

How LaRouche Youth Organizing Uses the Dirichlet Principle

The May 28 edition of EIR's Internet radio program, The LaRouche Show, featured a discussion of Lyndon LaRouche's latest document, "The Noëtic Principle: Vernadsky and Dirichlet's Principle," with Bruce Director, one of the prime authors of the LaRouche-commissioned series of pedagogical exercises, called "Riemann for Anti-Dummies." Host Harley Schlanger and Director were joined by a panel from the LaRouche Youth Movement, who described how they were applying their own studies in the principles of mathematical physics to conveying economic principles in day-to-day organizing. The youth also had an opportunity to query Director on specifics of some of the concepts presented in LaRouche's document.

The LaRouche Show airs weekly on Saturdays, from 3-4 p.m. (eastern time). The animated economic graphics that Aaron Halevy references, "Manufacturing Jobs as a Percentage of Total Jobs, Continental U.S.," can be obtained by subscription at EIR Online at <http://www.ljcentral.net/eiw/wa6mfj/flashmaps/index.html>; earlier exemplars of the animations can be obtained from the archive of LaRouche's most recent webcast at http://www.larouchepac.com/pages/audio_video_files/2005/050407_arc.html. Animations accompanying the "Riemann for Anti-Dummies" series of pedagogical exercises can be found on the LaRouche Youth Movement website <http://wlym.com/tiki/tiki-index.php?page=Pedagogy>.

Harley Schlanger: Good afternoon, and welcome to The LaRouche Show. It's May 28, 2005: It's the end of a week which changed the world. I'm Harley Schlanger, the Western States spokesman for Lyndon LaRouche. And we're going to be discussing those principles which are behind the dramatic and very positive changes which occurred this week, primarily in the U.S. Senate. We're at a moment which was characterized by Lyndon LaRouche two days ago at a seminar in Berlin, as one of both great danger, but also of enormous potential. We see in the world economy, the deepening of an

economic crisis: Hedge funds may be on the verge of blowing out—we'll know more by the end of this month, and definitely by the end of June. Ford and General Motors are teetering on the verge of bankruptcy. There's an effort to wipe out the pension funds of major U.S. corporations. So, we have an economic crisis deepening.

And now, we have a danger, because of the effects of what happened in the Senate, of Cheney going nuts. Cheney, who's a sociopath in any case, has a nuclear option. He may have lost the "nuclear option" in the Senate, but we've got to keep our eyes on the potential danger of an attack on North Korea, less likely, on Iran.

But, what happened this last week, is that a bipartisan group of Senators rejected the drive by the Cheney-Bush Administration to destroy the U.S. Constitution. It was the defeat of the so-called "nuclear option," which would have put an end to the right of the minorities in the U.S. Senate to filibuster in the case of the absurdly terrible nomination, such as the one of some of these judges; such as [John] Bolton, who's not a judge, but he's up for United Nations Ambassador. But, what happened is, a group of Democrats and Republicans came together, and made an agreement, which not only prevented the "nuclear option" from being detonated, but essentially turned Bush into a lame duck.

This was an action taken by Senators, which had been shaped by Lyndon LaRouche, and the deployment of the LaRouche Youth Movement internationally, but especially in Washington, D.C., and we'll be discussing that in the course of the show today.

But in terms of what LaRouche has done, since the end of July in 2004, when he formed the LaRouche PAC, he's consistently put forward a series of policy initiatives, based on his forecasts—both in economics and in statecraft—to create an alternative toward a march toward fascism under the direction of Cheney, using his idiot-President as a frontman. After the Democratic Convention in Boston, on Nov. 9, a webcast by LaRouche put forward a strategy centered around



EIRNS/Robert Dettlor

Bruce Director, author of the ongoing pedagogical exercises “Riemann for Anti-Dummies,” works with youth from the Boston LaRouche Youth Movement.

defeating the Social Security privatization, which created motion within the Democratic Party to rally around the immediate question of Social Security privatization, but more broadly to defend the FDR policies embodied in Social Security. And then, on Jan. 5, another webcast by LaRouche laid out a strategy in which he called, specifically, for a bipartisan coalition to resist the policies of Bush and Cheney.

Now, today, we’re going to look at how LaRouche knows what he knows, as embodied both in his unique forecasting, and how that enables him to craft a strategy to shift the direction of global politics. He’s just written a new paper, titled “On the Noëtis Principle: Vernadsky and Dirichlet’s Principle,” which will be in the June 3 issue of *Executive Intelligence Review*, and in which he discusses his method of analysis, forecasting, and also political transformation.

So, with us today on The LaRouche Show, will be Bruce Director, who is the primary author of the ongoing revolutionary series of pedagogical exercises, “Riemann for Anti-Dummies.” And we’ll have our regular LaRouche Youth Movement panel: today’s guests will be Aaron Halevy, who’s in Washington, D.C., Steven Jeffery in Detroit, and Riana St. Classis in Seattle.

Now, I would encourage people, if you have questions on this, to get your emails going early. You can email a question to us at radio@larouchepub.com.

So, Bruce: Welcome to the show.

Now, I know it’s not possible to explain the Dirichlet Principle in the course of a few words, or even the time we have on this show; that, as Lyn has always insisted, one must make the discovery in his own mind. But, what is LaRouche

discussing, when he speaks of the Dirichlet Principle? Where does it come from?

What Does LaRouche Mean by ‘Dirichlet Principle’?

Director: Well, it comes out of an investigation that began initially with Leibniz, into the question of basically: How does one know how the physical universe operates? And essentially, how can we investigate not only the physical world, but also how can we investigate the way we investigate the physical world? And Leibniz deals with this, in a particular context, having to deal with the question of “powers,” but Leibniz’s investigation goes back all the way to the ancient Greeks. And this investigation by Leibniz was continued through Gauss, and Gauss’s collaborators, Dirichlet and Riemann.

Probably the best way for people to get a sense of it, is to look at it from the standpoint that Lyn is approaching it, which is from the standpoint of economics. If you look at the situation that we face right now, as Lyn has emphasized: We are in a global financial collapse. There are two things happening here: One is a financial collapse, which is the collapse of derivatives markets and financial systems and so forth. And that in itself poses some political problems, but that’s not the biggest problem we face. The biggest problem we face, is the effect of over 40 years of a policy of deindustrialization and collapse in the physical economy. And so, we have to look at, now, what are the principles of economics, that we have to understand and come to some agreement on, so that we can develop those kinds of economic policies which will have

the greatest impact in shifting the direction of the physical economy as a whole.

Schlanger: Now, Bruce, this idea of physical economy, actually LaRouche identifies as a discovery of Leibniz.

Director: Correct. And Leibniz is the first one to enunciate the idea of physical economy. But, of course, you can already see the epistemological implications of physical economy, in the subjects that Plato is treating in his dialogues. Because this really is the question of what is the nature of man, and what is man's relationship to the universe as a whole?

And so, with Leibniz, you have for the first time a self-conscious investigation, or self-conscious understanding, of how this process works, with respect to man's relationship from the standpoint of society to the transformation of the physical economy. But it really doesn't get clarified, until Lyn's groundbreaking work in economics, which has come to be known as the LaRouche-Riemann Method of Economics.

But this is precisely what we have to look at right now. Because, you've got a collapse of the *physical* basic capacity for the development of mankind occurring globally right now. And the question is, what kind of projects can we implement? What kind of policy initiatives can we take, that will give us the greatest shift in the entire direction of the global economy as a whole? As opposed to trying to deal with little problems, one by one.

Why Do I Have To Go Back to Philosophy?

Schlanger: But Bruce, you realize that most so-called "economists" out there are saying that these are largely matters of monetary policy, or they're questions of—the dominant axiomatic school today of the neo-conservatives, is "budget cuts and tax cuts." And the problem a lot of people in the country are going to have, is they're going to start out by saying, "Okay. I realize things are getting worse. But, why do I have to go back to Plato? Why do I have to understand philosophy? What does Leibniz have to do with the price of a cup of coffee at Starbucks?"

Director: Well, that's why we've got to have this argument. Because, I think a lot of people right now, are beginning to realize that we're in a crisis, and that the kinds of thinking that they've depended on up till now don't work. And, as the poet Shelley said, it's at a time of crisis like this, that people are capable of grasping and imparting profound conceptions concerning man and nature that they otherwise would not be able to do.

So, it's under these kinds of conditions, that's precisely when people realize that the old ideas don't work, that if somebody enunciates the correct ideas and the historical development of it, people will begin to look at that. Especially, you see this with the development of the LaRouche Youth Movement, which really is the social process, by which we're getting a reintroduction into the thinking in society of these profound ideas, which are the ideas which led to human progress up to now.

Schlanger: So, virtually everything that's been produced by so-called "economists" since the period of the mid-to late-1960s, with the shift to the post-industrial society, has to be tossed out?

Director: Well, yeah! This stuff obviously doesn't work. But, it's not just that the theories are wrong. It's the *thinking* that leads to the theories that are wrong, and this is what we have to get at. You have to shift the approach to what we actually think about the economy. As Lyn has emphasized—as Leibniz emphasized: The only source of wealth in the economy is the development of ideas, is new ideas. And those ideas are developed in an economic process, through the development of technology, and the application of that technology in infrastructure and other types of economic processes, to the development of improving the conditions of human life, which has the net effect of increasing the capacity of the human mind to produce even *greater* ideas.

So, when you look at an economy in its fundamental form, you see that the only input into an economy is ideas, and the fundamental output in the economy is new ideas. It's not products or material goods, it's ideas.

Now, of course, ideas don't exist out there in the ether, floating around in empty space. Ideas exist inside and through the process of deliberation and discussion by *individual* human beings, who make individual discoveries—unique in some cases; revolutionary discoveries; in some cases, the replication and re-discovery of previously made ideas—and the ability to communicate those ideas both among our contemporaries, and also to future generations.

So, this process of the development of ideas, of individual human beings, and the communication of ideas in the social process, is the way human society progresses. And that's been our history. And that will always be human history, because it's intrinsic to the nature of man. So therefore, you have to look at your economic policy from the standpoint of, how does your economic policy enhance the ability to produce ideas? And that can only come through the development of increasing the material standard of living, and the physical conditions of life, for as many people on the planet as you possibly can.

Revolution in Thinking

Schlanger: Bruce, I think one of the interesting questions that comes up, then, is that what Lyndon LaRouche is doing, is carrying out a revolution in thinking—going back to old ideas of principle that worked in the past, but injecting something new. Now, in this new paper, he talked about "Vernadsky and Dirichlet's Principle." What's new in this new paper by Lyn?

Director: Well, let's look at this in comparison to the way this approach was taken—not in such a conscious way, but in a certain sense, in a conscious way—by Roosevelt: You had a situation where the entire physical economy had been destroyed, or a collapse, not simply by the financial collapse of 1929-33, but the ongoing physical collapse that

had been occurring all during the Twenties. And Roosevelt had to come up with certain projects, certain key infrastructure development projects which would have the greatest effect on changing the capacity of the system as a whole. Or, as Leibniz or Riemann would talk about it, the “potential” for the economy to produce as a whole.

So, Roosevelt couldn’t deal with, or couldn’t solve, every little problem one by one. So he looked at certain key problems. So, he focussed on things like the TVA project, the Bonneville Power Authority and so forth, which had the effect of solving not only a particular problem of power generation, for example, in the Tennessee Valley Authority or in the Northwest, but which created an overall increase in the *potential* for economic development as a whole.

Now, that’s exactly an expression, in the form of an economy, of the Dirichlet Principle, of what Riemann would look at in physical science as a Dirichlet Principle. Now, Vernadsky gives us the capacity to look at this in a somewhat more fundamental way, which is: Vernadsky insists that when you look at the universe as a whole, you see it’s characterized by three distinct processes: the abiotic, the biotic or living processes, and the cognitive processes. And, when you look at the development of the Earth as a whole, you see that it’s the interaction of these three mutually independent, but connected principles, which is what the development of the Earth is about.

If you look, for example, in the case of the biotic with the abiotic, you get what people tend to understand as the Biosphere. The interaction of products, materials which originally were initiated in abiotic form, such as the carbon dioxide in the atmosphere, which is processed by plants, and then introduced into a living process, and then processed by animals and respired as oxygen, back into the atmosphere. So, those oxygen molecules are a material substance, which in one state are in an abiotic state; in another state are incorporated into a biotic, a living process. But the living process is the one that is actually dominating these processes in the Biosphere as a whole.

Well, now you add to that something else, which is the capacity of human beings to discover principles and apply those principles, which is something which only human beings do; but, if you look at the effect of human thought on the development of the abiotic in the biotic domain, you see that mankind, the ideas of man, have increasingly come to dominate the Earth, and ultimately parts of the universe outside the Earth.

And so, this understanding of this relationship between the cognitive, the biotic, and the abiotic, is really what you’re talking about in economics. You have to look at the interconnection of these three processes as a whole, and choose your economic policies from the standpoint of this process, as opposed to the simple, mechanical way of people saying, “How do we produce more VCRs that can be sold at Wal-Mart?”

Schlanger: So therefore, it has immediate implications

for statecraft.

Director: Oh, absolutely! And, of course, it has immediate implications for life or death of civilization: Either we begin to think of our policies, our national policies and international policies on economics, from this standpoint, or civilization will not survive. Mankind has to grow up. The relationship of thought, or as Vernadsky would talk about the Noösphere, the development of the Noösphere itself, *is* the subject of economics. And either we are conscious about developing the Noösphere, or we will suffer the consequences of it.

LYM Organizing Transforms Washington

Schlanger: Well, I want to come back to you in a few minutes to pick that up again. But, I want to bring in our LYM panel here, starting with Aaron Halevy, in Washington, D.C.

You know, back in November, I think the country was somewhat caught, after the election, in the grip of pessimism, the idea that “now Bush has control over everything, he’s going to do whatever he wants, you can’t change the Congress.” But, we saw an incredible change this last week with the emergence of this bipartisan coalition *against* the nuclear option, which primarily saved the Constitutional process in the deliberation and “advice and consent” role of the U.S. Senate.

Now, this was partly the result of reality hitting. But also, the result of some significant, continuous deployments by members of the LaRouche Youth Movement, with regular Days of Action, distributions of LaRouche’s material including his “Recreate the Economy”; his new book, *Earth’s Next Fifty Years*, as well as his now almost-daily leaflets, the “Guts & Government” and then the one on “Save the Constitution.”

Aaron, why don’t you just give us a quick report on what you’ve been doing, and what changes you’ve seen since you’ve been in Washington, D.C.—which is about two and half months, I think.

Aaron Halevy: It’s been almost three months that I’ve been here. And even in that small period, there’s visibly a lot of changes that’ve happened, especially in the government and the institutions. When I first got here, I did notice that everybody here knew who LaRouche was—either if that enraged them, or made them secretly a little happy about what we were up to.

But, more and more, what’s been happening is that people are starting to pull us in for discussions. We’ve become a serious institution in Washington. I guess I’d say, when we first started doing this lobbying, it was kind of nasty. We’d go in, and say, “Hey! We’re with LaRouche. We want to meet with this person!” And they would say, “Sorry—we’re not going to meet with you guys,” or “We’ll take this literature, thanks!” And it seemed ineffective, at first.

But, we did it, every week—going in, bringing in some literature, creating a definite presence. And then, after some big changes were happening, like the filibuster thing, the question of the economy, of General Motors, we started getting a



EIRNS/Finn Hakansson

A LYM organizer in New York's Union Square demonstrates methods of doubling the square and Archytas' method of doubling the cube. This kind of pedagogy conveys to the population how one "knows," and from that change in conception, how one can act on something like the economy.

lot of meetings. And then, we started making the calls into the offices, and getting even more meetings. And now, we're looking at it, where sometimes, we'll call on Monday, and someone will us back on Tuesday for a meeting, on Tuesday! Or someone will call us for a meeting on Wednesday. And before, usually, it would take a couple weeks, and that would be only if we have someone who lived in the [particular Congressman's] district, or something like that.

Schlanger: Aaron, I know part of this is driven by the sense in Washington that there are big, dramatic changes occurring back in the home districts, especially in the Midwest with the collapse of auto, or wherever there are auto plants. But, are you getting the sense that, besides just wanting a recipe or a formula for a quick fix, that people are beginning to get interested in the deeper philosophical and scientific implications behind LaRouche's solutions?

Halevy: Yeah, because of this book that LaRouche came

out with, *Earth's Next Fifty Years*. We put a bunch of those out in D.C., and after getting those out to all the Senate offices and the staffers, there has begun a deeper process of discussing the longer term of the collapse of the economy. People are looking for the causes, and we're right there. Sometimes, we'll bring in the laptops and show them the animations that LaRouche has commissioned, describing how processes in economics are more than just momentary decisions. It's long-term outlooks that create these changes. And people are more willing to look into it—especially Republicans, too, which is very significant. We're getting a lot of meetings with Republicans, discussing these things: like Franklin Roosevelt's miracle, and the kind of things he was doing.

Animations: Economics Is No Mickey Mouse

Schlanger: Now, Lyn announced today that he's going to upgrade, overall, the production of the animations, that we'll make available on the website. And these, in some cases, show over a period of time, the collapse of health care per county in the country; collapse of steel industry, auto sector. What response are you getting? Do you find people are shocked, when they see the fact that they've lived through 25-35 years of disintegration of the economy? What's the reaction you get, Aaron, when you show that?

Halevy: It is just like that: You show them—there's one animation we have which is the whole United States manufacturing, and the darker colors represent the more dense manufacturing jobs. And it starts in 1970, and, at first, if you show it to an economic staffer or something—at first, they'll look at it, and they'll look right at their state; they'll just concentrate on their state, and see some of the changes, and they're like, "Oh, wow! Oh, wow! Ooh! Look at that!" And they're following the progress up until the '90s, when you have NAFTA and other things happening, and then you see a *huge* shift. And then it's basically bare, and it shows the comparison of 1970 to 2000. And then you show it again, and you say, "Well, look at the rest of the country," and then these guys really start to get it. And "Oh man! Something has to be done about this. Can I get these animations? Can you e-mail these, or something?" That's what people are starting to ask us.

The Detroit Picture

Schlanger: Hmm! Well, now we're going to switch to one of those states, where the dark, dense pattern of manufacturing has been replaced by unemployment, bankruptcy of cities, and now we see Ford and General Motors heading toward bankruptcy. The key question for the future, is going to be whether the Wall Street speculators, the sharks, come in, and devour the machine-tool sector—sell them off as junk, or sell them off to other countries; or whether LaRouche's proposal of retooling, of direct government credit to retool the industry for development of high-speed rail systems and the like, whether that's done.

Now, Steve, you've been out daily with this pamphlet "Recreate the Economy," and organizing in the heart of the

auto sector in Detroit: What kind of response are you getting?

Steve Jeffery: Well, it's quite a scene. You know, the Midwest, Detroit in particular, is a pretty deserted place, and it's had a big effect on the quality of thinking of the population. One thing I've found that's been a very necessary fight, that many people don't realize, a lot of people are looking for Kerkorian's help in terms of helping and saving GM and Ford—

Schlanger: For the listeners who don't know: Kirk Kerkorian is basically a California-based, Wall Street speculator, who's been brought in to buy stocks of General Motors for the purposes of a financial salvation for the shareholders and bondholders, by selling off and destroying the corporation.

Jeffery: It's been actually one of the central things in terms of organizing, that a lot of people are running into. There are centers in Detroit where we're getting more and more of the population, and one of the major ones is actually the motor plant, because, everywhere else the city's desolate. Now, these guys, there's been a very, very positive response from the UAW members, in terms of getting an insight into somebody who has a real intention of fighting to rebuild, seeing young people—because, Detroit is hugely sprawled. And what we're finding more and more, because of the intensity of our deployment, is people running into us in various places; where people, actually a lot of the UAW and auto workers, are distributing our literature, after seeing the seriousness of how we're organizing.

And, when people get an insight into what the threat is from guys like Kirk Kerkorian, or the others running the country, whom they already hate but don't know anything to do about. And, the optimism we provide is really very central. And we've been building pretty strong meetings in our office, in recent weeks, because of this deployment we're organizing.

One of the very powerful things that's happening, is we're getting more and more people reading our literature. The mosques, where we deploy—and this is very important, because this is the largest Arab community in the country—and I'm getting more and more people, when they see me, they're just thanking me. They're taking extra literature. We're getting a type of mobilization where, I'd say we probably have more people distributing our literature, than there has been in Detroit in a very long time.

Schlanger: Is there a growing sense of urgency among auto workers? Do they—after the United Airlines announcement that they're dumping the pensions, do you think that started to shake people up more?

Jeffery: It's an odd situation, because we've been sneaking in on these UAW presidents, catching them when they're having their meetings, and about to try to take it easily that their industry's collapsing. So, we have certain key UAW presidents that are working with us, like Mark Sweazy, who was on the show a few weeks ago. But, in general, the UAW workers, they're much more honest. But, there's not a mobili-

zation going through the UAW right now. So, in that sense, it's more like a—it's a sadness, not an urgency. I was just going to end, that we are providing the intensity and giving a method for mobilizing to these UAW members, these auto workers.

Pedagogy, Teaching Gauss, and Organizing

Schlanger: If people want to get a sense of the reaction, our guests on The LaRouche Show on May 14—and this is archived on http://www.larouchepub.com/radio/archive_20-05.html—included UAW local presidents, Eugene Morey, from Ypsilanti, Michigan, and Mark Sweazy from Columbus, Ohio; as well as Sue Daniels, who's a leader of the Texas AFL-CIO down in Tyler, Texas.

I'd like to bring on our third youth panelist, Riana St. Classis, from Seattle: Riana, you've been teaching pedagogicals as part of the recruitment process for quite a while in Seattle. Tell us a little bit about how you approach this kind of material, when it comes out from Lyn, in preparing for the classes, and giving people an opportunity to make their own discoveries.

Riana St. Classis: Well, actually, it's kind of interesting, because the way that we've been looking at some of the pedagogical work that we've been doing, has been changing. And Lyn's new paper gives a good way to look at some of the change: because we've been thinking a lot more at how to look at this, as Bruce was saying, from the standpoint of economy. And how to apply these ideas, about how a change in the actual conception that people have about the way that, say, something like economy works, changes their ability to act on the economy.

And so, for instance, there's the project that I think has been discussed before, that people in Los Angeles have been doing on the Rural Electrification Act and looking at that in more detail, as a way of being able to start to give some of these Senators and policymakers, and the population in general, an idea about how to—. Because we've sort of given them a sense of the collapse, and we've been documenting that fairly well with the animations. But, then, also giving them a sense of how you can know, as Aaron was saying, looking at the country as a whole, and how you can get a sense of how to change the entire structure, in a knowing way.

And so, we've been looking at the challenge that Lyn gave us about mastering Gauss's "Fundamental Theorem of Algebra" more from that standpoint. And it's actually had a really good effect. Because, there's a lot of technical aspects to the paper; there's a lot of technical questions that people can get embroiled in. But when they begin to see how working on these things is actually increasing their own capability of having profound conceptions, and then seeing how that is analogous to looking at how profound conceptions, put into an economy or disseminated through a population, can increase the potential of that economy, and when they see that analogy, it gives them a great new sense of willingness to push forward on difficult work.



Library of Congress

When he was 60 years old, Carl Gauss worried that his mind wouldn't stay active enough, unless he learned something completely new about something he knew nothing about. And so he took up the study of Russian, Sanskrit, and botany—a good lesson for today's Baby Boomers.

And so, as Aaron was saying about getting these meetings with Senators' offices and Representatives' offices, this is actually what we've seen as well, with the Democratic Party in Seattle, and other work we've done in Portland and in Oregon. Now that they are more familiar with us, there is this dialogue that's being conducted, and we're able to increase—as Aaron was saying—the profundity of the ideas that we're putting in. We're not necessarily always just trying to bang our heads against them on the issue of free trade, but we're able to start to develop something more of a real process. And we're seeing with the population as a whole, as well.

So, we're trying to look at the pedagogy more from that standpoint lately.

Schlanger: Riana, let me ask you a question that gets at this on a personal level. You had an interesting academic background: How frightening is it, to challenge the axioms from your college days, and then be able to make these breakthroughs?

St. Classis: You know, it's funny, before the show began, I was talking to Aaron at little bit, about someone who's doing a lot of work with us now. And it's interesting, because he's been confronting his economics professor—he's in this department called "Informatics," so you can imagine what that might be! And, he had to take an economics class, and he's been confronting the professor on their course reading, and also on these basic ideas that the professor's putting forward about globalization and free trade, and some of these ideas about the New Economy, that he's been coming to look at.

So, he's started to develop this e-mail dialogue with his professor, and he's really frustrated because the professor won't actually discuss any of the ideas with him. The professor was at first very excited that he had a student who was actually responding to him, so, he started to tell him about LaRouche, and the professor got very, very cold, and just said, "Well, you really need to read this book," and gave him a reading list.

And so, he's been talking to me about it, and I said, "Well this is a perfect example of what the real problem is." And he said, "You know, I get the feeling that my professor doesn't have any ideas!" And I said, "Yeah, it's true." He said, "I think that my professor's just recycling things that he's heard before." And I said, "That's probably true, too." And then, he said, "You know, I think my professor's afraid." And I said, "Yep, that's a lot of what we're dealing with!"

So, I think that in a certain sense, though, when you really start to confront it, and you really begin to get a sense of how much we can really do, then it becomes fun to pull these things out.

How Can a Neophyte Tackle Gauss?

Schlanger: We have a couple of questions from the conference line that we'll get to in a moment.

Bruce, let me go back to you for a moment. Let's just say you're a typical, middle-aged, brain-dead Baby-Boomer, and you suddenly realize that everything you've been taught all your life is wrong, and you're going to have to change the way you think. How do you begin to approach Gauss and the question of the complex domain?

Director: Well, I would approach it from Lyn's writings, because he will situate it for you, first of all, from the standpoint of why this is absolutely relevant for being able to figure out what's been happening in the world, and what you need to do about it. But also, he'll guide you through the implications of—the scientific implications, and put it in the actual context. Part of the problem is, is that the level of literacy is so poor—or put it conversely, the level of illiteracy is so high—on basic questions of history and science, people just are ignorant of things, that even if you were to take up, and read something like Gauss's paper directly, unless you had enough of a background in the history of science and the history of ideas, you wouldn't be able to recognize what Gauss is talking about.

So, the best way, the quickest way to catch up on everything you've missed, is to start from the standpoint of Lyn's writing. And then, I would urge you to find some members of the LaRouche Youth Movement and get them to sit down and explain it to you.

Schlanger: You know, we've started that in Houston with the Boomer members, the older members who are involved in raising money and doing the outreach. They've started a Gauss class for Boomers, which is being taught by a couple of the youth, which seems to have people both challenged, and in some cases, nearly hysterical; but also, in other cases, they're getting a lot out of it. They're doing the work, and it does take a lot of work, doesn't it?

Director: It does. And I entirely recommend it. The work is highly recommended. First of all, this is absolutely necessary that people understand this: If you're going to be able to convey Lyn's ideas, and you're going to be able to organize the population as to what they have to know, you have to know it.

But I also point to the famous story about Gauss, who, when he was 60 years old, was worried that his mind would not stay active enough, unless he learned something completely new about something he knew nothing about. So, he took up the subject of the study of Russian, Sanskrit, and botany, three topics which were completely new to him, just so he could have the mental exercise. This is something Boomers are not really used to, but it's a good thing for them, and they'll benefit simply from the exercise. But in addition, it's also necessary they know this.

Where Do New Ideas Come From?

Schlanger: Certainly more challenging than coming up with lottery numbers.

Let's take a question from the conference line. We have Ashley from Boston, can we bring him on? Go ahead.

Q: This is a question for Bruce. In the Youth Movement, there's been this subject of ambiguity around Dirichlet's Principle, and the way Lyn has been discussing it, which I think is one of the reasons why he wrote this new paper.

But, you had brought up earlier, that the fundamental input into the economy is ideas, and the output is new ideas. And in Lyn's new paper, he talks about how Riemann earlier in his life used the term "*Geistesmasse*," as meaning "thought-object." And he goes into explain, how later on, he replaces the term "*Geistesmasse*" with "Dirichlet's Principle." And I was wondering if you could shed some insight onto the relationship between these two ideas.

Director: Well, I was struck by what Lyn said there, as well, and I think it's quite beautiful, and quite an important insight. Because, what you're looking at here, when, say, you're looking at an economy; or, in Lyn's new paper, he has these various quotes from Vernadsky, where Vernadsky talks about the Noosphere as being in a state of "dynamic equilib-

rium": That is, you can not understand this in some type of mechanistic way—that this part touches that part, and that part touches this part, and this part touches that part, or something like that. But you have to look at this, from the standpoint of the system as a whole, and what are the characteristics of the system as a whole that determine the range of possibilities of the interaction among all the different parts, and that if you change one thing, you change everything. This is the way an idea works.

What Riemann is doing with this concept of *Geistesmasse*, is helping to develop, in the domain of epistemology, a way in which we can think of things which are functioning as a whole, and what kinds of changes occur, which transform the system as a whole. Go back to the idea of an economy, which is probably the easiest way to get it in a concrete sense: You've got a certain set of economic relationships, economic activity which is going on. But that economic activity itself, is dependent upon certain preconditions which determine the effectiveness of any economic action. And those preconditions are, your level of infrastructure, primarily—both your hard infrastructure, transportation, power, water, those kinds of things; and your soft infrastructure, your educational level, your health-care level and so forth. These things are not independent of each other, but they interact with each other, and they determine what is *possible* in the economy.

Kepler's Revolutionary Discoveries

The most crippling error in mathematics, economics, and physical science today, is the hysterical refusal to acknowledge the work of Johannes Kepler, Pierre Fermat, and Gottfried Leibniz—not Newton!—in developing the calculus. This video, accessible to the layman, uses animated graphics to teach Kepler's principles of planetary motion, without resorting to mathematical formalism.

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Remember that what's crucial about an economy, as well as about ideas, is you're looking at, what is possible? What is possible under this conception? And this is the issue Riemann is dealing with, with this question of *Geistesmasse*.

He talks about how—you know, you have a certain concept of the universe, whether people are conscious of it or not, they do. They have a certain idea, concept of how the universe functions, what the principles that govern the universe are. This is a thought-object. And then, Riemann says, under this concept, certain things are possible and certain things are not possible. And then, you get some experimental evidence which appears to be impossible from the standpoint of your current concept, which causes you to make a revolution in your own thinking, and to come up with a new concept in which you understand now the universe, as it experimentally presents itself to you.

The simplest example of that, is the case of the non-uniform motion of the planets, as Kepler recounts it in *The New Astronomy*; it's the first assumption of reason that the planets are moving in perfect circles, some kind of spherical universe. But then, when you see the non-uniform motion of the planets, this is experimental evidence, that a concept of the universe moving according to perfect circles is incomplete! And it requires a new concept—not a separate idea for the planets than the rest of the universe, but one concept of one universe, in which you would have these two different types of motions: the uniform motion and the non-uniform motion, and the different gradations of the non-uniform motion.

So, you have to come up with a new idea. And what Riemann is showing with the case of his understanding of the Dirichlet Principle, is how that process actually works: How new ideas emerge, new singularities emerge which cause a complete revolution and change in thinking of the way you've got to think of the universe as a whole.

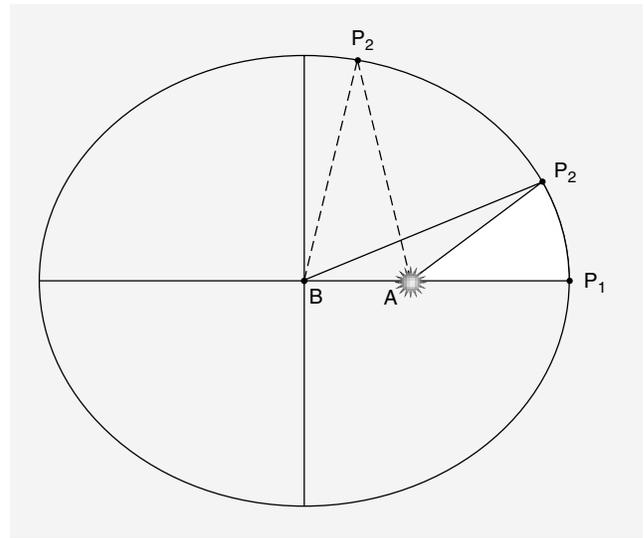
Gauss's Work on Earth's Magnetism

Schlanger: Let me turn to Aaron for a question: Aaron, you're preparing for a cadre school, coming up between Washington, D.C. and Philadelphia. I know you're working on a panel on this. I wondered if you have any questions you wanted to ask Bruce in preparation for what you're doing?

Halevy: One of the things I was trying to grasp, is, when Lyn started introducing this concept of Dirichlet's Principle—or at least, recently—he's been bringing up a lot Gauss's work on the Earth's magnetism. We tried to read it, and in the beginning, it somewhat makes a little bit of sense of how he does it, but—I was just wondering, how does it work, in this question of potential and powers? How was Gauss looking at it, because Gauss doesn't just lay it out so easily?

Director: Well, the Earth magnetism is a very good example of this, because this was the first time—and of course, Dirichlet was involved in this, as well as Alexander von Humboldt, who was the key organizer of it, and Alexander

FIGURE 1



Fidelio

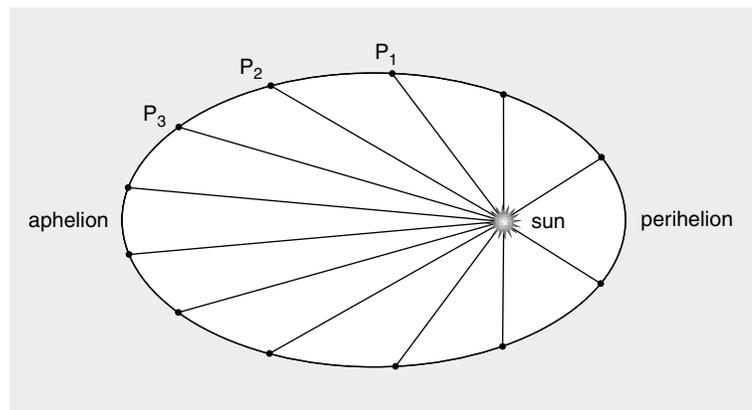
Kepler's elliptical-orbit hypothesis. Here, length P2B is not constant, but constantly changing at a changing rate. What lawful process now underlies the generation of swept-out areas?

Dallas Bache and others—in which you actually had a global scientific experiment. That is, under Gauss's direction, he designed, and Humboldt disseminated, methods for measuring variations in the Earth's magnetic field. And these variations in the Earth's magnetic effect, when they're measured in different places all over the planet, were very small, infinitesimal parts of the whole picture. Because, the Earth's magnetic effect is not made up of all these different parts. It's one effect. It's dependent on many different factors, but it's the overall effect of the magnetic relationships of the Earth and of the Earth's makeup; and the effect of the Earth's makeup and rotation and so forth, produces this magnetic effect of the Earth, which has a certain characteristic.

Now, the problem is, you can't see that whole characteristic as a whole. There's no way you can stand off from the Earth, and look at the Earth as if it were one big magnet, the way you would look at a small bar magnet or something, from the outside. You're *inside* the magnetic effect. And in fact, you can only measure, at different parts, very, very small, infinitesimal changes in this Earth's magnetic effect at various different points. So, the question is: How do you get a global picture of the entire Earth's magnetic effect, from these infinitesimal small measurements? Because the infinitesimal small measurements are not determined by something that's happening in the small; it's determined by the overall global effect.

You see the same thing when you're dealing with economics. People tend to try and understand the economy based on how it affects them personally, and that's the mistake. They have to realize that what they see in terms of their own per-

FIGURE 2



Fidelio

Kepler's constraint for motion on an elliptical orbit. The ratios of elapsed times are proportional to the ratios of swept-out areas. In equal time intervals, therefore, the areas of the curvilinear sectors swept out by the planet, will be equal—even though the curvilinear distances traversed on the orbit are constantly changing. In the region about perihelion (when the planet is nearest the Sun), the planet moves fastest, covering the greatest orbital distance, whereas at aphelion (when the planet is farthest from the Sun), it moves more slowly, covering the least distance. This constraint is known as Kepler's "area law," later referred to as his Second Law.

sonal economic situation, is the effect of a global economic problem. And if you're not willing to affect that global economic problem, and make a change in the whole global economic system, then you're not going to be able to change your own personal situation. Which is why, when we run into people in the organizing, who say, "I don't have time to pay attention to the world, I have to worry about my own problems," those people are doing exactly the wrong things to help their own problems. Their problems are only going to get worse, the more they focus on their own problems. If they *really* are serious about solving their own problems, they've got to try and solve the whole world's problems, otherwise, their own problems aren't going to be solved.

Schlanger: And that's a scientific proof.

Director: That's a scientific proof, yes.

Schlanger: Let's go to a question we have from the conference line, a second question, if she's still there, Judy.

Q: This is not, for the moment, directly on the question of Dirichlet's Principle, but on the Bolton nomination.

I'll just be very brief: Right now, it's not looking too good for him. The White House—the hang-up that [Democratic Senator Joseph] Biden and others used to stop the nomination this last week, was that the White House was refusing to release documents from the National Security Agency, of intercepts that Bolton was using—probably illegally—to spy on people like Colin Powell in the State Department. And

Biden and others are saying, "Release these documents, because this is part of the investigation." And the White House said, "No." So, the Democrats said, "Well, we're going to keep talking, until we see them."

And [Senate Majority Leader Bill] Frist tried to stop it. They were going to invoke cloture, but they couldn't get the votes. A number of Republicans either abstained, or didn't vote with the Republicans, so they couldn't get the votes to invoke cloture. And so, as it stands right now, there's a standoff. And the White House is saying, they *won't* release these documents, *probably* because they don't want it to get out what Bolton was really doing.

So, for the moment, it's postponed until June 7. So, I think this is an example of what you would call "a transformation in D.C.," the fact that the Democrats are using their capability to stand firm on these issues, and force changes from the Republican side. And among the people who have taken the point against Bolton, is Senator Voinovich from Ohio, who's clearly very upset by what he's seen from Bolton, what he's seen from Karl Rove threatening him for not going along. And don't forget, Voinovich is in a formerly industrialized state, called "Ohio," which is seeing continued losses of jobs, and now it's threatened by the further cutting back of Ford and General Motors.

Mechanics vs. a 'Science of Dynamics'

Schlanger: Let me go to Steve, back in Detroit: Steve, do you have any other questions for Bruce?

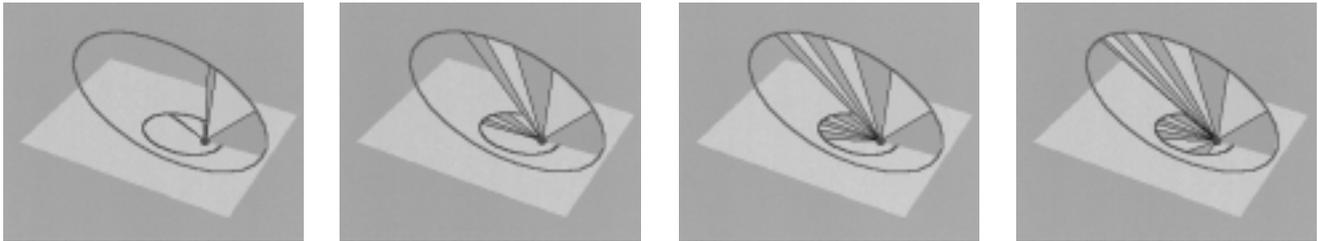
Jeffery: Yeah, in looking into this Dirichlet Principle, I can't help but get a sense of, it's defining—I guess, as Lyn puts it—a "field," which suggests immediately to my mind, a "power." And getting an insight into a power. And I was wondering what you think the necessity of this principle is, in terms of a change in power?

Director: Well, that's exactly what Riemann is dealing with. As I said, this goes back to Leibniz. And Leibniz defined, in the 1680s, what he called "a science of dynamics," as opposed to mechanics. And the science of dynamics is the investigation of powers.

And that's what you're dealing with in a physical process: You have a power. The power defines the characteristics of the system as a whole. And then, you're looking at what are the interactions in a system of multiple principles.

Again, to take it out of the abstract, look at it from the standpoint of an economy: The problem we have in the economy right now, is the *system as a whole*. It's not a problem with this particular factory, or that particular factory, or this industry or that industry. Take the problem of General Motors: The problem with General Motors is not a problem

FIGURE 3



LaRouche PAC website, "Animation and Economics."

An example of animations that can be found on the LaRouche PAC website: Two elliptical orbits, demonstrating Kepler's principle that an equal area is swept out in equal time.

unique to General Motors, it's not an isolated problem. It's a problem of the system as a whole: the accumulated effect of the free-trade, globalized system that is now coming to an end.

And this is what people don't understand. They think they can tinker with the system, and maybe reform it a little bit, and it might get a little better, and it might get a little bit less bad, and so on and so forth. But they don't want to face the fact, that every one of these individual problems, is *the problem of the system as a whole*. And so, you've got to figure out a way to change the system as a whole.

Now, how do you do that? You have to do that, by looking for those kinds of policy-initiatives, key projects, for example, the infrastructure development projects, the Eurasian Land-Bridge, or other types of development projects within the United States or the Americas, that would have the effect of shifting the direction of the economy as a whole, now that the financial system has collapsed, towards rebuilding the physical economy.

So, for example, take General Motors, you don't save General Motors by trying to come up with a better way to sell cars. This is the problem they've been having: The car has become an excuse for *financing* cars, and they're making money off the financing. So, you're not going to solve their problem by coming up with a new way of producing cars, or figuring out getting a way to buy cars.

But you can't let the industrial capacity, the machine-tool capacity, and the skilled labor, of General Motors go under, because of the effect that would have on the physical economy. So, you talk about taking this industry, and retooling it for production for those kinds of physical goods, use its capacity, for production of products which will have the effect of shifting the direction of the physical economy as a whole.

So, that's the way you've got to look at it. That's the idea of Dirichlet's Principle. You have to look at it from this Riemannian standpoint. People are used to looking at things from the standpoint of mechanics, of how do you manipulate one thing or another thing—this button pushes that button; this ball hits that ball. This is the Newtonian way of doing it, and also the way most people treat other! They treat other human beings mechanically. The point is, you've got to look at *dynamics*, and how do we create a *dynamic change* in the

economy? A shift from one set of dynamics, which right now is a dynamic of collapse, into a dynamic of growth?

'Punctuated Time'

Schlanger: All right, we're down to about two and a half-minutes, and I'm going to give Riana the last word. Riana, did you have another question for Bruce?

St. Classis I did. I'm sure he can't answer it in a minute. But, I was just thinking about, in terms of Lyn's latest paper—and there are the quotes from Vernadsky, that he has both at the beginning, and then he reiterates them at the end; and there's a point where Vernadsky talks about the "dynamic equilibrium" of the Biosphere. And he says, "if you were going to look at it like a mechanism, it would be a very peculiar mechanism," which was constantly changing.

And I was thinking about that, in terms of both biological time on the planet; because, you have this thing which has created a great kerfuffle with a number of evolutionists, this idea of, I guess it's "punctuated evolution": Where you have, it appears that at particular points, you have certain kinds of explosions in speciation, all across the Biosphere, that it's not just one individual. Sort of the way you were speaking about GM, or looking at any one aspect of the economy.

And I was thinking about how to—which is sort of what you were talking about now, as well—how to apply that idea to the economy as a whole?

Director: Well, I think what I said sort of points in that direction, right? But, that's exactly what the economy is. Think about an economy, as Lyn put it once—improvements in economic productivity is the way scientific discoveries which occur in an individual human mind, how those scientific discoveries change the way people interact with each other. Because the effect of a new idea, as it affects an economy, has its effect on the economy in the way it changes social relations among people, which in turn changes mankind's relationship as a whole to the Biosphere, to the abiotic and biotic parts of the Biosphere.

So, that's the way you have to look at it. Of course, the *form* of that process, is obviously a form that is characteristic of the universe as a whole, including the development of species within the Biosphere itself.