intentional being.

It is a correlated matter of significance, that the act of true creativity, in physical science, or Classical modes of artistic composition, or both, is associated with the highest form of pleasure, pleasure expressing a quality we experience as *serenity*, as an *impassioned* sense of *delightful contentment*. The greatest Classical musical compositions, for example, which adhere to the choral principles of Florentine *bel canto* and the counterpoint of J.S. Bach and such adherents as Joseph Haydn, Wolfgang Mozart, and Ludwig van

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22. There is clearly something about the physiological basis for the cognitive processes of the human individual mind, which is "resonant" for the function of the quality of human cognition expressed as the discovery of a valid universal physical or ontologically comparable principle of efficient knowledge. However, what is produced by this faculty, is not produced by the physiological basis, except as seeds of a higher quality of existence find the relevant physiological "ground" suitable for the planting of germs of cognition. For example, in typical contemporary classroom education, the pupil is induced to respond to the request for an identification of a physical principle, by identifying a mathematical formula! For the student, the principle itself does not exist! Such is one of the typical effects of reductionist modes in education.

Beethoven, have the marvelous power of touching something resonant within the person. It is the same quality of Classical passion, when experienced in connection with a scientific discovery, which is crucial for science, too.

Cusa's treatment of the circle, in correcting the error of Archimedes, is, therefore, of crucial clinical significance, in our search for insight, for our reaching out in our zeal to touch the substance of the human soul within ourselves, or in others. We, with similar faculty, may smell the evil, or, otherwise, the spiritual void, in one, like the faker working as a huckster in the pulpit, who has, in effect, lost his or her soul, or simply seems never to have had one. I have found that I could often, if not always, "smell"—in the spiritual sense—a faker in my vicinity, and may react, and that appropriately, to that sensation.

Creativity, both Classical artistic creativity and its necessary twin, scientific creativity, are not as much a means to an end, as an end, a true *good*, in and of themselves. Be patient; it will do good, when the occasion arises. Creativity, so defined, is the true font of genius, of the great Classical artistic and scientific creations by and for humanity. It is through that good expressed by the act of discovery of a universal physical principle, such as the act of reliving Kepler's discovery of universal gravitation, that the student experiences the ontological quality of individual human existence, the famous "spiritual" quality, which the human personality shares with the Creator. Such is the ontological quality of *spirituality* of appropriately impassioned performance, in Florentine *bel canto*, of a contrapuntal choral work such as Bach's *Jesu, meine Freude*. Such is the creativity of Wolfgang Mozart and Ludwig van Beethoven.

That sense of the human soul is what is entirely absent in the reading of the translation of Wenck provided by Hopkins. It is my excellent judgment on this matter, that that shortcoming was not introduced by Hopkins' scholarly craftsmanship. Similarly, there was never any true creativity expressed in Norbert Wiener's work on the subject of "information theory," nor the argument for "artificial intelligence" by John von Neumann. Those among us who have souls, and know them, are saddened by the "information theorists," in whom, as in the creatures or the author of H.G. Wells' *The Island of Doctor Moreau*, in which activity of the spoor of a nearby human soul is not to be found.

## Wenck's Failed Theology

From that vantage-point, we should recognize that Wenck's problem is not so much his expressed difference with Cusa, as much as with his own, unresolved doubts respecting the very idea of God. He wishes to believe that he can portray himself as believing in the Creator, even perhaps passionately, despite what his own document exposes as his implicit lack of a rigorous proof of, or passion for that which he desires to believe. Of all of the works of Cusa which were available to be attacked, it is clinically crucial that Wenck should have chosen Cusa's founding of modern experimental physical science as his target; that choice is singularly, crucially revealing of the existence and nature of Wenck's rather typical own, deeply underlying theological doubts. His polemic against Cusa does not express a mind which knows the Creator.

For example: The notion of the existence of a Creator, is potentially troublesome to almost any would-be believer, or atheist, alike. There is no shame in that itself; there is no shame in the existence of honest ignorance. The risk is that *an unrecognized* ignorance may tempt the misguided human mind, as if out of desperation, to some more or less nominalist, Sophist-like presumption, a presumption which seems to explain away painful doubts, but, actually, pollutes uncertainty with madness. This often goes to the point of a personal experience of an existential crisis as by professed existentialists as such, respecting one's belief in the reality of one's sense of even the existence of one's self. Unresolved, this may lead to the conception of dangerously false beliefs respecting the notions of human individual mortality and immortality.<sup>23</sup>

For example: The very idea of death poses the question of immortality: a question which afflicts every child as soon as the death of a member of the family, or similar event, is experienced.

For example: "Does Cartesian 'I-ness' correspond

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23. The argument applicable to the case of Wenck, is one also made by Philo of Alexandria, today esteemed as a rabbi and friend of the Apostle Peter, who has been often referenced as an authority by notable Catholic theologians. Philo condemns that doctrine of Aristotle which favors those admirers of Bernard Mandeville, François Quesnay, Adam Smith, Jeremy Bentham, and Satan, who insisted that God's act of Creation, by creating a perfected universe, prevented God Himself from changing it: implicitly leaving the power of change to Satan, or that Whore of Babylon better recognized as the Roman Empire of Capri residents Augustus Caesar and the Tiberius who assigned Pontius Pilate to Judea. The real universe is not Aristotelean, but, rather, conceptually, a Platonic system of continuing (i.e., anti-entropic) creation.

to an actual, immortal existence?" The existential predicament of Husserl offshoot and Nazi Party philosopher Martin Heidegger, and his neo-Kantian friends without Nazi Party-cards, Horkheimer, Adorno, and the neo-Kantian Arendt, is relevant here: "If so, in what way would this immortality be efficiently expressed after I am dead?" "If I am a soul without a body, even 'thrown,' by reliance on reductionist methods such as those of the Cartesians, into a society of which I am not a functionally integral part, how can an immaterial being, imagining himself living in such a world, act efficiently upon the material universe? Why should a Heidegger, or Descartes, or John Locke, even try?!"

Therefore, for example, for reason of such considerations, what the frequently troubled would-be believer thought his Creator to be, has been a reflection of what his religious belief prompts him to believe about the way in which the universe is organized. This is the case, whether he, or she considers the human individual as either a functional part of that universe, or the universe as merely a vehicle within which he happens to be a passenger at that moment, but to whose actual nature he is otherwise alien.

In modern society, a relevant problem of conception is implied. "Do the presently accepted doctrines of official science permit the included, *efficient* form of existence of an immortal human soul?"

Notably, Wenck's reaction, on this account, to *De Docta Ignorantia*, is not a unique event during that general period of history. Wenck's attempts, which were visibly rooted in political motives of the time, were followed by the attack on Cusa's *De Docta Ignorantia* by no less than the Venetian spy, Zorzi (aka Giorgi), who served in the singularly unpalatable role of marriage counselor to that ogre known as England's King Henry VIII.<sup>24</sup>

For example: During the lifetimes of Cusa and Wenck, the chief enemy against which actual Christianity was obliged to wrestle, was, most immediately, the past and resurgent influence of a Venetian financier oligarchy, an oligarchy which had previously ruled Europe

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24. In his major work, *Harmonice Mundi*, Francesco Zorzi (Giorgi) attacks Cusa's *De Docta Ignorantia*. In what should become known as the founding statement of Speculative Freemasonry, Zorzi states: "The seeker after the Monas [the one] may retreat into negative theology and the 'Docta Ignorantia,' or he may seek to follow the divine Monas in its expansion into the three Worlds" (cited in Francis A. Yates, *The Rosicrucian Enlightenment* (Oxford: Routledge, 1986).

during the period from the time of the Albigensian Crusade, and of the Crusade known as the Norman Conquest, and beyond.

It is notable on this account, that the society of the Norman Crusaders, which was dominated by the role of the Venetian financier-oligarchy, was, systemically, a society cast in the “Spartan” model of the pagan Olympian Zeus portrayed by Aeschylus’ *Prometheus Bound*, a so-called “oligarchical” or “traditional” society, in which the majority of human subjects were forbidden to express those creative powers of the individual mind which distinguish the human individual from the beasts, a society in which the image of a reigning God is cast in the image of a beast who is a beast to mankind, as were the Grand Inquisitor Tomás de Torquemada, the revolutionary Martinist freemason Count Joseph de Maistre, and as were the followers of de Maistre, Napoleon Bonaparte, Adolf Hitler, or U.S. Vice-President Dick Cheney today.

So, the conflicts which those contemporaries, and successors of Cusa, Wenck, and Zorzi experienced, were dominated by the process leading, from A.D. 1453 on, into the onrush of what became the A.D. 1492-1648 religious warfare launched through the same Grand Inquisitor, Tomás de Torquemada. This was the Torquemada, who was also the Grand Inquisitor of a perceptive Dostoevsky’s novel, who was also used as a model, by Martinist freemasonry’s Count Joseph de Maistre, for the defense of the French Reign of Terror, and for de Maistre’s design of the remade personality of that Emperor Napoleon Bonaparte who was to serve, later, as the model for the Adolf Hitler tyranny.

This same period, A.D. 1492-1648, was also a period of the transition within Venice, to the hegemonic influence of the empiricist model, imitating the dogma of William of Ockham, as this shift was launched by the Paolo Sarpi who remains the central figure of those currents of modern European culture which are the principal intellectual source of threats to the existence of our constitutional U.S. republic today. Ockham and Sarpi are the special root of the dogmas, based, like gambling advocate Galileo, on the usurious irrationality of statistics of gambling, for both science and theology, of imperial Anglo-Dutch Liberalism. It was against that Anglo-Dutch Liberalism which I was, chiefly, impelled to wrestle from childhood on, to the present time.

The political issue of the leading work of Nicholas



*“Now, eighteen months after the first light, three months after the true day, but a very few days after the pure Sun of that most wonderful study began to shine, nothing restrains me; it is my pleasure to taunt mortal men with the candid acknowledgment that I am stealing the golden vessels of the Egyptians to build a tabernacle to my God from them, far, far away from the boundaries of Egypt. If you forgive me, I shall rejoice; if you are enraged with me, I shall bear it. See, I cast the die, and I write the book. Whether it is to be read by the people of the present or of the future makes no difference: let it await its read for a hundred years, if God Himself has stood ready for six thousand years for one to study Him.”*

—Johannes Kepler, *Harmony of the World*

of Cusa, was the combined effect of Cusa’s outline of the principle of the modern sovereign nation-state republic, as in *Concordantia Catholica*, and the complementary establishment of modern physical science, as in works beginning with his *De Docta Ignorantia*. Both of these contributions to the emergence of modern society, arising from the rot of preceding oligarchical systems of rule, have been, combined as the usual motives for various sorts of attacks on Cusa’s work, including the attacks on Kepler, Leibniz, et al., by the empiricist followers, such as the pro-imperialist Anglo-Dutch Liberals brought into being by Paolo Sarpi’s neo-Ockhamite empiricism.

Reviewing what I have argued in this report, thus far, the trouble with Wenck is that he shares with the evil Olympian Zeus of Aeschylus' *Prometheus Bound*, the oligarchical intention to degrade the mass of human individuals into virtual, domesticated, or hunted cattle. To deny those persons the right to fulfill their essential obligation as creatures made in the likeness of the Creator, as *Genesis* 1 prescribes, and as the pervasive principle of *De Docta Ignorantia* expresses this.

Wenck's fault is therefore coincident with the charge against Aristotle made by Philo of Alexandria, that Aristotle's doctrine degrades the role of the Creator Himself to the status of a Personality made impotent by the Hand of His Own Creation of a universe of a fixed order, in which existence of the anti-entropic power of continuing Creation is denied to even the Creator himself, to degrade the Creator Himself. Wenck is a lackey of an oligarchical system, a system which denies the existence of that specific quality of action, as expressed by Cusa's principle of unknown learning, which defines the human individual as made in the likeness of the Creator.

My own experience with these matters, from childhood and adolescence on, is a relevant illustration of precisely this general nature of the theological dispute expressed by Wenck's politically motivated attack on Cusa.

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### 3. Euclid: The Relevant Paradox

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Review the matter which I have set before us from my own, autobiographical standpoint. Compare that with your own relevant experience. Since the essential challenge before us is care for the fostering of the development of the children into the young adults of a quality required today, look at this from the standpoint of my own relevant, personal experience in treating the challenge to which I point here.

A clear-headed, clinical sort of insight into the roots of such apparent existential paradoxes as those, demands both the adoption of the standpoint of Riemannian dynamics, and, also, a correlated recognition, that Riemannian dynamics is a rebirth, in an amplified form, of what was already understood, as the principle of action of *Sphaerics (dynamis)*—Leibniz's *dynamics*, and the anti-reductionist physical *dynamics* of Gauss



*“On the matter of science, many theologians have tended to do as that Sophist, the notorious apriorist Euclid [shown here] of Euclid's Elements had done, in his mutilation of the original work which he parodied, destructively, from, chiefly, the Pythagoreans and the circles of Socrates and Plato.”*

and Riemann, bequeathed to modern times by the relevant ancient Greeks of such persuasions as the Pythagoreans and the other circles of Socrates and Plato.<sup>25</sup>

The essential existential paradoxes embedded in the more customary beliefs of today, are expressed in a pathological form which is equivalent to the radical reductionist's: *“You can not avoid the inevitable trends in current history.”* The pessimist who expresses that reductionist's outlook, rejects the idea of acting upon the

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25. As I have stressed earlier, here: In competent physical science, there is a necessary distinction between mathematics as such, as is proposed as the characteristic fallacy of the Euclidean, and the mathematics which is employed as the mere message-carrier of physical science. This distinction, which was made emphatically for all competent strains of modern science by Bernhard Riemann, has been given a brilliant broader dimension by the work of Academician V.I. Vernadsky's experimentally rigorous definition of the distinctions among the non-living, the Biosphere, and the Noosphere. Prior to Riemann and Vernadsky, this was already systemically characteristic of the methods of physical geometry presented by Kepler in his *The New Astronomy* and *World Harmony*.

body of ostensibly axiomatic, apparently reigning assumptions. That pessimist sees himself, or herself, as a statistical-mechanical “blivet” being moved statistically as he, or she were the typical inhabitant of a Boltzmann’s Machian gas system. The popularity of what are intrinsically generally admired mechanistic-statistical economic-trend projections, is typical of a widespread infection of popular and other leading opinion with the pathology of such cultural-existentialist pessimism.

### A Lesson From Experience

Probably, the most useful paradigm for pedagogical study on account of that implicitly existentialist form of pessimism, is the case of the Sophist Euclid who is known to us, chiefly, through the influence of the teaching of either Euclid’s *Elements* or some derivative. As I have proposed here, take my own experience as illustration.

Somewhere in the course of childhood, I became aware of the existence of the actual cause for my doubt about the source of my own most troublesome sorts of what were largely induced, but also habituated beliefs.

I began to understand this conflict at the time I was confronted with an adolescent’s standard secondary-school course in Plane (pro-Euclidean) Geometry. At that time, after studying the geometry of structural beams at a nearby U.S. Navy base, I had already, like the reformers of the Eiffel Tower more recently, recognized the importance of the role of choices of geometry in optimizing the ratio of strength to weight-of-mass in such structures; but, until that first day in geometry class, I had yet to be efficiently confronted with awareness of the contrary, obviously false implications, of the idea of an abstract geometry which is premised upon so-called Euclidean definitions, axioms, and postulates. Until that day, the idea of a Euclidean *a priori* matrix, had simply never occurred to me. Therefore, I had the consequent relative advantage of recognizing, more or less immediately, the falseness of Euclidean and similar systems, from the outset of that encounter.

My reaction to this classroom encounter had come two years after I had begun what became a habit of reading from English translations of French and German, in addition to English works of notable Seventeenth- and Eighteenth-Century philosophers. The ex-

perience of the encounter with the geometry class had two principal, complementary effects. It steered my attention into what soon became an adherence to the available work of Leibniz, while clarifying my own seemingly instinctive, and powerfully persisting reluctance to accept most of what I had been exposed to as conventional dogma of classroom and larger society alike.

At that time, except for Leibniz’s writings, I had virtually no clear perspective presented to me from available sources, until after my later return from war-time military service. My own views were clear to me, from my adolescence, onward, as were certain essentials I had adopted from Leibniz. However, otherwise, late into my adolescence, I was only increasingly well-informed of the evils of empiricism in general, and Kantianism in particular. My own situation, on this account, reflected the extent to which, most young citizens of that time shared my typically American, healthy contempt for prevalent European oligarchical traditions. I was caught, otherwise, in an environment more or less dominated by the then prevalent, anglophile corruption of U.S. culture. This corruption of my cultural surroundings included the habitats of public and higher education, which were, then, like most popular opinion, predominantly, virtually a desert of rampant empiricist, or even worse ideology.

My first post-war philosophical reaction, on that account, was my wrestling with the concept of a principle of life as such, a concern merely typified by my wrestling with a text by Pierre Lecomte de Noüy.<sup>26</sup> The crucial development, however, was my, subsequent, hostile reaction to the notion of “information theory” which was featured in my otherwise amiable, early 1948 reading of a pre-publication reviewers’ edition of Professor Norbert Wiener’s *Cybernetics*.<sup>27</sup> My reaction against the cultish dogma of “information theory” from this reading of Wiener’s work, became, immediately, the central object of my intellectual life, up through the point, in 1952-1953, that successive study of leading writings of Georg Cantor and then Bernard Riemann’s 1854 habilitation dissertation, provoked my defining of

26. Pierre Lecomte de Noüy, *Human Destiny* (London: Longmans, Green & Co., 1947).

27. Norbert Wiener (New York: Wiley, 1948). Wiener’s presentation of the notions of design of control mechanisms was most pleasing. It was his philosophy, thoroughly polluted with the influence of Bertrand Russell, which was disgusting.

the principle of *potential relative population-density*, as the essential functional distinction of the economy of the human individual and his, or her species from that of the beasts.

This reaction against Wiener's "information theory," as integrated with my continuing concern with the distinction of life from non-living processes, and of ideas of universal physical principle from mere mathematical formalism, was complemented by my fascination with the subject of the role of Classical irony in poetry, prose, and the related effects of Classical musical composition and performance. After wrestling with the thesis of Riemann's habilitation dissertation, all of these topics were unified for me as facets of a single, subsuming conception. That conception underlies my reaction to Hopkins' referenced title here. That single conception can be brought into a single focus on the subject of the Sophistry of Euclid's *Elements*.

During my adolescence, I had already rejected Euclidean geometry, in favor of the influence which notable writings of Leibniz had exerted. The idea of a physical geometry gave my thoughts a certain direction, if not a completed definition of such a geometry, until about the time of my thirtieth birthday, when Riemann's habilitation dissertation, striking like a lightning bolt, clarified my thoughts on this matter. The essential influences which shaped the direction of my thinking during the 1945-1953 interval, were, first, the notion of living processes and their residues as a distinct physical-space, not simply included in a physics of non-living processes, and, second, from 1948 onward, that, contrary to Wiener, the creative powers of the individual mind were a distinct quality of process, as distinct from both living and non-living processes as living processes were distinct from non-living. Riemann's habilitation dissertation crystallized this map of reality for me, and paved the way for my later, gradual adoption of the work of Vernadsky, more and more, as key for a more adequate understanding of the universe.

In all of this, from my adolescence on, I was always an advocate of the notion of a principle of Leibnizian dynamics, as opposed to both a Euclidean and a Cartesian mechanistic-statistical system.

Presently, experience and its correlatives have clarified many things for me, a clarification corresponding to Cusa's concept of "learned ignorance." The greater part of the advantage gained in this manner, was not

individual study as such, but by engagement with some leading scientists of my own and the preceding generation, and others, including my own obligations incurred in my collaboration with my own immediate associates and many others. In all of this, the most crucial step of indispensable "unlearning" has been my recognition of the intrinsically destructive inhuman effects of a belief in the form of Sophistry known as Euclidean geometry.

To understand this effect of the teaching of Euclidean geometry, we should look back to a time when most of the core of ancient knowledge of geometry had been completed, as by the Pythagoreans and the other circles of Socrates and Plato. There is virtually no theorem or related material of any importance which was not correctly understood by these circles, prior to the falsification of that knowledge embodied in what we have today as Euclid's *Elements*.

That fact should prompt a thinking person to ask himself, or herself, why should Euclid have committed that particular sort of intellectual crime against humanity? As I have already noted, above, the essential answer to that question is that Euclid was a Sophist. The significance of this fact is made accessible through study of surviving evidence of the actual principles of physical geometry as developed by the circles of the Pythagoreans, Socrates, and Plato, during a period concluding with Plato's death.

The Sophists were the most important of the reductionist cults spawned, chiefly, by the Delphi Apollo cult, which introduced a method, which was later copied by corrupting agencies such as the existentialist fanatics of the Congress for Cultural Freedom, to corrupt the minds of the young people from leading families of Athens in a manner which was imitated in the 1945-1956 conditioning of newborn persons from families of a general middle-class or upper-class white-collar category. All of the worst expressions of the 1968er "Baby Boomer" generation, which have contributed essentially to destroying the economy and social life of the U.S.A. and western and central Europe over the period since Spring-Summer-Autumn 1968, are outcrops from the kind of influence represented by hateful existentialist creatures in the following of Heidegger, Horkheimer, Adorno, Arendt, and the like, and the influence of the British psychological-warfare branch's London Tavistock Clinic.

The importance of Euclid in his lifetime, and up to

the present time, has been the use of his teaching of geometry as a way of destroying the creative potential of the human mind. Take this into account, to understand a reading of Euclid, called “information theory” and “artificial intelligence” in destroying the morals and productivity of the minds of U.S. citizens today.

### The Pestilence of ‘Environmentalism’

Euclid was a product of precisely that kind of intention and product in his time, and thereafter. The key to understanding this fact is a reference to the actual historical implications of Aeschylus’ *Prometheus Bound*.

Like the virtually identical mass-brainwashing of the leading layer of the “Baby Boomer” generation, in the anti-human, neo-Dionysian “Luddite” cult called “environmentalism,” the idea of “environmentalism” has arisen in the post-1945 interval as a crucial element of a social policy intended to eradicate the existence and influence of the U.S.A. from future world history.

The U.S. battle against the Confederacy was prompted by the British Empire’s launching that Confederacy as a tool of Britain’s Lord Palmerston. Our Civil War was a battle against the British Empire’s avowed intention to break up the U.S.A. into a squabbling set of baronies, whose quarrels would ensure the degradation of the territories’ quarreling elements into a virtual state of bucolic agrarian imbecility of the type spread through the slave-state regions.

The action of the Anglo-Dutch Liberal interests, today, is to realize that same kind of intention, an induced state of a bucolic form of economic imbecility, in the Americas and throughout continental Europe. That is the imperial purpose of the Anglo-Dutch Liberal form of neo-Venetian financier-oligarchical imperialism. That is the meaning of “unipolar world,” of the Tower of Babel called “globalization,” and of the



EIRNS/George Hollis

*For LaRouche, “the most crucial step of indispensable ‘unlearning’ has been my recognition of the intrinsically destructively inhuman effects of a belief in the form of Sophistry known as Euclidean geometry.” Here, he addresses members of the Youth Movement in Leesburg, Virginia, Nov. 18, 2006.*

launching of the present U.S. Bush-Cheney puppet regime as the instrument for bringing about the self-destruction of the U.S.A. itself.

It is a clash between two opposing social systems, that of the Anglo-Dutch Liberal form of one-world empire, and the type of sovereign nation-state republic the U.S. was created to become. That was the issue in February 1763, in July 1776, and in the intention of President Franklin Delano Roosevelt for the order of affairs in the post-war world as a whole. Only through the establishment of truly sovereign nation-state republics as the right of all peoples of the world, as President Franklin Roosevelt had intended this, in opposition to Britain’s Winston Churchill, can this planet be a safe place for anyone to live during the generation or two immediately ahead. That is, on the condition that a driving commitment to the realization of the economic benefits of fundamental, scientific, Classical cultural, and technological progress is the moral standard for education, economic policy, and personal morality in times to come.

The implications of the case of the defense of John Wenck by certain circles, up through the present day, are to be recognized in that light.

# Trump Opens the New Year in Profound Dialogue with the American People and Collaborating Heads of State

by Stanley Ezrol

Jan. 5—President Trump has taken the most dramatic initiatives of his Presidency during the closing weeks of 2018 and the opening of the New Year. Helga Zepp-LaRouche used her 2019 New Year's address to remind the world that she had designated 2018 as the year to destroy geopolitics, the British Imperial policy of unending conflict for the purpose of maintaining their power. With the removal of inept geopoliticians ex-Secretary of Defense Jim Mattis, ex-UN Ambassador Nikki Haley, and ex-Chief of Staff John Kelly from his cabinet, as well as the soft-on-Mueller-gate Attorney General Jeff Sessions, Trump has begun a new level of honest and direct communication of his views on the necessary future course of the nation freed from the commitment to permanent warfare.

At the same time, other heads of state, including China's Xi Jinping, North Korea's Kim Jong-un, Mexico's Andrés Manuel López Obrador and Russia's Vladimir Putin, with whom Trump has established close ties of cooperation, have made complementary contributions to educating the peoples of the world on how sovereign nations can cast aside geopolitics and collaborate to achieve peaceful economic, cultural, and scientific progress in pursuit of the common aims of mankind.

## Trump's Initiatives for the New Year

Last August, Trump negotiated a totally unexpected and seemingly improbable new trade agreement with

Mexico and Canada, to replace the Clinton Administration's North American Free Trade Agreement (NAFTA). He has recognized that the economic growth he is planning is an essential part of addressing the migration crisis, as has newly elected Mexican President López Obrador, who has spoken of his reverence for the methods of Franklin Roosevelt, and who organizes daily

7:00 a.m. conferences to broadcast his intentions directly to Mexico without interference from the sleeping journalists. Trump has vigorously renewed his campaign to establish a wall to shut down the open border that now includes unwatched and unprotected segments of lengths of more than 1,000 miles.

On December 19, the President announced that the U.S. would withdraw its troops from Syria, and, eventually, Afghanistan, leaving these nations to settle their affairs through sovereign and agreed collaboration with neighbors, including Putin's Russia. Defense Secretary

Mattis submitted a defiant letter of resignation the next day. In confessing that he had always disagreed with Trump's consistent promise that he would end these and the other Bush/Obama "forever wars," Mattis revealed that he had been a geopolitical traitor. He arrogantly announced that he would continue in office through February to make sure that his views, rather than the President's, were presented to the annual Congressional review and the NATO Ministerial Meeting. Trump ordered his removal



Andrés Manuel López Obrador, President of Mexico.  
Government of Mexico

from the Pentagon within eleven days and triggered an avalanche of Congressional and news media attacks demanding a return to the permanent war policy.

In response to Kim Jong-un's New Year's address that the geopolitical media interpreted as a threat to renew nuclear weapons development, Trump tweeted, "Kim Jong Un says North Korea will not make or test nuclear weapons, or give the [technology] to others— & he is ready to meet me anytime ... I also look forward to meeting with Chairman Kim who realizes so well that North Korea possesses great economic potential!" He has reiterated this hope on several occasions since.

### **Campaigning to Engage America & the World**

To secure the successful implementation of these policies, Trump has launched a new approach to engaging the nation in discussion that supersedes the confusing swirl of tit-for-tat tweeting and other nonsense that has eliminated real understanding.

On January 2, Trump launched this campaign from the White House. From Noon until 2:00, the President conducted a [cabinet meeting with news media present](#). Each cabinet member presented a prepared statement on his or her concerns, focusing on border security. Trump intervened at will to present his views and explanations. After the presentations, the press asked questions for about 20 minutes.

At 3:00, Trump met privately with the Congressional leadership to discuss border security, beginning with a briefing by Secretary of Homeland Security (DHS) Kirstjen Nielsen. After the session, Republican Minority Leader Kevin McCarthy and Whip Steve Scalise reported that Nielsen was prevented from completing her briefing by repeated interruptions from Democratic Senate Minority leader Charles Schumer. Democratic Speaker of the House Nancy Pelosi and Schumer then emerged to report that their



DoD/Amber Smith

*Former Secretary of Defense James Mattis resigned the day after President Trump announced plans to withdraw U.S. troops from Syria.*

only interest was in introducing what they called Republican bills to re-open the government. Clearly, the bills they called "Republican," did not include the President's plan for border security. Trump asked the Congressional leaders to return on Friday, January 4. After that session, Pelosi and Schumer announced that the only thing they had said there was that nothing could be accomplished with the government shut down.

Trump then presented a one-hour [press conference](#)

on the White House steps. He carefully reviewed his concerns and patiently answered all questions, no matter how ridiculous or repetitive, from the unusually congenial and appreciative press corps. His language was sharp at times, but he went well beyond the "One question, one follow-up" rule which is standard at these events, to try to make sure that his intentions were clearly understood. As he explained it, "I'm not into names, I'm into production. I'm into something that works." He, by contrast with the media, had his evidence at hand if not in his head. Citizens should inform their understanding of this presidency by weighing Trump's actual performance

against the idea of the boorish know-nothing promoted by the twitterverse.

### **Immigration and International Trade**

Trump's primary concern was the issue of border security, and he said he would persist for "as long as it takes" to reach an agreement and was considering announcing a national emergency if Congress did not agree.

Things that may be surprising to CNN enthusiasts include the President's concerns about the cruelty experienced by those induced to attempt illegal crossings, emphasizing the threats to unaccompanied children and women (a third of whom report sexual assaults in the course of their approach to the border). He insisted that with hundreds of miles of open border in wilderness



White House

*President Trump holds a news conference in the Rose Garden at the White House to mobilize the American public behind his plan for a border wall between the United States and Mexico, Jan. 4, 2019.*

areas, it was impossible to keep drugs, terrorists, human traffickers, and other unwanted intruders out of the country without an effective wall or fence. He explained that knowing a barrier would be in place to stop border crossing would deter many from the dangerous and sometimes deadly attempts they are making. He also described in general terms how the border areas DHS does not control, are actually controlled by the violent organized crime networks running drugs and prostitution, including child prostitution, among other criminal operations.

Trump presented his views on DACA (the Deferred Action for Childhood Arrivals order) to explain

his approach to immigration policy. (DACA was an Obama executive order which allowed some immigrants who were illegally brought here as children, to avoid deportation and eventually get work permits.) He said DACA participants had a long history in the United States, and some never learned the language of their birth nation. The U.S. needs these and other capable immigrants. He said he hopes the Supreme Court will pave the way for negotiations on this issue by overturning the extra-legal Obama executive order on which DACA now is based, “Because, frankly, if they rule the way it is, it gives the President too much power. Can you imagine me saying that? But I

would be entitled to the same power.”

### **It’s Up to the People Now**

This article has only communicated in small part the efforts the President has made to make his concerns and intentions understood, but exactly what the President and Congress will do, when and how these plans are refined and implemented, and how effectively they function, is our responsibility. While Democrats and Republicans argue over who “owns” the shut-down and who “owns” our other failures and successes, never forget that our Constitution assigns ownership to no party, no official, no department, but to “We, the people.”

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