IS MAN JUST AN ANIMAL?

The Destruction of Science In the Twentieth Century

The following discussion is the second in a series presented on the LaRouchePAC New Paradigm Show (https://larouchepac.com/new-paradigm), dedicated to developing the scientific basis for the distinction between man and beast. Benjamin Deniston of the LaRouchePAC Scientific Team, who moderated this program with Megan Beets, gave the first lecture in the series, on Jan. 28. Phil Rubinstein, a national leader of the LaRouche movement for more than 40 years, gave this presentation on Feb. 4.

Benjamin Deniston: …The real issue, which I think we want to get at today, is—contrary to all these forms of mathematics, empiricism, reductionism—the issue of the human mind, that these policies express a certain conception about what the human mind is. Is the human mind just an animal brain? Is the human mind just an advanced mathematical calculating device? Or does the human mind have a certain creative capability that's unique to the human species. And I think that's the issue of the fight historically, especially in European civilization.

That's the issue of the fight we face today, and when we were talking the other day, Phil, you really emphasized that people have to realize that science is incredibly political, there's not a separation. The unifying issue is, what is the nature of the human mind? And this intervention in science, to shift science away from a certain orientation that existed in the 19th Century, was emphatically a political shift based upon this imperial view, this animalistic view of mankind.

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We may share 98-99% of our DNA with chimpanzees, but that doesn't make this guy human, nor does it mean humans are chimpanzees. Is this fellow miffed because he's missing the crucial 1%?

Are Human Beings Animals?

Phil Rubinstein: Well, I think there's a lot of territory to cover, and we won't get through all of it, but I think one starting point, first of all, is to realize that most of the culture today—and I think it's becoming even more extreme actually—believes in artificial intelligence, and believes that human beings *are* animals. It's not even a question—

"Are human beings animals?" We're complicated animals; there may be strange manifestations that come up in human beings, we tend to worry about things, we seem to be somewhat more aware of our environment. Some people think that all there is to the human mind is that we're aware of ourselves and in a way that animals are not quite aware of themselves.

But that's just a border that you reach. If you have enough sensory input and enough complication; for example, they've done experiments with chimpanzees, who after a while, do recognize themselves in a mirror, and it takes them quite a while actually, they look behind the mirror. They compare it to two-year-old children, and they'll say, "Okay, the chimpanzee ultimately becomes aware of itself," and that shows you that even though they're less complicated than we are, they're headed in that direction. And then you get all the things about 99% of the DNA, or 98% of the DNA [is shared between humans and chimpanzees]—I've seen different figures, but it's in that range.

Deniston: The DNA that we have is the same as the chimpanzee, and therefore we're only, whatever the difference is, 1% different.

Rubinstein: Or, of course, as I said before, only a tiny little bit of our DNA is all the difference that there is, so it's a little bounce in the mutation or something. But of course, if you really want to look at it, in some religious standpoints, human beings are as a worm to God. Well, if you take the typical worm that's used in experiments, *C. elegans*, they have 70% of our DNA. So we're not that far from a worm! If you have that kind of reductionist outlook, it's only so many steps from single-celled creatures to complicated creatures, and that's all there really is.

For example, recently—this is rife in popular culture, frankly—if I go through it, people can get a little upset, but popular culture is full of this. There's a series on "The Planet of the Apes," and the whole principle of it is, apes and human beings are just one mutation away from each other.

In the field of artificial intelligence, you find more, despite what was proven, really, by Kurt Gödel, but also by Plato in the *Parmenides*, by Cusa in the *De Docta Ignorantia*: You can't replicate human creativity with a machine. But nonetheless, because we've gotten more and more, really, not that sophisticated, what we have is machines that are capable of very rapid calculation.

Deniston: This is particularly expressed in this early 20th-Century shift, where we started to get the introduction of early conceptions of artificial intelligence, and then some people ran with that, saying that what we can do with these machines is a complete continuity to what the human mind is.

Rubinstein: And, it was proven wrong, as early as the 1930s. But today, because of the impressive calculational nature, which is not—the point that LaRouche is making is, *this ain't creativity!* In other words, you can calculate as fast as you want, and you can approximate certain kinds of things and say, well, if I'm fast enough, and I can go through enough calculations, I can do almost as well as if I had a creative breakthrough and developed an idea that got me directly to the problem.

You Won't Find Creativity in Your iPhone

So people are impressed—and of course, this is part of entertainment. I think that's a big part of it. People have telephones that they can look this up, and they have a massive amount of information at their fingertips, and they think this is "knowledge." And it isn't. *Encyclopedia knowledge is not human creativity.* You know you can take somebody who knows every note that was ever produced by every musician that ever lived, and it wouldn't make him Beethoven or Bach, or anybody like that.

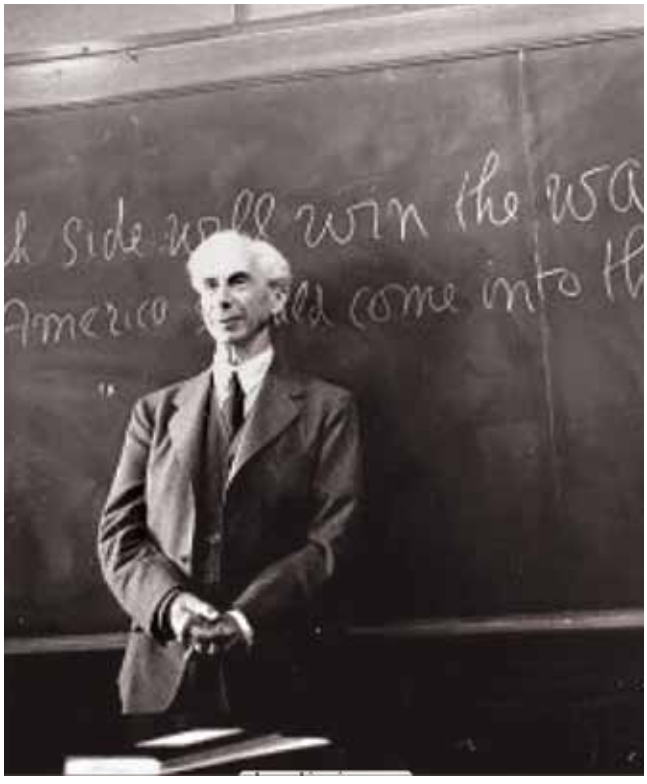
So the ability to filter through a million branches of choices is not what gives you creativity. Bill Gates was saying that he's worried that when we get super-calculational devices they'll overtake us; this has been mentioned by others of this wired world, like Ray Kurzweil. And some of them are saying, "Well we've got to be really careful"; Stephen Hawking, another one of these heroes of popular science, was saying we don't want to run into anybody else in the universe because they're probably smarter than we are and they'll dominate us.

So there's almost literally a fear of the inferiority of the human species to these kinds of [artificial intelligence] capabilities, even though we created them. And as I said, in the *Parmenides*, Plato makes the point that a simple, mathematical view of existence, simple concepts like motion and rest, if you try to reduce them to arithmetic proportions, you get paradoxes. You get the simple paradox that there's an infinite number of points on a line, and in order to get to

point 1, you have to get halfway; in order to get halfway, you have to get a quarter of the way; in order to get a quarter of the way—. So you never get started. It's a bit of a joke. Obviously, he's making fun of any ideas that you can reduce things to arithmetic or even infinite divisibility.

Now, despite that, all of this has come up again. And I would say, as you were making the point, this is pervasive. It's much more pervasive than people think. Monetarism is built on this—the idea that value is embodied in whether or not people are willing to pay more for a monetary instrument, because somehow this is going to get them their pleasure. And so you can bet on this, you can speculate on it, and that's the economy. In fact, there's a complete coherence between Adam Smith saying, don't think about this, this is in God's hands, and the small-government approach.

Think about: What is the small-government approach? If people think about the future, they'll screw it up, they'll introduce irrationality, emotion. Stick to the more basic emotions, stick to your "feelings," don't have a government, don't have regulation, and that's the ideal economy. Even after the crash of 2008, you have the leading banks, most of the economists, saying "we need less regulation," when it was *de*-regulation that blew the system out! But it's literally the idea, don't let the human mind interfere, because there's nothing more in the human mind.



Bertrand Russell (shown here lecturing at UCLA in 1939), in his "Principia Mathematica" says that all of mathematics, all of geometry, and ultimately all of physics, can be reduced to arithmetic, to a logical, formal system, i.e., there is no such thing as creativity.

The Knowability of Creativity

What I've seen from Lyndon LaRouche over the years, is an increasing emphasis, not that it wasn't always there, but an increasing emphasis on what I would call the knowability of creativity. It's not just that we're creative; it's in some sense, that you can *intend* to be creative. You can't have a formula, because you're talking about something that hasn't been done before. But you can know, in a certain sense, what the direction is. For example, the way LaRouche uses the idea of imagination: It's not imagination like fantasy, or imagining I can put the rear end of a horse together with the front end of an elephant and come up with a strange animal.

There is, in the imagination, because it encompasses history, it encompasses what we've done before, and in a sense, it encompasses a certain quality of universality, fundamental human ideas, principles, something about the way the universe works, that we've come to pose to ourselves as a problem because of where we've gone. And the human imagination is capable of proposing to itself, what must the universe be like that I'm going to encounter, if this is already a manifestation of it?

If I've sent a satellite out and it's begun to get data about the Solar System or the galaxy, and now some of these things are posing problems, what kind of universe would pose that problem to me through these kinds of instrumentations? And so that's how the human mind with its imagination begins to measure itself against the universe. Because it's always got to be something that you didn't experience, in a sense, you're creating the experience in your mind based on what you know hasn't worked, or has led to a problem.

This is, I think, what Lyn is referring to when he talks about Kepler's approach to the Solar System: He's looking for a universal principle. And he accesses in his imagination, through the medium of music, what must this universe be like to hold this kind of Solar System in

a universal process, that really reflects a certain underlying harmony. And when I say harmony, it's an actual harmony, it maintains a certain tempering, that relations are not arithmetic. They're never going to be arithmetic.

I mean one of the things that Lyn has mentioned is, he had to destroy arithmetic. Now, that comes up at the end of the 20th Century, when, indeed, people like [Leopold] Kronecker, before [Bertrand] Russell, in some ways I think [Karl] Weierstrass, and Russell in particular, as a hegemonic figure, propose that all human knowledge can be reduced—and it does base itself in Locke and so forth—but Russell nails it. In his *Principia Mathematica*—it's modeled on Newton's *Principia Naturalis*—and he's going to have a strict arithmetic, ultimately reducible to arithmetic, not just mathematics per se, but he's saying you can reduce all of mathematics, all of geometry, and ultimately all of physics, to arithmetic. Because what you've got in Russell's system is basically countable qualities, countable items. And he has a simple set of rules, a simple notation.

The Russellites have even reduced nuclear war to an arithmetic calculation: We're going to lose 100 million people, but they're going to lose 150 million people, so since their losses are bigger, we win. This image, of Slim Pickens riding a nuclear bomb over Russia, from "Dr. Strangelove, or How I Learned To Stop Worrying and Love the Bomb."

I would say, in most of what people think of as logical positivism, which is what Russell puts forward, you start with a certain amount of data. In fact, Russell, at one point, says, the fundamental part of language is pointing. You say, "this object," "that object," and then you develop the relations between them. So it's all sense-experience and logical deduction. And of course, the essence of deduction is that there's no more in the theorems than you have in the axioms and the rules; it's just a question of unfolding the tautologies. How many different ways can you put an equal sign: This equals that; move it around, it equals this, it equals that.

So there's nothing new that you can have in the system. Russell proposes this, and then, of course [David] Hilbert, who forms a certain outlook not unlike Russell's, basically a limited outlook; it's not clear to me how much Hilbert was completely aware of what he was doing. Russell was. Hilbert may have been. But Hilbert says that physics, chemistry, can all be reduced to a logical, formal system: We're looking for the perfectly complete system. And this becomes a dominant views. Even though it's criticized, people will tell you how much they don't like it—it's behaviorism.

The Insanity of Behavioral Economics

We have this politically; I think a perfect example, besides the economics, for example, is, who did Obama bring in? Cass Sunstein. Cass Sunstein, out of the University of Chicago, is one of the leading behavioral economists. Or, lest anyone think it's just one person, Ezekiel Emanuel, who is one of the big arguers for ObamaCare. The biggest thing about ObamaCare is really not what everybody's freaked out about. What is it? It's behaviorism! The whole idea is, we can set up a set of conditions that restrict people's desire to use certain kinds of medical care. How? We disincentivize it, we make it cost a little bit more, we make them go through a few more gates to get to the care, and people say, "Aw, it's not worth it. I got this problem; I'm going to die a couple years earlier—it's not worth all the trouble." And so you control people's behavior.

What did Jen Psaki of the State Department say, yesterday? She was asked, are we fighting in a proxy war in Ukraine? If we arm the Ukrainians, the Kiev regime, are we fighting a proxy war, Russia versus the United States, in the form of eastern Ukraine versus Kiev? And she said, "Oh no, we're not inter-

ested in a proxy war, no one would really want that. But we do want to change Russia's behavior." So we want to keep punishing them until they change their behavior.

And this is insanity! The idea that you're going to predict Russia's behavior, based on a stimulus/response version of behavior is just pure nuttiness, and dangerous nuttiness. I think you have to understand the Russians. Russia has been through a situation that wasn't that far from nuclear war. If you look at the European part of Russia during World War II, they lost 20-25 million people, maybe more! I mean, they lost some of the Asian sector. If you looked at western Russia and Ukraine, which was then part of the Soviet Union, much of it looked like a nuclear bomb had hit it. And they fought to keep the nation together.

So you can't calculate the way this is being calculated. I mean, if you want a good case of arithmetic, you've got strategic thinkers who are saying, "Well, we can win with a first strike," and they go through some literally arithmetic calculation—"we put conventional warheads, etc." This goes back even to the '50s and '60s, thinking the unthinkable: "We're going to lose 100 million people, but they're going to lose 150 million people, so since their losses are bigger, we win." And that's complete insanity. Not just that it's inhuman, it's just stupidly wrong! Because you take hundreds of millions of people and kill them, you're not going to have society left, let alone the fact that the nuclear weaponry today can go a lot further.

So, and you have to see that with Russell, you're dealing with an eminently political figure, and he's clear on it. I think there's an interesting example: A guy named [Ray] Monk wrote a two-volume biography of Russell, which was somewhat controversial, but in the preface or the introduction, he says—he's a philosophy professor somewhere in England—and he said: When I started this project, I admired Bertrand Russell, that he was the great English-language philosopher of the 20th Century; and also, later on, a political activist of sorts. And Monk says, but when I began to look at Russell—and mostly he's talking about Russell's personal life—and what he said, and what he did, I was horrified! This guy is not a nice person! He doesn't call him evil, I don't think, but he's close to it. Russell once wrote a novel, and basically, it's all about the evil of science, the evil of human knowledge, the human species destroys itself.

Secret Science vs. No Science

To say he's a misanthrope is to miss the point by a mile. He hated industrial development in the Soviet Union. He hated industrial development in the United States. He had a completely vicious attitude toward the United States, toward science—in fact, the great debate between him and H.G. Wells, because Wells was a problem, but Russell had a quality of evil that's almost unmatched. Because Wells' calculation was that they had to have secret science, because if the British Empire didn't have it, then they would lose out to the other powers, because they would have scientific progress. Therefore, they needed, I think they talked about, Aldermaston, but anyway, you needed a secret—this is where classification comes from.

Russell said, no, it's too dangerous, that if we even have secret weapons production going on, that might leak out, and even the possibility that it would leak out is so dangerous, that we don't want anything. What we need to do is *suppress* science. And this was his entire history. And it started with *Principia Mathematica*, because he denies any form of the kind of creativity that LaRouche talks about, that Plato implies, that Cusa references, that you see in Kepler. That kind of creativity doesn't exist; he'll admit or allow what an existentialist would call creativity, which is basically irrationality. It's a form of freedom that's not really creative; it's just you can do something that hasn't been done, in the sense that Hitler did something that hadn't been done before. You know, you could say that he was more efficient at killing people than anybody had been before: That would be creativity from Russell's standpoint, that would be freedom.

And indeed, it took Russell a long time—the only reason the British went against Hitler, whom they created, was because at a certain point, they thought it might affect their empire. And that was clearly Churchill's view, and that was Russell's view.

And another important way to look at it: How did it work? Well, they took the idea of truth, and they took it outside of the sphere of creative human development. Truth became what they called "foundations" in science and mainly mathematics, at the end of the 19th Century. One of the people they attacked was Riemann. In fact, one of the big disputes was with Riemann over the so-called "Dirichlet principle," where people like Weierstrass *and* Hilbert and others, said Riemann's proof wasn't rigorous enough. Now, there were technical reasons that they could use, to say, well, in certain

cases it doesn't apply, but they weren't relevant cases to physics, or to the real world.

But they took this standard, and the standard became logical deductive proofs. What's true is what's 100% certain, now. We have to have something that gives us effectively complete certainty at the moment. And so they redid Riemann's proof and they said, well, we've saved Riemann. But what this led to, or was part of, was this idea of how do you make a rigorous proof? And that's the standard of truth: rigorous logical deduction.

And therefore, mathematics begins to reign supreme, to the extent that they even destroy mathematics. Because mathematics is a tool, like any tool, it's useful. It gives you a certain precision in a language and so forth. But what they did with mathematics, was, first of all, they reduced it to arithmetic, and this logical formal structure, and that was the standard. Nothing else was acceptable. *Or* you took an existentialist position. You said, well, there is creativity, but it's just irrational outbursts of some kind of or other.

So Russell, of course, to a certain extent, organized the Maoists, along with John Dewey in China; virtually everything he wrote—he wrote a book on relativity theory, which was terrible—he was one of the people who put out the idea that relativity theory was subjective. There's just an enormous amount of this in Russell.

And then, the high point of this: By the end of the 19th Century, we had gone from the steam engine, electromagnetism, electricity, electrifying the industrial revolution of the 19th Century; at the end of the 19th Century, the United States was the leading element of that; Germany was moving in a certain direction; Great Britain was being surpassed. And there is, like or not, a real history of this: where, when certain discoveries are being made, there's an effort by the oligarchy, you think of Paolo Sarpi, ultimately became the British Empire, to claim priority, to claim "we discovered it first."[1]

You know, there used to be the big joke about the Soviets, that the Soviets claimed they invented everything, including baseball. The British actually did this first! You know, that they invented the calculus; they ignore Kepler; ultimately, they're going to say people like Gauss and Riemann were just not rigorous enough, and they introduce real, rigorous mathematics, that kind of "science."

It's All Statistical

And finally, just to give a sweep to this, you have the Solvay conferences of 1927 and 1930, where explicitly, the idea is, we don't know what's going on: You know, Heisenberg's uncertainty. And they'll complicate it more, but it has that basically at its core.

Deniston: This was the studies of the quantum, what's going on in the very small. These paradoxes keep coming up.

Rubinstein: You had relativity theory, which had been pretty much agreed upon by about 1920 or so; and then, you had this quantum breakthrough by [Max] Planck, which has been made into a bit more of a mystery than it should be. It's a quantum of action; it does bring up certain interesting problems. But in '27 and then again in '30, the conferences revolved around the question of, what is this thing with the quantum? How do we incorporate this into a singular worldview that includes relativity and gravity.

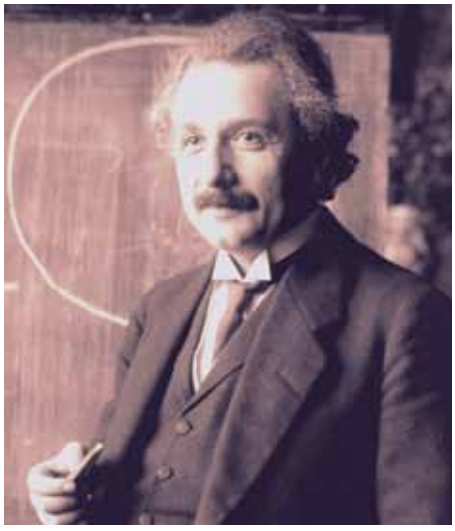
And supposedly, the victory at those conferences was the Heisenberg/Bohr outlook, [Werner] Heisenberg, [Niels] Bohr, and Max Born. This is the Uncertainty Principle *and* the idea that all we have is the mathematics. Which is basically, a relatively sophisticated mathematical model of what's going on. And you have one model that's put forward by Heisenberg and Born, and another model that's put forward by [Erwin] Schrödinger, the wave model, and then this sort of statistical model. And then they combined those—why? How? A guy by the name of [John] von Neumann demonstrated that they're mathematically equivalent!

So you have either a statistical model, which tells you it's purely probabilistic, or a wave model, which gets turned into a probabilistic model! And it's mathematically equivalent, so it functions. But it doesn't—as Planck *and* Schrödinger, in his own way; and Einstein, in particular, who sort of took up the banner, said, "But this doesn't tell us anything about what's going on." So we can use the mathematics, but let's not delude ourselves.

What are the principles behind this? For example, one of the reasons that they make this point is that, when an electron in an orbit moves from one orbit to the next, when it either emits or absorbs a packet, a quantum of action, it's random; you can never tell when that's going to happen.

1. See Jeffrey Steinberg, "Paolo Sarpi: The Venetian Roots of Behavioral Economics," *EIR*, April 17, 2009.





Against those, like Russell, Heisenberg and Bohr, who insisted that all physics is reducible to mathematics and statistics, Planck (l), Schrödinger (c), and Einstein argued, "But this doesn't tell us anything about what's going on. So we can use the mathematics, but let's not delude ourselves."

Now, we can build a model that approximates the randomness, that's what von Neumann did. But the question is, okay, we can use that, but what is the process that's going on?

Einstein and Planck say we should be looking into this. The other people say we can't; there's no way we can go, that's it, it's a complete mathematical model, and that's that. *And that's what all science is today!* It's essentially filling out certain models that derive from this. And are there anomalies? Yes. But do we pay attention to them? Not really; we wait until we can fit them into this model. We're looking to find the "dark matter" that fits the Big Bang theory. We looked for the Higgs boson, for the standard model theory. It's all statistical. There's no causality, there's no principle in it. And we have, at hand, now, something totally different.

For example, what does it means to be random? If that's the case, on a fundamental level, then the universe is simply irrational. Now, why should we stop at that point, when we know, indeed, it's not irrational! There has been a developed course; there's been, any way you look at it, even the uncertainty question, by the way—it's all built on the idea that the photon, at a certain point, is larger than what it's looking for. So your resolution gets messed up; you're basically affecting what you're looking at. So it's a sort of mechanical model of this subject/object question, which has been known for centuries. It's part of the human problem: You have to think of yourself as being *in* the system, and *out* of the system at the same time. That's where all the paradoxes come from.

I'll make a mention of that, because I don't want to rattle on too much. But the question of looking at this randomness, and saying well, what is the cause of this apparent problem? Or how will we deal with this, looking at universal principles? And this is what LaRouche says: If we go into the Solar System, if we deal with the question of fusion, if we deal with the question of antimatter, pose those problems, you'll find the necessity of creative solutions to these kinds of questions. There are going to be not a million different creative acts, it's going to be the discovery of certain principles. You know, Einstein had some ideas on this; Schrödinger—these things are pretty incomplete.

From Vernadsky's Standpoint

I think you'd have to begin to look at it from the standpoint of Vernadsky. What is it in the abiotic, that shows you that the abiotic is beginning to appear non-abiotic, that it has the quality of life in it? What if life begins to appear like creativity? But you can't reduce creativity to that. So this is why Lyn is focused on this idea of creativity per se. And then, what you'll find, is that this *is* the substance of the universe. This is what you were talking to Bruce [Director] about, a couple of weeks ago,[2] that, indeed, it's the move from one appar-

2. See the Jan. 14 program (https://larouchepac.com/new-paradigm).

ent system to another; it's that which violates the Second Law of Thermodynamics, as it's otherwise developed.

The Second Law works within any given system. But we're not dealing with systems; those systems are created by certain principles. And then the question is, human beings have a quality of universality: We can take our entire universe of ideas and subsume them within certain principles. Now, once we've set that system up, we then reflect on the system; usually, we do it by certain kinds of actions that test the borders of that system. And we think that way, it's a certain view of self-consciousness. That produces all the paradoxes; that's why you're never going to have a complete, consistent system, because you can always ask the question, what about the system as a whole? And the system will never tell you about the system as a whole; it's incapable of talking about itself in that way.

We do. So that's what I mean, when I say we're both inside and outside the system at the same time. That's why I think some of these geometric paradoxes fascinate people—the Klein bottle, the Möbius strip—you seem to be doing something very funny. And that's what the mind does all the time, just as a simple example.

And that's what we have to train and develop; that's what's been lost.

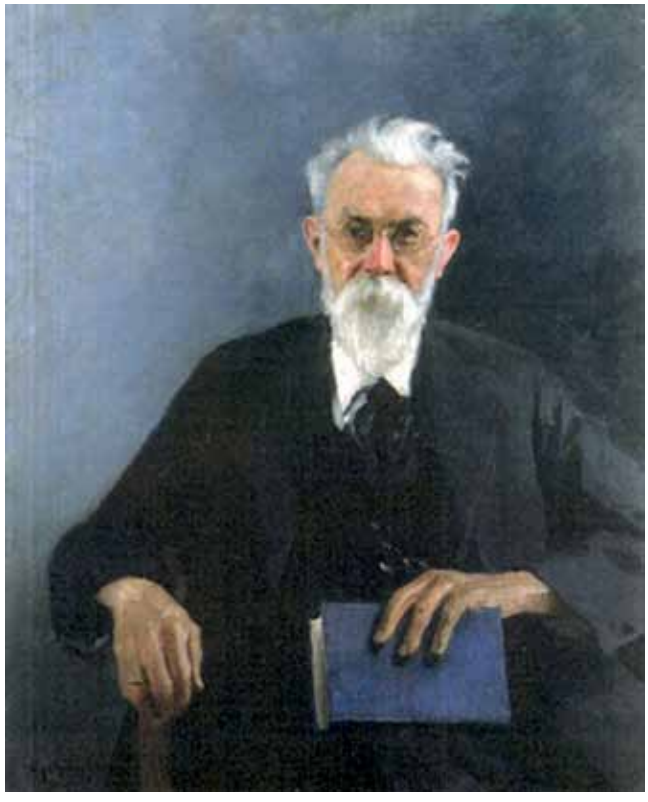
One of the things I've seen, for example, is the idea you can take computers, and take them into poor neighborhoods, and if you buy a computer for every kid in the neighborhood, they're going to get smart because they play with the computer. And in fact, there was one study: They don't get smarter, they get dumber. They're talking to a computer, and they're developing a language of interacting with a computer. Now, computers can do wonderful things, but they're not great conversationalists. So, in fact, I would say, if someone really believes that you can reduce the universe to arithmetic, they're going to be a little autistic, in the most general sense. They're living in a world with a very barren language, with a very limited scope, and they're reduced to that.

So these kids are not going to be improved by iPhones and tablets. Under better circumstances, maybe, they can be helped by them.

Deniston: If it's a tool for something.

Rubinstein: Yes. But if this is their education, if this is supposed to be the core of making them smarter, it's never going to happen.

So this question of what Russell did, with the *Principia*, and then this Solvay period, which kind of shut off—if you think about it, there's been no significant theoretical advance in science, at all, and I don't just mean physics. A lot of the work that was being done in biology in the early third of the 20th Century stopped! Why? Because everything was reduced to molecular biology, genetics, so biology was left behind. We've had some nice things done in medicine, but no real breakthroughs on human physiology, so on and so forth, not a deeper understanding of what life is, itself, the way Vernadsky goes at it, the way Lyn has indicated we should go at it—it's all been stopped by this reduction of everything, essentially to arithmetic, which has no basis.



While there have been some advances in medicine, etc., there has been no deeper understanding of what life is, itself, the way Vernadsky goes at it; it's all been stopped by this reduction of everything, essentially, to arithmetic, counting.

Gödel did the nice thing of proving—and I think one of the things we missed, is Gödel proved that no system is consistent and complete, to put it in its simplest terms. Really, what it amounts to, is there's no complete system. You're always going to be in a situation, even formally, of generating the basis for a new system.

It's All Algorithms

Now you ask yourself, how is it, that we're still dealing with this idea of artificial intelligence, since this was done in 1931; nobody has really challenged the proof; they challenged what it means. Now, what really happened in the mid-'30s, is a bunch of people decided that if you could prove that all of the mechanical or formal ways of calculating something are equivalent, and that's what they did; you have something called the "lambda algorithm," Markov chains—they're all algorithms, they can all be reduced to recursive functions, something like compound interest where the inclusion of the calculation then gets plugged back in as the argument of the function. And you just keep doing this and it gives you a certain feedback loop.

So once they discovered that a Turing machine, a recursive function, certain other kinds of algorithms, all converged on the same set of truths. Then they said, "Okay, that's it!"

In other words, they did the inverse: They said, human intelligence is limited to this, because that's all that can be certain. And that's been the reigning outlook. It came together; actually, there were a couple of significant conferences after World War II, 1947, on this universal science and so forth; a lot of names people wouldn't generally know—Rudolph Carnap, Alfred Tarsky, and so on, and this became the accepted view.

What I've seen of some of Lyndon LaRouche's biography: He took this on explicitly, in '48, and the economic theory of people like [Claude] Shannon, Norbert Wiener on information theory. Lyn made this his objective: to demonstrate the fallacy of this description of the human individual, as compared to real creativity—and Lyn committed himself to comprehending what real creativity is, not just using the word, "Okay, we're doing new things."

And that's been the battle. This is the British outlook; it's monetarism, it's behaviorism; and I think it's also why Lyn is so emphatic on what the Chinese are doing. Because implicitly, they're taking a Keplerian view: What is the nature of the Solar System? Where do we have to go to find out what that nature is? How do we develop the human species on Earth, giving it the powers to look at these things scientifically? And that's where we need to go, and that's critical to politics today.

Russell represented the Empire. You know, Russell wanted to bomb the Soviet Union after World War II; so did Churchill. Churchill went to World War III right after World War II. So did John von Neumann, who was considered the architect of the modern computer, and he wanted to bomb the Soviet Union after World War II also. So, political, dangerous.

But it all rests on a population that really rejects humanity. And as you've brought up, there are people who say "I *believe* that human beings are different," but they really don't know why. So they're left at the mercy of somebody who says, well, if you're rich, it's because God bestowed that upon you, and you must be good. And if you're good, you'll end up being rich, or some equivalent. Or just following the rules. Following the rites. But the rites don't encompass, presumably, the better part of religion. People don't really look at that; they think they've found a safe haven, somewhere, like following certain rules, but they don't really know what humanity is and what needs to be done.

The Destruction of Classical Culture

Megan Beets: In the entire 50-60-year period preceding these fights in the 1920s and '30s, in the aftermath of World War I, you had an intentional and very concentrated attack, first, on the capability of the mind with respect to Classical culture. And I think that's important to put in there, because we're discussing the imposition of the idea that certainty is reduced to the certainty of mathematics and logic. And that was only possible to impose on a population, when you first have killed the certainty of artistic creativity. And you have a population that's so culturally confused, and the culture and the beauty of culture so attacked—that's the only kind of population that could possibly accept that kind of idea.

But you go back into Germany in the 1840s, '50s, and '60s, and you had a deliberate funding of these disgusting dramas to try to replace the predominance of Schiller in Germany. You had the funding of people like Stravinsky, Liszt, the music of Liszt, and the people that Brahms and the Schumanns were fighting against, the Romantics. And you mentioned the idea of irrationalism, creativity, as "novelty," because there's nothing more to do with these 12 notes of the musical scale. But again, it was a political thing: This type of music wasn't popular, it was shoved down people's throats. And it created the kind of disorientation where people lost the sense of certainty in the human imagination, and then the experience of the human imagination which is beyond the sensible domain. Which is really the forefront of creativity, which then generates these new systems that we've been discussing.

Rubinstein: As I understand it, and I'm not an

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The late 19th Century saw the beginning of a concentrated attack on Classical culture, exemplified by the great Classical composers Robert and Clara Schumann (left) and Johannes Brahms, who fought against the irrationalism of the Romantics.

expert on this stuff, but serial music, there's actually a series of steps that you have to go through formally to play through to get to a certain note, and so on; and there's a lot of time spent on coming up with a mathematical model of Bach. And of course it becomes insane. And then you end up with things like, "How can you argue against heavy-metal rock?" Or it's noise; or [John] Cage with 4 minutes and 34 seconds of silence—well it's not really silence; I think his argument is, you can hear the garbage truck going by, and so on, and this is called music! How can you distinguish between noise and music? You really can't.

For example, "progress"—the word "progress" is cynical. How do you know there's progress? Well, of course, people live twice as long—how do you know that's progress? Maybe it's just more consumption. We can go to the Moon—well, maybe that's not really... How can you show there's value in the universe? Well, actually, from a mathematical, reductive standpoint, you can't.

You have to recognize that mathematics is, at its best, subsumed by numerous discoveries, you actually change the mathematical language. Which is what Riemann did at his best, or Gauss, they changed the language! You had a whole different language, which is what Leibniz does with the calculus, it's a whole different language. That's why they bring in the discussion of the infinite in different ways, because of introducing—I don't think the infinite should be conceived of as "endless." The infinite is the kind of change that brings you to a new outlook of the universe which changes everything that went before. You can't subsume it without changing it, and you have to recognize that those changes occurred.

So we changed our outlook on space when we had Kepler; we changed it again in a similar direction when we had Einstein, and we had to relook at the whole question of geometry, physics, time, from that standpoint. We need those kinds of breakthroughs throughout. The idea of a quantum, really, is more rooted in Leibniz, than it is in all this irrationality. So, we would stand on the verge of a whole set of breakthroughs, if we looked at—we have immense amounts of data, but what if we looked at these data with a completely different eye, without trying to reduce it all to the Big Bang? Why don't we say, well, maybe there wasn't a Big Bang? There's a whole other question to be asked here: What's happened?

An Asymetric Universe?

I saw one speculation that you don't look at things from the standpoint of entropy. Entropy is not the direction of the universe, but you have to look at the universe to see how it's moving, anti-entropically, or whatever words you want to use. So one speculation is, from the standpoint of the standard model, there are, call them events or excitations that are even smaller than a photon. So maybe the whole question of uncertainty is wrong, if we could create a gluon microscope or something like that, as crazy as it might sound—who knows? But it's a real thought! And it would open up a whole new era of investigation.

Talk about dissymmetry, one of the great dissym-

The way empires rule, is by convincing the population that creativity is impossible, that it's all conflict, competition, a zero-sum game, said Rubinstein. Hamilton's concept of scientific and technological progress, which has now been taken up by the BRICS countries, must be revived in the U.S. today (left to right: Deniston, Rubinstein, Beets).

metries in the universe is, there ain't enough antimatter. From the standpoint of the standard model, the Big Bang, there should be as much antimatter in the universe as there is matter, which means it all should have kind of annihilated itself in the beginning. And there's a big discrepancy. It's not just a small discrepancy, it's a *huge* discrepancy.

So then you get some pretty wild theories, but okay, this is dissymmetry. Maybe that's one of the beginning points of life, or even cognition, that the universe is *not* symmetric, which is one of the big standpoints of modern physics, is symmetry. But what if the universe is, in a fundamental sense that we can talk about scientifically, *asymmetric,* from the very beginning?

These are things you'd have to look into, to allow the human species to continue to develop. And so, it's eminently political, today.

I think also, the whole question of secrecy is political—there's no reason for secrecy: [they say] we can't work with the Chinese. And there are many scientists who do know that, who are very frustrated by the idea that they're cut off by the Patriot Act and so on. These are political fights that we should be trying to draw people into.

Deniston: …We're at the point where mankind needs to have the premise of a new system, like we're beginning to see with the BRICS, like what China's doing with their space program, oriented toward, again, pursuing in a renewed fresh way, a conception, as you said, of creativity per se—just knock off this reductionist stuff, quit trying to say "It's a result of this, it's a result of that."

What is it that the human mind does? How does it do that? Let's figure that out, let's base society on that. Classical art, how do human beings do that? That's the basis for mankind.

Rubinstein: Yes, I think what we'll get to, is the functioning of the human mind, and there's more to know. We can get some aspects of the way it's developed. In a sense, it's evolution per se. In other words, the human mind puts you in a position where you're constantly evolving, almost to the point that evolution becomes the point of what you're doing, because the rate of acceleration reaches a point where it occurs within a generation, so that somebody who's born needs to go through two or three major scientific revolutions in the course of his or her lifetime. Or artistic developments. So that a lifetime evolves from the standpoint of the human mind.

And as Lyn has discussed it, this is what we mean by the soul and by immortality, fundamentally, leaving aside religious differences that you can have about how to celebrate that and so forth, but the fact is you can have an ecumenical agreement that that's the nature of human existence in this world, and whatever other worlds there might be.

Reviving Universality in Science, Culture

From a political standpoint, another important thing to realize is that one of the things that happened during this period leading into World War I, the turn of the century, the attack on Classical art, is, in a sense there were those in the scientific community who thought that science would be a way of bringing nations together, into cooperative development, because there was a universality in science, a commonality of language, even of different cultures. So people like Planck and Einstein, and Curie, and many others, names that are perhaps not

so well known, viewed this as a direction. And they also were cognizant of the powers that were being opened up that would require this. They may not have known about nuclear weapons, necessarily; some may have had some ideas; but they saw this, as even World War I represented a level of destruction that had been unheard of.

But World War I broke this up. It introduced a great deal of pessimism, because whole chunks of the scientific world fell into certain kinds of traps of nationalism of a certain kind—it wasn't really nationalism, it was chauvinism—so the German scientists were pro-German, the French scientists were pro-French, and the British scientists played the game, and they demoralized the scientific community; so that people like Einstein and Planck came out and saw this whole thing being destroyed.

And what came out of it was an idea that this scientific dialogue could not go on on a universal basis. When we got out of World War II, there were people who understood, like General MacArthur, and there were others, but he was a leading voice—he was one of the great military figures of the century, minimally—saying, we can't go on. I'm soldier, but being a soldier is becoming an obsolete reality, we need something better than this.

But the pessimism was so great at this point, that the idea was considered impossible, and today it is considered impossible. It's all competition, it's all conflict, it's all geopolitical, it's all zero-sum game. And this is the way empires rule. And you can look at this, and if you want to ask the question, is there a British Empire, this makes the point.

And we're at a critical decision point, because like the Chinese, the Indians, in a different way the Russians, Brazil, they've come to the conclusion that they cannot survive in this zero-sum game. And therefore, they've opened up a pathway, which itself is coherent with the outlook of people like Alexander Hamilton and the American Revolution. Hamilton's whole point is, value is artificial labor, it's scientific and technological development. It's the human mind, and that's at the core of this.

Over the last 40 years, it no longer exists in the United States. LaRouche represents it; there may be other people around who believe it quietly in their homes, but this is what we have to revive, and the way to do it, is to ally with the so-called BRICS nations....