

## The Fundamental Scientific Issues of the Future and the New Space Silk Road

# Can Europe Play a Key Role in Science?

by Jacques Cheminade

*Jacques Cheminade is the founder of the French political party, Solidarité et Progrès (Solidarity and Progress) and was twice a candidate for the French presidency. We present here his edited remarks as prepared for presentation on Nov. 16, 2019 at the Schiller Institute Conference, “The Future of Humanity as a Creative Species in the Universe,” in Bad Soden, Germany.*



EIRNS/Johanna Clarc

Jacques Cheminade

To answer such a question is quite a challenge, and should be one for all of us. It demands a heightened consciousness and lucidity, because the winds of policy-shaping have been blowing in the wrong direction for too long. The European Union has betrayed the idea of Europe, stifling its historical impulse for creativity. European citizens have been deprived of the possibility of experiencing valid creative discoveries, which represent the most satisfying, exciting and human joy. European citizens have been, by the same impulse, blocked from acting for the “advantage of the other,” which is the founding principle of European nation-states, embedded in the 1648 Treaty of Westphalia.

We have indulged in selfishness; we have been infantilized by the greed of the markets and by the hypnotic images of the media. Compared to what is happening in the outside world—the “win-win” concept of the New Silk Roads—the ongoing insurrection of many peoples against their exploitation, their exclusion and their failed leaders—we are here in the “Valley of the Clueless,” not having today the excuse of a military occupation, like East Germany had before the fall of the Berlin Wall. The Western wall is crumbling, and our so-called leaders are blind and in turn, blinding most of us.

My commitment is therefore to use this speech to

take us on a journey outside that “Valley of the Clueless,” run by a mutant form of the British Empire, and into the future where our mandate is to build beyond. The historic enemy of the British Empire, Lyndon LaRouche, will lawfully be our guide in that scientific challenge to recover Europe, so that it can play a role in science again.

In its present shape, under the European Central Bank of Christine Lagarde and her controllers of the City of London, my answer to that the capacity of Europe is as negative as the interest rates Lagarde is committed to enforce. Nonetheless,

inspired by the optimism of Lyndon LaRouche, it is clear that we can bring to the world what it demands from us, provided we change our minds and open our eyes. Not only for our own sake, but because the peoples of the world need us, to join with Russia, China, and the United States, to create the common future.

We have to throw our delusions of “an independent Europe against all,” down the river—the colonial delusion to divide and conquer; and bring instead the best of our culture as a catalyst for the world to come. The ongoing insurrection of the of peoples in the world, calls for justice and mutual development but, as Rosa Luxemburg said in her times, it is a “mass strike ferment”—which, by itself, cannot develop a vision and an articulated project for the future. They need those among us who can help them to show the way and lead the march.

It is for this reason that the question of science is so important. The true scientist is in coherence with the impulse of a mass strike ferment which is searching for something that goes beyond the prevailing “rules of the game”; the true scientist explores the unknown, makes discoveries and inspires people beyond the existing

logics. Our challenge is to bring our minds into the minds of those who have such a capacity to create, in order to shape the social environment necessary to win over our enemies. If we leave the control of culture to our enemies, we are doomed to fail. That's why we Europeans have to define a new manifold for our nations, freeing ourselves from our "willing servitude" to the oligarchy that controls our habits.

It is a very concrete question: we have to stop being pragmatic. To do that, we have to first understand what true science, true creativity is. This is the "Purloined Letter" of Europe: the letter is in the middle of the room, it is the historical contribution of our scientists, but we don't manage to see it. We have become as stupid as the proverbial Parisian cops of the story of Edgar Allan Poe.

What is taught at school and in our universities or even at the French High-Level Education schools may be useful to behave in a pre-defined world: but it is fake science. When I was in my early thirties, I had a very strong doubt concerning the quality of what I was fed in those schools and LaRouche challenged my mind with his ideas, and confirmed those doubts. To play a role in science, one must first understand what science is! Sometimes, as a Muslim hadith says, we have to look for it as far away as in China.

Let's begin our journey at this starting point. Sebastien Drochon, Megan Beets and Jason Ross will accompany us later through our journey. Science is not statistics, reflecting past trends—it is creativity to master the future. The laws of the universe are not embedded within the domain of sense perceptions as such, but lie within man's ability to change human behavior to such effect that man's per capita power over the universe willfully increases.

### Art and Science Are One

As Lyndon LaRouche wrote:

The key to the relative uniqueness of my own discoveries, is my shifting the investigation of the way in which the individual human mind generates experimentally validatable discoveries of physical principle: the rejection of the parochial view of "physical science," as customarily defined during the Twentieth Century, and, employing for physical science, instead, the standpoint of metaphor in Classical art forms of poetry, drama, musical polyphony and the plastic arts. . . ."

An intuitive understanding of this statement can be

guessed by a profound look at Leonardo da Vinci's paintings and into his notebooks, where elements of music, of drawings and discoveries of principle, including the principle of a functioning steam engine, appear in the same pages!

Giorgio Vasari also reports that Leonardo had invited musicians and singers to come while he was painting the *Mona Lisa*, in order to concentrate the mind in the domain of creation. And in one of Leonardo's many quotes comparing the different arts, later presented as his *Treatise on Painting*, where he notes the "contentment" that musical harmony produces in the ear, he adds the following for painting:

Much more will be produced in painting, by the proportioned beauty of an angelic face; a "concertante" harmony results of its proportions, which speaks to the eye at the same time that music speaks to the ear. And if such a harmony of beauty is shown to him who loves the one who served as a model, he will remain in stunned admiration, and incomparable and superior joy, to that of all the other senses.

In a different passage, you see how da Vinci, inspired by his discoveries of physical principles, uses them as aesthetical elements in his paintings. His studies of fluid dynamics (water, air) lead him to discover how pressure created by a water or an air current on an obstacle in its passage, leads to the creation of turbulences/vortices. See **Figures 1, 2, 3, and 4**, all of which show these vortices. Turbulences or vortices—which he uses later explicitly to depict the beautiful hair of a young lady, as he describes it himself: "Observe the motion of a water surface, how it resembles hair which has two motions, one comes from the weight of hair, the other from the curves of the curls. Thus, water has curly vortices."

FIGURE 1



Pression

Dépression

Metaphor, in this true sense, is not just a figure of speech counter-posing two words of different domains but, much more, the predominant practice by which we select “appropriate names for preconscious notions brought into the domain of consciousness.” This is not part of the politically-correct opinion of science that prevails since at least fifty years. For such a politically-correct view, science is based on logics: on induction and deduction. According to induction: If something happens many times, it will happen all the time and can therefore be considered a law. Leibniz, on the contrary, called this “consecutive thinking,” the level of thinking of a

poor dog beaten many times who, as soon as he sees a stick, runs away in fear, or of the proverbial speculator who jumps out of a 50-floor skyscraper and considers that if nothing happened to him during his fall through the first forty-nine floors, he will be safe until the end.

Deduction, on the other hand, is defined by the capacity of deducing all the properties starting from a given concept. However, deduction can never forecast a transformation of that concept. For example, Aristotle defined the economy from the standpoint of a given set of families and slaves, and their given modes of production, and deduced that in a world of limited resources growth had to be limited and population growth controlled, including by friendly relations among individuals of the same sex. The other name of deduction is indeed Malthusianism.

LaRouche’s life was an unstoppable offensive against this culture of death. He relentlessly proclaimed that the cognitive functions within which discoveries of physical principles are generated, are to be assimilated also to economic practice and to increases in the per-capita, physical powers of labor.

In his 1997 work, “Science is not ‘Statistics,’” LaRouche wrote:

This subject, the relationship between those distinctive, *cognitive* powers of the human individual’s mind, and the increase of the relative population-density of the human species, is the

FIGURE 2



FIGURE 3



FIGURE 4



foundation of all my professional accomplishments over more than four decades to the present date.

This defense of what is human in a human individual is what inspired LaRouche’s fight against Bertrand Russell and his intellectual disciples: Norbert Wiener, “the inventor of the information theory,” and John von

Neumann; and, paradoxically to prejudiced minds, his fight against both the “liberal” von Hayek and the “Marxist” Karl Marx, in the name of Plato, Leibniz, J.F. Herbart, and Carl Gauss, more than often with the polemical method of François Rabelais. The capacity to laugh at evil absurdities or mistakes of composition is unique to mankind.

Let’s listen to LaRouche making fun at Wiener:

The starting point of my attack on Wiener’s “information theory” hoax, was inevitably the nature of the distinction between processes whose underlying order is overall entropic, as distinct from, for example, the species of living processes, which are anti-entropic in their typical, underlying distinctions in ordering . . .

What LaRouche is rightfully stating is that such a celebrated personality as Wiener mistakes living for non-living processes!

### **The Mission for Europe**

Europe, to come back to our subject-matter, can only have a role to play in science if it recognizes that science is the means to fight *against* entropy, fostering gains in the productive power of human labor, leading to increases in potential relative population density. It is not putting things together in a given, nice order. LaRouche again states:

This notion of contrast of entropy to anti-entropy lies outside what the ordinary university graduate considers mathematics. It lies within a higher, “meta-mathematical domain,” which Leibniz defined as *Analysis situs*. . . .

Thus, in this light, science becomes the matter of organizing the mental and related activities of groups of scientists and others, around a task-oriented process—a mission—of perpetuating scientific progress, in this sense, as a series of successively more powerful hypotheses, represents such progress.

Negentropy, later called by LaRouche “anti-entropy” and dubbed “dynatropy,” is a type of ordering that can never be defined in terms of statistical functions or any other deductive mode of argument. An entropic universe would be doomed to death and, on the contrary, physical science is focused upon the nature of the ordering of successively more powerful hypothesis.

This is our mission and our task, here and now. We invite, we urge, all of you to join, for the safety of Europe and for all the good that Europe can and should bring to the world. Let me define now how I see this enterprise, the walk *out of* the Valley of the Clueless.

First, we have to create appetite for change in ourselves and our fellow citizens. Europe is an old sleeping lady who needs a scientific kick in the ass, not kisses on the lips, to awake her from her dream of reason. What world do we want? Do we want to continue to fall into the deadly comfort of a green pessimism, leading to a deep green chaos sponsored by oligarchic mentors? Do we want to continue thinking that our sons and grandsons will have a worse life than us, or die in brutal destruction? Only 3% of the French think presently that their lives are going to be much better! Or, are we going to take our true, non-mathematical, anti-entropic, history of science seriously and decide to revive it again?

For that, we have to define what infrastructure, industry, agriculture and agro-food industry we need, by thinking what the future generations and our general welfare need. We have to think with the eyes of the future and not with the blind eye of the money that we own or can issue. To bet on a real economic future, means we must issue credit for advanced scientific discoveries and related economic development. This credit must generate higher productive capacities, and an open-ended cycle of creative discoveries of principle, technology, infrastructure, innovations and education of the productive powers of labor for the benefit of all.

### **New Hypotheses**

We have to start from the top down, with new economic and social hypotheses, like when a scientist challenges the axioms and postulates of a given state of things in order to jump ahead for a better conjecture. Of course, the European Central Bank, the European Investment Bank, the European Bank for Reconstruction and Development and the whole euro system are in the enemy camp. The Environmental Funders Network and the European Climate Foundation promote the idea that you cannot have indefinite growth in a world of limited resources, following the criminal rules of the game of the 21st-century associates of the British Empire. Excluding the potential of human creativity which they fear, their choice is depopulation. No delusion! None of them are good because they are all committed to various shades of entropy. They doom themselves to be criminals. We have to get rid of them by returning to our

sources of scientific creation, in order to mobilize our creative powers and to inspire others.

Our project for Europe is that it must play a role in science.

We have to think beyond the fake Europe, this European Union which must be dissolved, and go for reinforced modes of cooperation among our nations for a mutual development. The choice is not, however, to go back to the roots of a geopolitical “sovereignty” like that of the British-dominated World Wars system; nor to fly forward towards the science fiction of a European or a world sovereignty, which are traps for human slaughter, but rather, in favor of a “win-win” community of nations, committed to the common aims of mankind.

The One Belt, One Road initiative of China provides us with a tremendous opportunity to seize, on condition that we focus on the long run. Our cooperation goes from the level of aerospace, space, nuclear fission and fusion, AI (Artificial Intelligence) “disruptive” technologies, IoT (Internet of Things), supercomputers, to smart cities, environment and medicine for the elderly and against epidemics. In the future, we should seek cooperation with Chinese enterprises to drive a common, global technological development.

We have another tremendous opportunity in this conjuncture where Trump and the American population want to stop the murderous military adventures of the “responsibility to protect” policies of the military-industrial complex. Trump recently denounced it publicly, by name, even if we should rather call it the military-financial atrocity of the British Empire.

### **An Optimistic Future Awaits**

We are now engaged, in our European organization, in putting together a coherent project embodying what we think and say. Our Schiller international organizing is proceeding in the same way, from Australia to the Americas. We need creative, inclusive and connective developments, with a coherent approach:

**1. Energy:** Nuclear energy has to be our common objective, both in terms of building nuclear reactors of the new generations and developing nuclear research reactors. France remains an example for all, even though we have mothballed this August our fast neutron reactor (FNR) project, ASTRID, and that our Megajoule testing device for laser fusion (LMJ), the most advanced in the world with Lawrence Livermore, where we just had a breakthrough, is used for military purposes more than 75% of the time. ITER also represents a bid for the future, bringing together the European Union, China,

India, Japan, Korea, Russia and the United States.

We also have yet to develop thorium molten salt reactors (MSR). Germany has fortunately kept most of its research reactors, but is shutting down its reactors for electricity production, like Italy and Switzerland. We need therefore a new Euratom intelligent initiative. We have among the best scientists and experts of the world in this area, which should be organized as a scientific task force.

**2. Space:** The European Space Agency (ESA) has, in cooperation with Roscosmos, a program for landing a rover on Mars: ExoMars 2020. ESA is the proof that an association of European states, in this case with the Russian Roscosmos, can function in the best of all possible ways, based on physical projects, and not as a financial moneybag such as the European Union and European Central Bank. The European and Western astronauts, together with the Russians, founded, in 1985, in the middle of the Cold War, the Association of Space Explorers, to promote space exploration but also space science and engineering. Humans working in a creative environment and facing the unknown tend to become brothers because their humanity is enhanced by their common commitment and work. Europe, through the space program, can recover herself and gain a role to play in science.

**3. Transportation:** The concept is to irrigate all Europe, from the Atlantic to the Urals, with a combination of canals for transporting bulk commodities, trains for all types of goods, trucks for delivery systems around nodal points and air transportation for emergency delivery of high value parts. A priority must be given to the rail transportation in Eastern Europe, which has to be urgently improved.

**4. Construction:** All that is required for transportation and housing for our future development should be evaluated, both in terms of goods and manpower.

### **Creativity, a Mission for All People**

The concept is to integrate the European, Eurasian, and Silk Road networks North/South and East/West, connected at their different sides with the Mediterranean, the Atlantic and the Pacific. Cooperation of European nations for the common development of Africa is the priority.

It is in that environment, and enhanced by a sense of mission, where Europeans play a role in science. The most important point is still to be made: a true scientific education requires that the educated person is made “conscious” of her or his preconscious creative processes of memory and insight. LaRouche stresses that

the generation of an experimentally testable new principle (i.e., a discovery of principle) occurs behind the opaque screen of the sovereignty of the individual's cognitive processes and is not representable in any system of communication. If it is thus, how can it be taught? How can this domain be explored? Is there a formal method by which to tackle the ontological paradoxes at the root of scientific discoveries? Of course, but not in learning in a text-book fashion.

The solution is to replicate the discovery within one's own mind and for that purpose, to create in the mind an affinity with artistic ideas, and especially with musical ideas which are of the same metaphorical origin as the scientific principle itself. *Science is metaphor*, Lyndon LaRouche tells us. This is why Einstein was playing violin and Leonardo had such a great interest in artistic composition. The capacity to discover and assimilate new physical principles is nourished by an exploration of the pre-conscious domain of the artistic creation.

That's why the dominant deductive methods of "learning," and of "repeat after me" an already discovered formula, are so destructive. But still more destructive fundamentally and extremely difficult to remedy, are the flaws produced in the human mind, by the separation of the domains of science and art. It is therefore the very foundations of our educational system that

needs to be changed, in order to free our minds to be able to play a role in science. We Europeans, have references: the concepts of education developed at the Renaissance, the Gaspard Monge and Lazare Carnot system of brigades at the École Polytechnique, before the rule of Napoleon, where learning of musical composition, singing and painting, completed the education received by students at what was at that time, the most advanced and powerful center of scientific and engineering work of all times. The Humboldt tradition in the German education system, is another key point of reference.

We are here, in Europe, in a space which remains the same size (and even shrinks), but which is occupied by more and more people who have more and more filth in their minds, and where the exit doors are narrowing. It should come as no surprise if the criminal ideologues of depopulation and apostles of "collapsology" can introduce their ideas in such a polluted environment.

I feel sometimes like Poe's character in *The Pit and the Pendulum*. Like him, we have an opportunity to seize this moment of history, provided that we unleash creativity in our minds and share it with the peoples that demand a better, human life. That is the dimension of our challenge: to deliver Europe so that she recovers her role to play in science. Will she? The answer is within each of us.