

## Creativity: Looking Toward the Future

**Lyndon LaRouche:** We're going into the second phase<sup>1</sup> of the discussion which we began last week. This time we're back with Bach again, but also our dear friend Wilhelm Furtwängler. And what we're going to be dealing with are the physical principles which underlie music, and specifically those of Bach, today, added to our original schedule....

In Bach and in Furtwängler, we're not talking about just music as such; we're talking about universal physical principles of the human mind, and they are *physically* efficient principles of the mind, such that people who understand these principles are actually superior in their intellectual capabilities and scientific capabilities to those who do not. Because there are fundamental principles of physical science, which are little understood these days, because of the particular character of the educational process, in the universities and so forth. And fortunately, we have been, in terms of some of our operating members here, we have people who have skills in both these areas, and are able to bridge the gap, apparently, between physical art and physical science. They are the same thing.

What Bach represents, and what Furtwängler represents, is a leap into a higher dimension of physical science than otherwise exists: That is, the ability of the human mind to understand the physical universe depends upon actually understanding the significance of the contributions, of Bach first, and of Furtwängler second. And people who don't like Bach and who don't like Furtwängler, are really not fully qualified in physical science.

This is, therefore, the second presentation at this table, which will have been done on this subject, and there will be a third one coming.

### The Case of J.S. Bach

**Matthew Ogden:** Good, and that's precisely what I want to address today....

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1. The video is at <http://larouchepac.com/node/22876>.



EIRNS/Ali Sharaf

*Furtwängler described Bach as “the Homer of music, whose light shines through the musical firmament today, and who in a very special way, we have not ever surpassed.” The statue is at the Thomaskirche in Leipzig, where Bach was the choir director from 1723 until his death in 1750.*

I think we can come back to the discussion that we had last week, and maybe this time around, we can class it under the heading, “Defying the Slavery of the Commitment To Simple Sense-Experience.” That is what we explored last week, from the standpoint of the Furtwängler Principle, as we defined it, as a physical principle, not just of Classical art, but an ontological understanding of the physical nature of the universe itself. This week, as Lyn just said, I'd like to come around and revisit this Furtwängler Principle again, this time, a little bit more specifically through the personality of Johann Sebastian Bach. And especially, how Bach was understood, uniquely, by Wilhelm Furtwängler.

Now, this is something which is substantial, which can be heard *immediately*, when somebody listens to the performance of Bach's music by Furtwängler. This

is completely different, yet again, from the way anybody else, practically, performs the music of Bach. Furtwängler, also some of the other artists that were directly influenced by Furtwängler: You can listen to the performances of Edwin Fischer, for example, a great pianist who worked with Furtwängler, and who recorded many of Bach's keyboard works.

Just like Furtwängler, Bach was no mere musician. Bach was not just somebody who was concerned merely with the musical art, as limited to that subject-matter as such, but Bach was a scientist also, in his own right, whose highly developed understanding of a universal scientific principle, explicitly, as such, we hear expressed in a very highly developed form, in his works of Classical musical composition.

And it's not a coincidence, I think, that not only was Bach working for most of his professional life in Leipzig, which was considered the intellectual capital of Europe at that time, the center of learning, also the center of publishing; it was called the "Little Paris" because of the level of the culture that was present among the general population, no matter who it was. And it was saturated with the ideas of Gottfried Leibniz, who resided in Leipzig merely one generation before Bach.

We also know that Bach was directly influenced by not only the ideas, but the method of Johannes Kepler. And I think with these two scientists in mind, when we look at the personality of Bach, you'll recognize that both Leibniz and Kepler are the exemplary avenue by which we can begin to understand what Lyn has described as the "great principle of metaphor."

When we understand, as we elaborated last week, that, for example, with Leibniz,<sup>2</sup> we can know that in none of the so-called finite, created, elementary things



Société Wilhelm Furtwängler

*"Through Furtwängler's view of Bach and the application of the Furtwängler Principle as a scientific principle," said Ogden, "we escape the prison of sense-experience, and we defy the simplistic notion of absolute space and absolute time as such."*

that we find in the universe, the things as such, or even in the aggregate of all of those things, can we find the sufficient reason for their existence; that the causes of what we see, the causes of what we hear, the causes of what we sense, do not lie in the objects that we sense.

And then, similarly in Kepler,<sup>3</sup> that understanding that the causes of these finite things must lie outside and above, in a substance which is superior to the shadows as such; that it's only through the disagreement among these shadows, the disagreement among these finite things, that we can come to see what's unseen, and escape the ghostly shadow-land of our sense-experience and step outside of those prison walls into the real world which lies outside, in what we call the domain of substance.

This is what was in Kepler, this is what was in Leibniz, and this is the profound scientific understanding that we hear through the work and the performance, the proper performance, of the music of Bach. And his role was as the father of all Classical music, a real revolutionary as such, somebody who created, who introduced something which had not been understood in any physically efficient form before that time, that changed the course of all artistic composition after Bach. And Furtwängler knew him as such. Furtwängler described Bach as the "Homer of music," the founder of this science, he says, "whose light shines through the musical firmament today, and who in a very special way, we have not ever surpassed." He described him as a "creator, sitting on his throne above the clouds, who is beyond the reach, practically, of all others."

Now, but a word of caution: This was not mere empty admiration, and I think we hear, through musical

2. Gottfried Wilhelm Leibniz, "On the Ultimate Origination of the Universe" (1697), Paul and Anne Schrecker, trans. See also Leibniz, "Discourse on Metaphysics" (1686), and "Monadology" (1714).

3. For more on Kepler's method, see <http://science.larouchepac.com/kepler/harmony>.

commentary today, again and again, empty words: admiration for Bach, because of an admiration for an effect that's experienced, but the lack of an understanding of the cause behind that effect.

That's *not* the case with Furtwängler. Furtwängler's admiration came from understanding the scientific principle as such, which lay behind the work of Bach. In his writings, Furtwängler came to understand that the same principle of performance which he associated with his own idea of the superior substance of the whole, which dictates the behavior of all of the parts, was absolutely the principle which lay at the root of the composition by Bach.

For example, in one of Furtwängler's writings about Bach,<sup>4</sup> he compares him to some of the other contemporaries of the day who are skilled composers, including Handel, a very skilled composer, whose music, in fact, Furtwängler performed and did a brilliant job. You can hear the *Concerto Grosso* by Handel that's performed by Furtwängler in a way that you'll never hear it otherwise. But even with Handel, Furtwängler realized that in comparison with Bach, there was something still strangely arbitrary, strangely capricious about Handel's music, as compared to what he described as "the serene sureness of purpose," which runs through every work composed by Bach.

And he identifies it by saying, "With Bach's music, we hear a concentration on the moment, linked with an immense breadth of conception, richness of detail linked with a grandeur of overall vision, with its simultaneous view of the microcosm and the macrocosm, with its concern both with the here and now, and with the ultimate goal, its union of what is close at hand and what awaits us in the future, Bach's music offers us an experience of the unshakable power of nature, such that we find nowhere else in the annals of music."

And so, as you can see, the principle of composition that Furtwängler *uniquely* understood as what lay at the root of Bach's music—for example, in his fugues—becomes clear when we see it, and hear it, through the lens of the Furtwängler Principle, as we elaborated it last

week. Think about what he just said, in terms of the macrocosm existing in every microcosm, the superiority of the whole over the parts, the reciprocally dynamic relationship between those parts and the whole, where the whole is always primary and always dictating the behavior of the parts, but you have a collision at each moment, between these two.

And this union of "the here and now ... with what awaits us in the future," the simultaneous hearing of what's "close at hand" and "the ultimate goal"—that's how Furtwängler describes Bach's music, and that's what we experience through the Furtwängler Principle as Bach's music is performed, always listening both from the present to the future, from the microcosm to the macrocosm, and always also, simultaneously, *from* the future, which is not yet physically experienced, to the experience of the present, from the macrocosm to the microcosm. And this is the same, obviously, as what Furtwängler described as the *Nahören* and the *Fernhören*: the hearing of what's near and then the listening to what's far, intersecting at each moment of the experienced performance.

And so, through Furtwängler's view of Bach and the application of the Furtwängler Principle as a scientific principle, we escape this prison of sense-experience, and we defy the kind of simplistic notion of absolute space and absolute time as such. And from this standpoint, we can begin to understand that you have a knowledgeable principle of universal creativity, which Furtwängler clearly elaborates,<sup>5</sup> as Bach, as the architect of a universe in and of itself, but in the reflection as a mirror of the Creator of the universe.

## A Universal Ordering Principle

**LaRouche:** And this is clear in the question of the *Preludes and Fugues* in Bach. Because the question you're referring to, is this question of what is priority? Now, from a standpoint of physical science, which is where I'm approaching this thing, you are proceeding in reverse order: that we take dead objects, as a first category of organization, dead objects, dead planets, dead

4. "Bach," *Furtwängler on Music: Essays and Addresses*, Ronald Taylor, trans. (Scolar Press, 1991), pp. 27-31. Other quotes immediately above are included in this essay; for example: "Bach remains today what he has always been—the divine creator on his throne above the clouds, beyond the reach of others. ... It is this that makes him for us the greatest of all composers, the Homer of music, whose light still shines out across our musical firmament, and whom, in a very special sense, we have never surpassed."

5. *Ibid.* Furtwängler writes that in Bach we find "the power to create an entity which is a true experience in itself, an experience which reaches its own climax and fulfillment independently of its creator. ... Every piece is carried to its fulfillment—or rather, finds its own way to its fulfillment—in terms of the law under whose aegis it was launched into the world. The creator of these choruses and these fugues—Bach—seems to be not a human being, but the spirit that rules the world, the very architect of the universe."

material; then you have another thing, the living thing, human beings, animals even. So you have animal life, which is the living, as opposed to the dead. Then you have a third category, the human mind, which actually is able to see the future, in itself.

So what happens then, is you have an order: We have dead things; we have living forms of animal life, all kinds; then we have human life. The difference is fundamental. First of all, they are dead things. Secondly, and which some people never understood, they are always trying to find life in dead things. And that doesn't exist. *Life* is a principle of the universe.

The problem here is really fascinating. The assumption is, that first, there were dead things, then there came life in the form of what we call animal life, thirdly, there's human life; and they assume that you got living processes in embryo out of dead things. And that from the living processes which couldn't think, actually *think* as humans can think, you would get human beings thinking. They would assume, that if you wanted to start a universe, you would start with dead things, and then somehow you would cook dead things until they become living things, or have animal life; then you would cook human beings out of animal life. You put in the roast, and it becomes a human being.

Well, this is obviously a little bit screwy, isn't it? The fact of the matter is, that contrary to this common conception of ordering, it is in the opposite direction. Now, how can you prove that? Well, there are many ways to prove it, but in the case of this context of music, it's elementary: The process of creativity, of human creativity, is the highest form of existence of life known to us. You don't get life out of non-life, and you don't get human life out of animal life: They come in a different order. Human life is the highest form.

Now, what we call human life, we think of human beings. Fine. But is it restricted to human beings? Is not this higher form of life, existing in the universe? Is man not therefore a descendant of the universe, rather than the other way around? Animal life is real life, it's a product of life, but you also get a higher form of life somewhere in this universe. We recognize that it's happening, because the universe is organized in a certain way which reflects intelligence of the type we call "human intelligence." And therefore, we are merely a variety of this higher form of intelligence, which we share, in principle, as mankind, as distinct from the beast.

Now, what do we do? Put this from the standpoint of Bach, and then put this again from the standpoint of

Furtwängler. What's the result? You realize that what Bach represents is a higher form of life than people who don't like Bach! Right? For example! You just want to make the point a little bit cruel, right?

Mankind is the highest form of organization of life as we know it, in the confines of this planet; but there must be, in the universe, still higher forms of life than we represent, and the animal is simply something which was popped in, in the oven so to speak, on the way to producing human beings as a reflection of this still higher form of life, which we know as the mental creative powers of mankind.

Now, what we call scientific discovery, the discoveries of principle, as opposed to a mechanical innovation, all principled discoveries have this same characteristic; the idea of a principle of nature belongs essentially to this category, that mankind reflects a special kind of principle of nature, which reflects this higher form.

Therefore, what's the significance of Bach? The significance of Bach is—the Bach fugue is based, as in the *Preludes and Fugues*, precisely on this concept of a transvaluation of valuations! Therefore, Bach is expressing this form of *human* intelligence, as distinct from a kind of mechanical attempt, like an animal imitation of human intelligence.

Furtwängler makes this very explicit, and he does it with great, free passion, which, because he rests upon not only Bach, but he rests upon the work of the followers of Bach, such as Mozart, Haydn before them, and Beethoven. The great composers who precede Furtwängler in his work are reflections of this process.

So when we say we "like music," that's kind of silly. We admire what the universe represents, and admire man's role in the universe, and admire it as something which we *have to* admire, we're obliged to admire, and to emulate.

## A Cultural Degeneration

And therefore, you have a problem: that European civilization has degenerated, under the influence of the opponents of these musicians; that the intellectual life of the typical citizen of the United States and Europe is *inferior* to that of their ancestors, of the relevant ancestors. There has been a moral and intellectual degeneration of human life and activity, and the thing we're fighting against is this degeneration. You saw it in music, you saw the opposition to Bach, the opposition to Beethoven, and then the attempt to *exterminate* those who went further, like Furtwängler.



Deutsche Bundesarchiv

Herbert von Karajan, whom LaRouche calls “the oompah band director, best loved by the Nazi Party,” conducted the orchestra using a stopwatch. He is shown here in 1941.

Furtwängler—there was a campaign of *extermination* against him. They took a man in Germany, who had been the oompah band director, best loved by the Nazi Party, and they took Furtwängler, threw him in the rubbish bin, and took this oompah band conductor—he would conduct a symphony by stopwatch at the podium! He was caught by the members of the orchestra, using a stopwatch!

**Ogden:** And von Karajan was an official member of the Nazi Party! He had *two* membership cards in the Nazi Party!

**LaRouche:** Yes. What the British did, the Liberals did, the German Liberals did, is they replaced a *human* conductor of music, with a fascist, a Nazi conductor of music. And this Nazi conductor of music, and all the people who liked him, and liked the way he did things, were Nazis! Not because they had joined the Nazi Party, but because they had a *state of mind* which is specific to the same thing as the Nazi Party mind. And the British, of course, are richly endowed with that same Nazi kind of mind. Matter of fact, they sort of invented it: It’s called the principle of the Roman Empire, as a British version.

So that’s the point: that when we don’t have this understanding of things which are typified by the Classical music composition of Bach and of Furtwängler, we really do not have music, and we do not have the competent development of the intellect.

The human intellect in, say, the 20th Century, in my lifetime, has *degenerated*. And I can trace the degenera-

tion to what happened during the 19th Century, in the so-called Romantic movement in music. The Romantic movement was a form of decay which got to stink more and more, as it got older into the 20th Century.

## Generate the Future

But this is what the issue is. This is not just “what is good music.” This is what is “good human.” Good human thinking. If you’re not really steeped in Classical music, *you do not know what humanity is*. Because the very essence of the ability to perform a Bach fugue, say, from the *Preludes and Fugues*, and to understand what the distinction is, the change from the First Book and the Second Book; then you go to what Furtwängler was arguing; you go to the changes in composition developed by Mozart, which Haydn was astonished by; what the accomplishments were of

Beethoven, which would have astonished Mozart.

And now you get what Furtwängler represents: He represents a reflection, a determined reflection as a great scholar, as a great thinker, as well as a great musician; he represents this. But this is not just *music*! This is the way the *mind must work*. This is why you must use the Classical mode in composing prose, because you must generate within the prose itself.

This becomes clear on the question of dramatic presentations on the stage: The great Classical works presented on stage are qualified because they compel the performers, as a group of people, to interact on the same basis, the principle of the future.

What is a great drama? It shows a principle of the future. Then you look back at this stuff, and you see, “Well, it works exactly that way.” And therefore, this is a quality, which, if you want to have an intelligent community, a community of competent scientists, a community of competent thinkers, of competent statesmen, what does a human being require? Or what have we lost? We have lost the connection to the future. We don’t understand the future, we don’t *think* the future. We don’t think living processes; we try to deduce from dead things, what man must be.

But the key thing for humanity is, the purpose of humanity is the future. We have to generate the future, by ourselves; and by generating the future, we are creating what distinguishes mankind from the beast. People who like rock music are beasts! And they demonstrate

it every time they open their mouths, or whatever other organ they open up for these kinds of performances.

And the purpose is to enable the development of the human being, to become a truly creative human being, which is the only *human* being; and you see this reflected in particular in Bach and in Furtwängler. Because the question is, what is the inspiration? The sense of the future. A thought of the future. To generate the future, onstage! To generate the future, in the mind of the personality, which is called “creative invention.” These are the issues.

So, we have come into a society, which is *intrinsically morally decadent. Morally degenerate.* And its social values, its popular sense of popular things, its admiration of popularity—what is popularity? It’s death! Because everyone goes there. You become dead, therefore you’re “popular,” because *you do not challenge the present with the future*; therefore, you’re not really human. You only come as a human being in the box. But when you open the box, there’s no human there, there’s just a remnant of what was once the intention to create a human being! And that’s what you get.

You get this sense which comes out in this forward and future, the future and the past thing in Bach, and in Furtwängler—it’s exactly that; we have to find, in ourselves, an anticipation of the necessary future, and to act on that basis, and to create a future, as opposed to repetition of the past. And thus, this is not just music; this is something much higher; this is a devotion to mankind and to mankind’s future. This is the only thing that distinguishes us from the beasts.

And you want to doubt that? Look at what you see on the streets now. Look at what you see in these young kids, on the streets now!

Look at what you see in our political leaders! The political leaders of the United States, with very few exceptions, are intrinsically cowards of a special kind. *They don’t challenge the future.* They play it safe, *by being stupid. Dumb, clumsy, failures.* Look at them! Look at the leading politicians! The leading politicians, the leading political figures of the United States, they’re all a bunch of stinking cowards, who have no sense of the future, they have no sense—“Oh, that’s not for me. That’s not for me, I’m not going to go there. That’s not established. That’s not established, that’s not accepted. I’m not going to go there.” They are the living dead. They are committed, intellectually, to be dead.

Most of our leading politicians are that. You see that—I can go name-by-name. I can prove the case, case-

by-case, in our leading politicians. The problem is, *they are morally dead*, because they have no commitment to the future. They don’t hear the voice from afar! They don’t enter the future. “I don’t go there,” they say. “You may be right, but I don’t go there. You may be right, but that’s not popular. I’m not going there.”

### Living in the Future

**Ogden:** And just to make the point, the moral principle, as a musical principle: Furtwängler himself was famous for this. He criticized this “cult of personality” around the conductor; after a performance, everybody would go and want to have a “society evening” and everything, and he would slip out the back door, and he’d be walking home, at night, in the dark streets, thinking about what he had just done. He rejected all popularity.

And he said the same thing was true about Brahms: that Brahms, although he was a very sociable person and really liked people, when it came down to praise and admiration, and talking about his music, he hated it. He would shut down, and he would block that out. Because, he—as Furtwängler said—Brahms always lived every moment of his life with the future, with eternity in mind.<sup>6</sup> And that’s a moral principle. Brahms was one of the last of those, in the 19th Century, even. And then after the death of Brahms, and over the course of the cynical 20th Century, we lost that sense of even the human principle of living for eternity.

**LaRouche:** You see that, also, in physical science, the same development: Einstein reflected that; Planck reflected that, specifically, and others who followed expressed that.

No, it is in science, and that’s what we’ve lost in science. That’s why science has gone dead in performance; we put things together still, we make gigantic things based on principles we’ve known, like thermonuclear fusion: We’ve known that for a long time. Now, we use

6. Ibid., pp. 97-104, “Brahms,” the text of an address to the German Brahms Society in 1933 in celebration of the centennial anniversary of Johannes Brahms. Furtwängler writes: “Brahms’s distaste for external show, his complete and utter lack of vanity, together with the ‘passionate objectivity’ about which I spoke a moment ago, were equally characteristic of his daily life. His need for independence and his cast-iron determination not to allow himself to be disturbed by trivial interruptions, led to his living an unobtrusive, almost anonymous life. . . . He was loath to talk about his works at any time. Like all truly objective artists he was fully aware of the distinction between the real creative act and the sophisticated theorizing about it which was just beginning to become fashionable in his day. . . . Particularly in the last years of his life, he lived with the future, with eternity, in mind.”





LPAC-TV

Matthew Ogden: “How do you compose like Bach? That’s based on the future. How do you compose, and perform and direct, like Furtwängler? That’s the future.”  
Shown are Ogden and Lyndon LaRouche during the May 30 webcast.

the opposite, aren’t going to be able to understand this musical question, aren’t going to be able to understand science. The correlation is between this, and then what Riemann did, where he definitely saw development as primary. He saw creativity as the primary substance—not the present, but what the direction was, the creation of the future. That was what was most real. And obviously, that means that you’re not building the future—you didn’t build the present from the past, you didn’t build it up from pieces. *There’s something that’s drawing you from the future.*

And in terms of getting beyond the senses altogether, I want to take up as an example, Riemann’s habilitation dissertation, which is the key

it as a threatening weapon to destroy mankind, we don’t think about going into space with such power. We haven’t gone to Mars. We should have gone to Mars already! We *could* have gone to Mars already! And the only way to go to Mars is actually to develop a thermonuclear system of propulsion. We didn’t use it.

And you need the thermonuclear technology, also, in order to transform the territory of Mars, to make it somewhat livable, so that mankind can operate there. We haven’t done that. We haven’t even thought about that. And that’s because we’ve lost this sense of the future.

The characteristic symbol of the future is what you see in Bach; that’s the future, the principle of the future. In order to solve the problem of how do you find the future, how do you compose like Bach? That’s based on the future. How do you compose, and perform and direct, like Furtwängler? That’s the future.

So, this is not just music. This kind of music, and this conception of poetry, which is part of the same thing, is the point that if you want to live as a human being, *be a mensch!* Join the future! Get into the future! Be part of building the future!

*Be a mensch—endlich!*

### **Creativity Is the Primary Substance**

**Jason Ross:** Yes, there’s an existence in the future. People who can’t understand how the future differs from the past in a way that’s different from being just

work in physics of the 19th Century.

You have to go into a little bit of geometry, to set the stage for this, but, in Egypt, in Greece, people studying the relations between shapes and things like this, started to develop a whole geometry of different axioms and conclusions. People were seeking for the most basic assumptions, from which everything else would follow. That ended up being Euclid’s approach, where Euclid took all of the discoveries of Greek science and then—he formalized it. And formalism is evil. Because instead of presenting discoveries as where they came from, from the process of mind that created them, he said, “No, we’re going to start with basic geometric hypotheses, and show how everything follows from geometry, rather than from the mind.”

So, in laying out his basic definitions, and axioms and whatnot, one of them, the 5th postulate, caused a lot of trouble for the future: This is the one that says that you can have parallel lines, that it’s possible to have two lines that just go along next to each other and will never meet, even if you extend them infinitely. Now, obviously, no one had ever checked; no one had gone to infinity to see if this was right. And it’s actually not true!

Let’s say you had a city, where the streets were laid out in an east-west grid, and you and a friend are on parallel streets and you’re both going north. Now, if this city covered the entire Earth, what are these streets going to do at the North Pole? They’re going to meet!

So, on a sphere, for example, there are no parallel lines.

The same thing is the case with space. So, in the 1700s and 1800s, people like Lobachevsky, Bolyai, and Carl Gauss realized that you could create geometries that didn't start from Euclid's presumptions, that didn't start from the idea that you could have parallel lines, that space was flat. They created other geometries! Lobachevsky created one, where you could have multiple parallel lines and none of them could meet.<sup>7</sup> He even got Bessel, the astronomer, to help him test out whether this was true, by making astronomical measurements, to see if space was curved or not. He wasn't able to determine it.

These guys—not Gauss, but Lobachevsky and Bolyai—were what you might call “non-Euclidean.” They said, “Euclid made these presumptions and I don't agree with all of them. This one I don't agree with, and I'm going to make another geometry while changing this one assumption that he made.”

Riemann said, “No, the problem isn't in having a wrong geometric assumption. The problem is in starting from geometry in the first place! You're basically starting from perception, from appearances, from relations in space, as opposed to starting from physics.” So Riemann worked out fully, the total generality of different curved spaces—this is the work that was later used by Einstein, in eliminating space and time as concepts, with his Theory of General Relativity.

But Riemann said, “Forget geometry. The only way you're going to provide a real foundation for understanding the relation of these things is in physics! What are the principles that cause everything to occur? That's the basis for understanding their relations: What made them come about? You have to look at everything in terms of what made it. That's what it actually is.”

The thing with this anti-Euclidean approach, where the whole outlook of Euclid is rejected by Riemann, is you end up realizing that there's no actual answer to this



*Bernhard Riemann (1826-66) “saw creativity as the primary substance,” said Jason Ross. “Not the present, but what the direction was, the creation of the future.”*

question. There's no final answer to the shape of space, because we are never done. Physics isn't done. There is no Second Law of Thermodynamics; there is an unending density of development that lies in store for us in the future, with the discoveries we have yet to make, of principles which are currently, although unknown to us, governing the processes that we see. Like right now, the unexplained quantum processes, or life, or a number of other things.

So, the fact that we're never done, also means that our activity is itself a principle of the universe. You can't say, “I'm going to study the universe outside of human beings,” because

what we do shapes it. *When we make new discoveries, we literally are changing the shape of space; we're bending it.*

### **No Fixed System**

Take that, and look at the problems of thinking in terms of money, because, obviously, our financial system right now is disintegrating, as we speak, but there are some people who are seeking a different monetary system to replace it. Some of them even call it a “credit system,” without knowing what the word means, where they say it's a different relationship of money. But the problems we've discussed with using money in an economy, the foolishness of even the term “monetary economics,” or the fact that money isn't able to distinguish this sort of specific new liveliness that's embodied in a new physical principle; money isn't able to understand qualitatively the introduction of fire, or agriculture, or nuclear power, or space technology; that the inability of money to “understand” that, is the same thing as what you get with trying to make a geometry based on *things*, as opposed to *principles*.

Under a credit system, we're not going to have a final credit system. It's not possible to lay out what rates of interest should be, how the banking sector should work, and everything, in a way that will be everlastingly eternal. Because it's always based on what your specific intentions are: Right now, NAWAPA and space,

7. For Euclid, given a line and a point not on it, there is only one parallel line through that point. In Lobachevsky's geometry, there are multiple parallel lines through that point. See <http://bit.ly/KOH4z7>.



for example, space defense and Mars: These are goals that are going to change in the future, as we develop.

So, it reminds me of *The Republic* by Plato, where everybody's discussing the ideal republic, and they start thinking, "Okay, how are we going to make sure that this republic continues into the future? How are we going to lay down a basis for future generations to maintain this republic that we're creating?" And they realize that no set of specific rules will work! Both because people in the future aren't going to know why those would be good rules, and they end up coming to the conclusion that their process of deliberation is itself the only enduring foundation for an ideal republic. That future generations have to rediscover what the principle of the future is, and improve upon it.

It gets scary to think about that with a credit system; that there is no outside, non-human system that we're going to create, that will then govern economy; that economy is a lively thing, it's a human thing, and human intention has to be there all along the way, guiding it.

## Changing the Universe

**LaRouche:** The question then is, what is the limit of mankind, in terms of development of the universe? Changing the universe, changing the rules, extending the rules? Well, we have the question of matter-antimatter conceptions, which is the so-called boundary condition today, what we think the physics boundary condition is, in terms of the speed of this, speed of that. But then, we say, that's impossible! And we just haven't created it yet. When we think about what we have to do with galactic systems, for example; things happen there that we're not conceiving of doing from Earth; but there's a part of the universe, in which things are happening which don't fit the matter-antimatter convention!

When you start to think about time, the time factor—well, we've blown up the time factor totally, with thermonuclear fusion. Right? The clocks don't mean anything in the same way any more. And when we get to matter-antimatter and we look at the universe, we just stare at it, and "See, that's a boundary condition, we're locked here forever! We're in a dungeon." Well, it's a self-created dungeon: You didn't get the key yet, to get out of it.

Because, obviously, when you look at the cosmic system as a whole, you see ratios of time-action and so forth there, and bounding conditions there, which go way beyond matter-antimatter as it's simply defined. Matter-antimatter is actually a general principle, of many kinds of matter-antimatter! Of many qualitative

stages of development of matter-antimatter! We're already yearning for that! Once we start thinking about the limits of our universe as we know it, about the Solar System, then we go beyond the Solar System, and go into the galaxy, and we sit there and we look at our charts, and we find out, how many million years do we go back in this process? How was this system put together? How were these changes organized?

So with matter-antimatter, we have a definition of an assumed limit, based on the assumptions of experiments that you have now. We are now getting into the matter-antimatter function much more familiarly, as something which *does* extend further, and we know that it's cognizable by the *mind of man!* And that fact tells us that's where we're going to go.

**Ross:** Yes, and the sense of finality is more a psychological quirk than anything you get from actual science. I mean, people in the past, at all sorts of times, have said, "We're basically done. What we've got right now, we can't imagine anything beyond it." Well, of course not, if you're just looking at the system of what you know right now! But it's through the cracks that you're mentioning in astrophysics right now, things like that—there's plenty to discover that's out there, and it's just a matter of an intention to go ahead and do it. I mean, we could have had fusion energy by now, if there was an intention to make it happen: If there was a political will.

**LaRouche:** You have the intention to find the final answer to all questions? That's a very barbarian concept of a universe!

**Ross:** It sounds like an indecent desire.

**LaRouche:** It does, intrinsically very indecent.

**Ogden:** And I do think that's the key, as you mentioned: We're sitting here, right now, in the midst of a breakdown crisis, and nobody who calls himself a professional economic forecaster saw it coming. Except for one, and the question is, how are you going to be able to develop the ability to think like Lyndon LaRouche, and carry this civilization out of the fallacies that were embedded in how we reached this point right now?

**LaRouche:** You have to adopt that as a question. It's that simple. As a fungible question!

**Ogden:** And it's very possible. The barrier standing between us and that, is this refusal to defy the slavery of trust in sense-experience.

**Ross:** Yep, it's internal.

**LaRouche:** That's exactly it. And we've got further to go, but we're going to get into that next week.