

Shattering Axioms, Fighting

The Sublime



Beethoven
Symphony No. 9
in d-minor
'Ode to Joy'

Joy, thou beauteous godly lightning,
Daughter of Elysium,
Fire drunken we are ent'ring,
Heavenly, thy holy home!

Thy enchantments bind together,
What did custom stern divide,
Every man becomes a brother,
Where thy gentle wings abide.

Be embrac'd, ye millions yonder!
Take this kiss throughout the world!
Brothers—o'er the stars unfurl'd
Must reside a loving father.

Fall before him, all ye millions?
Know'st thou the creator, world?
Seek above the stars unfurl'd,
Yonder dwells he in the heavens.



Tiananmen
Square



The Berlin Wall falls,
1989



A PowerPoint presentation on "The Sublime," composed by Jenny Kreingold, opened the Conference youth panel. Visual images were accompanied

for Our Future!

A Presentation on the Sublime by the LaRouche Youth Movement
Presidents' Day Conference, Feb. 16, 2003

'One small step
for man,
one giant leap
for mankind . . .'



Lift ev'ry voice and sing,
'Til earth and heaven ring,
Ring with the harmony
Of Liberty!



Oh, freedom!
Oh, freedom over me.
And before I'd be a slave,
I'd be buried in my grave,
And go home to my Lord,
And be free!



Montage re-creation by Alan Yue

by selections from Beethoven's Ninth Symphony and African-American spirituals. Only a portion of the graphic images are shown here.

“Shattering Axioms, Fighting for Our Future!” was presented by the LaRouche Youth Movement at the Schiller Institute/I.C.L.C. Presidents’ Day Conference on Feb. 16, 2003. The panel was moderated by Cody Jones, a leader of the LaRouche Youth Movement from Los Angeles.

Cody Jones: I want to welcome everyone to the final panel of the Schiller Institute meeting. This is the “youth panel,” as it’s called. And I want to welcome everyone who’s on the World Wide Web.

I want people to think big, really big. Think about the universe. Think about, in that universe, the solar system, and in that solar system, a planet, Earth. Think about the biosphere as it developed on that planet Earth. And think about the time interval over which this happened: The type of changes that took place in that solar system on that planet through the biosphere. And then, think about how, at a certain point, the universe, universal cognition, brought into being a reflection of itself—it’s a very loving thing to do—and that’s human beings.

Now, in relative terms, human beings have not actually been here that long (although, talk to some Baby Boomers, they all make you think they’ve been here much too long, they feel a little too old). Think about the type of changes that humanity has brought to this planet, the new levels of organization we have brought to the biosphere through the noosphere. And then, think about the fact that these changes have been the fruits of a relatively small handful of geniuses. And now, think about what it would be like, were we to lift humanity out of its infancy, to a state where the type of genius, as represented in the personality of Lyndon LaRouche, became the standard. Think about where this world would go, and think about the kind of freak-out you would get from all the environmentalists and anti-population people, under those conditions.

The Idea of Genius

This is what we are here to discuss, this idea of genius. How we, as a youth movement—but we can recruit everyone here to the youth movement, it doesn’t really matter how old you are— Think about Lyndon LaRouche: I was really struck by something during his “State of the Union” address. Here we are, on the brink of war, economic collapse, all the terrible things we know, and Lyn, in the middle, starts discussing Kepler, the harmonic orderings of the planets, has a diagram of a planet travelling around the sun. Counterpose that to



George Bush—here’s a guy who’s studying at the John Ashcroft school of fundamentalism, who himself probably still believes that the sun goes around the Earth. This is a problem.

So, we’ve got a challenge before us. It’s a challenge to become sublime leaders, to actually lift humanity up to— In effect, we have to mediate a Renaissance, a revolution that would lead into a global Renaissance. But, it

has to be a different kind of Renaissance: What we need is, something that is continuous. In effect, we want to create the condition, whereby society would take on the characteristic of the “hypothesis of the higher hypothesis.” In effect, Lyn’s method. That needs to become the characteristic of humanity as a whole, globally and universally.

On the Sublime

And so, we’re going to begin tonight, to start to take some steps in that direction, demonstrating how we’re doing that, how we intend on bringing that about. And I think the first step is that, we have to, as Plato said, we have to free ourselves from the shadow world, as it appears on the irregular surface of your professor’s rec-tum. You know, it’s a very stinky place to be. And whenever you come out of this situation, the flies that are buzzing around your head are very, very annoying. So, we need to change that.

What we’re going to be presenting tonight is a discussion on the sublime—the sublime as it appears in art, in culture—to get at the quality of mind, which is the emotional quality that’s required for this continuous Renaissance. And then, we’re going to be discussing some of the pedagogical work that we’ve been doing. Because, as Lyn said in his address to the Wiesbaden cadre school, the tendency has been, historically, to have youth movements, which have had too much enthusiasm, and not enough intellect. Well, our mission is to change that. And then, we’re going to present some of the actual, on-the-ground combat we’ve been conducting at the state legislatures, to give people a sense that it’s not just a classroom that we’re operating in, but we’re operating in the real world. And, so I guess without any further ado, we’ll bring up our first speaker here.

'Your heart can actually be opened'

Jennifer Chaine: Hello, my name's Jennifer Chaine, I've been organizing in the Baltimore office for two years. I was a former art major turned truck driver, trying to find myself, and ran into the movement in a truck stop.

I've been grappling with the question of art all my life. My father was an artist. Growing up in an "art house," you grapple with this.

I guess the big question is, what *is* art. A lot of us have been grappling with that question, and grappling with the challenge that Lyn and Helga keep laying out to us, that we have to master Classical art, in order to counteract the collapsing culture which we live in today—if we're serious about creating a new Renaissance that will not fail.

On most campuses today, Classical art and the Classical method are extinct. It's not even an endangered species, it's just not there. Many of us have actually experienced this in our art courses. You just kind of skip over the Classical period. We were taught that the Renaissance is just a period in history, and that we're beyond that; that art is "anything goes." You have your slides, you learn them, pass them for the test, and it's just, "Well, what's that boring stuff, anyway? Let's get to expressing myself." If you're chaotic, you're even more of a genius. That's the way art is taught today.

But, with the different challenges that we're faced with, as LaRouche has said many times, our generation has to ask the question Hamlet did, "To be, or not to be." In order to internalize that challenge, and if we're serious about making LaRouche President and creating a new Renaissance that will not fail, we have to turn to art.

A Shattered Generation

The question we're faced with is, how to develop as leaders, overcoming the fear that tends to hold us back when we look at the world around us. And, I've been thinking, it's sort of like Humpty-Dumpty. It's been referenced several times, that we're a shattered generation. We had Baby Boomer parents. We grew up on MTV, sex, violence—very desensitized. How do you overcome that shatteredness, the brokenness that you feel? And, as to a sense of passion—we've been taught that the most passion we can experience is, like, maybe rubbing ourselves with a collection of rainbow paints and Crisco and whatever else, and then rolling around on a piece of canvas. That's art!



These kinds of infantile feelings are not going to develop our generation into leaders. We need true passion, to be leading armies as Joan of Arc did. And for that change to be lasting, we have to smash the popular opinions about Classical art in this culture today.

Thankfully, we have tools, friends at our disposal, to assist us in discovering what art really is, and how you can put the pieces back together again. Friedrich

Schiller, for example, who is actually cheaper and far better than any therapist that we can go see. Schiller says that art will actually open up the hearts of a broken society, a broken people, and lead to a completeness of character. This is the kind of education we have to master right now.

I'd like to take a look at Rembrandt, who I think represents this Classical method of art, to where your heart can actually be opened, to where you can understand Classical art, and through that, discover beauty and passion, such as what Rembrandt does. But not passion that people think, "Valentine's Day" type of passion.

Rembrandt's 'Lucretia'

We can look at the first Rembrandt slide [SEE Figure 1 and inside back cover, this issue].

This is "Lucretia," Rembrandt's painting. And, obviously, you see, something's happening here. She's about to stab herself. And you're wondering, what in the world is she going to do? I'd like to tell you the story of Lucretia, who is referenced in the *History of Rome* written by Livy.

Lucretia was married to a soldier in Roman times, and the soldiers were gathered around gossiping, or, you know, just having fun, challenging each other, saying, "Whose wife is more virtuous?" They say, "My wife's more virtuous!" "No, mine is!" So they decide to set up a little game to test who is actually right. They sneak up on their wives—it's late at night, and most of the husbands may just find that their wives are partying it up, hanging out, drinking, at the dances. But Lucretia, she's the only wife who proves to be virtuous. She's at home with her maids, spinning her yarn, things like that.

Sextus Tarquinius, a soldier who happens to be the son of Tarquinius, the king of Rome at that time, is very jealous of this fact. When he is again over at the house—they're having a gathering—he gets the idea that he wants to take away that beauty and that chastity, and to dishonor his fellow soldier, Lucretia's husband. So, after

the party, when Lucretia is in her bed, Sextus Tarquinius goes in and starts a brawl with her. He tries to seduce her, but that doesn't work, because she's virtuous and loyal to her husband. So, he says, "Unless you allow me to do what I want to do, I'll kill a slave, slay you with him beside you, and make it look like you cheated on your husband." So, a battle takes place between them, and he winds up violently raping her.

So, all night she's been grappling with what just happened; she's been stripped of her pride and her honor, and the shame is overwhelming her. This is what Rembrandt decides to take up in this painting, which is quite interesting. All of you should go to the National Gallery in Washington, D.C. and sit in front of this painting, you'll get a better sense of what I'm talking about, and even look up other paintings of Lucretia. Because the way Rembrandt handles this— You don't see Lucretia in the nude, she's not in the act of being raped, or just posing with a sword, which many other paintings do. There's something much more dramatic going on here.

It's the next morning. Lucretia is distraught. She's called her father, and husband, and friends to come over, and they're sitting on the bed, and she tells the story to her husband and her father. Now, how do you convey something like that? You know, a rape, what happened to Lucretia. I've seen many representations, where they just have her posing with the sword, or maybe have the act of the rape. Rembrandt does it differently. If you look at the painting—I'm not sure how well you can see it—since she's not in the act of being raped, or nude, how does Rembrandt depict what just happened? Well, there are a few things you can look at: on her bodice there are still strings hanging down, where it signifies that she was raped, you can get that sense of it. There's a certain tension, a certain agony, that she's been in all night; if you go real close up, you can see that her eyes are very red, they're tear-stained. There's a certain "caught in a mid-motion" tension there. And then, also, the way that Rembrandt handles the paint is similar to, I would think, like armor, because the paint is very thick and heavy—he basically paints like with a palette knife. So, you have a certain paradox, where she does have a certain armor on, but at the same time, she is exposed, a defenseless victim of this tragedy.

Because, if you look at the painting, it's obvious that she's innocent. How is Rembrandt handling the light? The way the light is directly placed on her heart, on her chest, the way the light just comes in through the blackness of the background, is a testament of her purity, of her virtue. The way the light comes in and hits the chest on the necklace, the pearl necklace, and the hand that's open, that is caught in mid-motion.



FIGURE 1. Rembrandt van Rijn, "Lucretia," 1664.

The Open Hand

This is the point at which she tells the story. She is about to kill herself. Her father and her husband try to stop her. And she says: "It is for you to determine what is due him. For my own part, although I acquit myself of the sin, I do not absolve myself from punishment, nor in time to come, shall ever unchaste woman live through the example of Lucretia." So, Rembrandt, in this moment of tension, right before she stabs herself, shows us the hand that's open, a testament of her innocence, the light, the way it's held. And you can see, if you look closely, the torment and tragedy she had to go through during the night before. She's been crying all night, grappling with the question, what should she do? Because, she's been violated in such a way, that she feels she has to resolve it by testifying to her innocence, that she did not commit an adulterous deed.

One interesting thing I was looking at, was the relationship of the hands. Shakespeare wrote a poem about the rape of Lucretia, and, if you look at her hands for a second, I'm going to read a short excerpt from this poem. In it, Lucretia says,

"Poor hand, why quiverest thou at this decree!
Honor thyself to rid me of this shame;
For if I die, my honor lives in thee,



The Minneapolis Institute of Art, William Hood Dunwoody Fund

FIGURE 2. *Rembrandt van Rijn, "Lucretia," 1666.*

But if I live, thou liv'st in my defame;
Since thou could'st not defend thy loyal dame,
And wast afeard to scratch her wicked foe,
Kill both thyself and her for yielding so."

I thought this was interesting because, if you look at the hands, the one hand that's clasp[ing] the knife, you know, that she's saying, this was the hand that couldn't protect her, therefore that's the hand that has to atone for that sin. But the other hand is sweeping up; it's a testament of her innocence, it's open, it's in the light; but it's also, in a sense, to calm the people who are in the audience, her father, her husband and other friends, who are sitting out here, looking at what happened. I thought that was interesting. There are many things you can look at in this painting to figure out what's going on.

The question is, Who's the audience? Because, we know that in the story, it's the father, the husband, people like that. But the way Rembrandt composes the painting, in his composition, you, the viewer, are forced to become the audience as well. Which, you know, with other paintings, you're not really forced to think about them, you can kind of look at them, and then walk away. But you're not allowed to be passive in this painting. Think of it! Rembrandt, who's dead, takes a non-living substance, paint and canvas, and forces you—you know, he's calling out from the 1600's, "Hey, I'm human. Hey, I'm grappling with this idea. Grapple with it with me as well." It's

a certain relationship between the artist, Lucretia, and yourselves, and us today, which you can't do in anything besides Classical art. To where you can re-experience the mind of Lucretia—what she went through the night before—while you are also experiencing as the unseen audience; you're experiencing being in that room with her, being the father, being the husband, grappling with what just happened, wanting to stop her. So, you're very involved in the painting.

This kind of tension, this motion, right before she kills herself, is like a certain holding of your breath. Rembrandt did a second Lucretia, which you can put up there [SEE Figure 2 and inside back cover, this issue]. As you can see, that's the "exhale," that's the resolve. You know, the tension is settled, she's more serene, more peaceful. No longer is she tormented, because she has absolved herself of what she considered to be a sin. It's kind of an atonement for what just happened. And again, you can see this, just through the different representations of the light, how it's hitting her chest or heart, her virtue, and also the blood of the rape right before that. I encourage you to investigate more on your own, to figure out what else is going on in this painting, which I haven't said.

Republican Virtue

This incident actually led to the founding of the Roman Republic.

When Lucretia killed herself, seated in the audience that you were looking at before, was Junius Brutus, and he was very disgusted by what just happened. If you remember, the guy who raped her, Sextus Tarquinius, was the son of the king of Rome. And that inspired Brutus to carry her dead body through the streets of Rome. He said, "Something tragic has happened. Soldiers, rise up, get your swords! Don't just weep and pity, end this act," by overthrowing the tyranny and the kind of disgusting monarchy that was ruling at the time Lucretia lived. So, by the act of what happened to Lucretia, through her suicide, this led to dumping the kings of Rome and establishing the Roman Republic. And it led Shakespeare to write his poem; it led St. Augustine, in his *City of God*, to deal with the question of Lucretia, which I encourage you to read as well.

I want to read one more thing from Shakespeare's poem. This is Lucretia speaking.

"My honor I'll bequeath unto the knife
That wounds my body so dishonored.
'Tis honor to deprive dishonor'd life;
The one will live, the other being dead:
So of shame's ashes shall my fame be bred;

For in my death I murder shameful scorn:
My shame so dead, mine honor is new-born.”

I want to say something in closing. When you look at art, if you walk through discoveries such as Rembrandt’s, it’s the *idea* that has to carry a Classical piece through. And, by re-discovering this idea, you can educate your

passions, educate your emotions, to be able to fight, to be able to do the things that we’re doing today. A lot of people don’t think that they can understand Classical art, but, as with Rembrandt’s “Lucretia,” you can see that you can walk through the discoveries, to understand it, and be able to use it as a political weapon today.

That’s all I want to say tonight. Thank you.

‘Break free of the limitations expected of you’

Alex Getachew: Hello. I wanted to look at the poet Percy Shelley’s “In Defence of Poetry,” and there are some aspects of it which I think are important to thinking about the situation which we’re in currently. It allows us to explore, when looking at history and where we are today, some questions I think are more than relevant. The question which I think continues to ring in a more and more intense way in my mind is, why does Lyndon LaRouche cite Percy Shelley’s “In Defence of Poetry,” particularly the matter of why a revolutionary period in history, creates a circumstance in which people experience a development of their ability to “receive and impart profound and impassioned ideas, which pertain to humanity and nature”?

This is a question which I grappled with for some time, and in the course of struggling with it, I had an image dawn on me. I remembered a story, which Debra Freeman used to tell a lot, about a little boy who competed in a national poetry reciting competition that our movement sponsored. Now, this was a seven-year-old who, like the other young children who participated in this competition, had to select a poem to recite. And for some strange reason, he decided to choose a speech by Martin Luther King. And, this was something, I mean, you could imagine the responses of the panel of judges. Their response was, “Uh-uh, this is not a poem. Go back to the drawing board, find a poem to recite.”

Just think about it. When somebody says “poem,” the first thing that pops into my mind is not a speech by Martin Luther King. And then, another strange thing occurred, which is, that this young man refused to submit, and decided that he was going to convince the judges that this *was* a poem. And he was very persistent and tenacious in his argument. But, you know, the judges’ position was, that this wasn’t a poem.

Well, the end result was, that he convinced them that this was a poem. And, given the tenacity of his argument,



EIRNS videograph

you shouldn’t be surprised that he won the national competition. This young man had, in my view, a very interesting quality. He had a state of mind which, essentially, eagerly broke free from the limitations which were expected of him.

I think that one of the things that helped me, in thinking about this story, was the fact that there’s something in his mind, that’s actually congruent with Percy Shelley’s conception of what a poet is. That, first of all, Percy Shelley’s conception of a poet is, that a poet is someone who intervenes with new ideas, when the old way of thinking fails, breaks down. I mean, this is the quality that Shelley associates with how people in society learn to develop their own ability to overcome these limits, these limitations of the old ways.

Now, the question is, how does a poem do that? That’s a long discussion, and we’re not going to examine it in detail. But, a serious poem, according to Shelley, is one which addresses the divine potentialities in a human mind. The poet sheds light on the never-before-seen relationships between things pertaining to society and nature. This is done, by bringing new ideas, which could never be conveyed by any descriptive mode of communication, in prose writing or speech.

Shelley liked to call poets the “unacknowledged legislators of humanity,” because they develop the quality, the creative potential in people in society, that makes them more fit to govern themselves, and makes them unfit for the oppressive chains of cultural limitations.

Ideas of the American Revolution

This is an important quality to keep in mind. It’s also important to keep in mind the time period in which Shelley lived, and wrote. These were the decades that immediately followed the American and French Revolutions, and Shelley identified himself explicitly as an ally of the American Revolution. I mean, he recognized that, for him, the American Revolution was a recognition of

this universal quality in human beings, that the principle of the inalienable rights, came from this quality that was recognized by the poet to be existent in every human being. It was actually his commitment to this understanding, that caused Shelley to hate the outcome of the French Revolution. When the senseless bloodbaths and chaos of the French Revolution gave birth to tyranny, Shelley knew precisely why. He understood that the French Revolution actually rejected this quality that made human beings human.

Shelley was involved in a very deep struggle to bring the principles and ideas of the American Revolution into Europe. Many poets and artists during his time frame actually had the same view. To name some: Keats, Leigh Hunt, Schiller was around the same time frame, Beethoven. Shelley, along with these individuals, had a very adamant hatred for the oligarchy. He took offense at the degradation imposed on the majority of the human race by certain “folk,” who believed that they were born to rule over more than 95 percent of the human race, by virtue of some in-bred, elite magic. I found something which I thought might be appropriate to read to people, which characterizes how he thought. It characterizes his hatred for what this oligarchical state of mind represented.

This was something he wrote after the death of Napoleon, titled “The Feelings of a Republican on the Fall of Bonaparte,” and you can tell me whether or not there’s any ambiguity in his thinking on this subject.

I hated thee, fallen tyrant! I did groan
To think that a most unambitious slave
Like thou, shouldst dance and revel on the grave
Of Liberty. Thou mightst have built thy throne
Where it had stood even now: thou didst prefer
A frail and bloody pomp, which Time has swept
In fragments toward Oblivion. Massacre,
For this I prayed, would on thy sleep have crept,
Treason and Slavery, Rapine, Fear, and Lust,
And stifle thee, their minister. I know
Too late, since thou and France are in the dust,
That virtue owns a more eternal foe
Than Force or Fraud: old Custom, legal Crime,
And bloody Faith the foulest birth of Time.

This is something which should cause us to ask, what made Shelley so hostile to the oligarchy, what made him such a big friend of mankind? One thing that you could look at, is that he was inspired by Plato—who, by the way, whose works he translated, I believe it’s the dialogue on love [*The Symposium*]. Shakespeare was another; Dante, someone he looked to; and Aeschylus. In fact, Shelley’s worldview concerning the way an individual

fights and succeeds in creating a future worthy of humanity, is best embodied in the figure of Prometheus, which is associated with the play by Aeschylus. Shelley, in fact, depicts the same Prometheus in his own play *Prometheus Unbound*.

Prometheus

For some of you who may not be familiar with Prometheus, Prometheus was the Greek god who was punished by Zeus for his commitment to mankind. He is associated with the image of having stolen fire from the gods, and given it to man. This does not mean he was an arsonist spreading fires. Shelley’s conception was consistent with what Prometheus did; which was, he taught mankind. Prometheus was the first to teach mankind astronomy, geometry, and poetry, among other things. And for this, he was sentenced to being clamped to a rock and having his liver eaten by Zeus’s eagle, which kept flying down, eating his liver, going back. He would wait until the liver grew back, and would come back, and eat it again. This went on for some time, for 10,000 years. It ended up—you should read it yourself—but in Shelley’s drama, this was a model for him, of what a successful political revolution would represent.

Now, I want people to hear a poem that was written about Shelley, by somebody who lived in the last century, by the name of Paul Laurence Dunbar. I don’t necessarily need to say anything more about it, but one thing I will say is, that the person who will be reciting it, is a person who has for many years prior to his recent passing away, inspired many of us here through his recitations and singing, which you will hear very shortly, as William Warfield recites a poem by Paul Laurence Dunbar, about Shelley.

[Audiotape of William Warfield recitation.]

Prometheus

Prometheus stole from Heaven the sacred fire
And swept to Earth with it o’er land and sea.
He lit the vestal flames of poesy,
Content, for this, to brave celestial ire.

Wroth were the gods, who with eternal hate
Pursued the fearless one who ravished Heaven
That earth might hold in fee the perfect leaven
To lift men’s souls above their low estate.

But judge you now when poets wield the pen,
Think you not well the wrong has been repaired?
’Twas all in vain that ill Prometheus fared:
The fire has been returned to Heaven again!

We have no singers like the ones whose note
Gave challenge to the noblest warbler’s song.

We have no voice so mellow, sweet, and strong
As that which broke from Shelley's golden throat.

The measure of our songs is our desires:
We tinkle where old poets used to storm.
We lack their substance, tho' we keep their form:
We strum our banjo-strings and call them lyres.

Given the fact that Shelly inspired such a poem, we shouldn't be surprised that he also inspired many people in the Twentieth century who we should be familiar with, Gandhi being one. According to many reports, he recited Shelley's "Masque of Anarchy" during meetings

that he convened to mobilize against the British Empire. Dr. King, and another person you should know, who is responsible for inspiring the youth movement that is gathered here, Lyndon LaRouche.

I just want to say in closing, that there's one thing that people should be clear about, and that is that we happen to be in a period in which we're faced with the reality, with the type of revolutionary period that Shelley refers to, and attempts to educate us on. This not only means that you need the type of Promethean, poetic personality described by him, but also, there's a certain step that we have to take in rising to the occasion, in like manner.

'Don't suck up to shadows'

Jason Ross: This is for the West Coast delegation here. We're going to be going over the mental fight for the sublime, or, as we were considering calling it, "Don't suck up to shadows."

Because, in organizing, there's a phenomenon we run into very often. Most of people's lives consist of sucking up to shadows, which they either mistake to be, or fantasize to be reality. And, we have to put an end to this practice, if we're going to have a principled civilization that's going to survive this crisis. Now, this sucking can take many forms, so I'll give you a few examples, so you can recognize the epidemic when you run into it.

- "Well, I know Rev. Moon is a bad guy, but I need the money to run my programs."

- "I've got to be popular with the neighbors, otherwise they might gossip about me."

- "I've been assured that, as soon as I receive my degree, then I shall be allowed to think."

- "Don't you see, you gotta get inside the system, if you wanna change anything."

- "What's this third-party candidacy, come on, run with one of the parties."

- "Of course the New Economy will work. If it didn't, everyone would have been wrong, and my epistemology of truth by popular opinion won't work."

- "Saddam Hussein has Weapons of Mass Destruction and links to Al-Qaeda. I heard so myself from Colin Powell, and he's a good man. Besides all the newspapers say the war is inevitable anyway."

- "Things are never gonna change. The rich just keep gettin' richer."

- "What you are saying is at variance with what I was



taught by my highly esteemed professor. Therefore, you must be wrong."

- "I'll go to lots of parties. That way I'll be popular and have lots of friends, and that's happiness, right?"

And,

- "Let me propitiate the backwardness of this person I'm trying to change. That way, he will like me for agreeing with what he currently believes. Then, maybe I can change him."

So, as Plato brings us to know in his *Gorgias* dialogue, to try to make a place for yourself through rhetoric, through trying to get along in a shadowy world, you're going to distance yourself from reality, and also sanity and happiness, and—if you believed in the recent shadow, or the continuing shadow of the New Economy—your money, too.

So, making assumptions about how the universe operates, based on trends and ideas of today, is like—Cody must have re-translated from the original Greek, because I was under the impression that Plato had written about these shadows cast on the irregular wall of a cave, but, I think Cody must have learned Greek, and re-translated— So, if we're going to begin a rigorous study of reality, we've got to beware of the problems in our method of determining the truth.

I'm going to read from Riemann's Habilitation Dissertation, you can put the slide up. So, this is from "On the Hypotheses Which Lie at the Foundations of Geometry":

Plan of the Investigation. It is well known that geometry presupposed not only the concept of space, but also the first fundamental notions for constructions of space as given in advance. It gives only nominal definitions for them, while the essential means of determining them appear in the form of axioms. The relation of these presuppositions is left

in the dark; one sees neither whether, and in how far, their connection is necessary, nor *a priori* whether it is possible.

From Euclid to Legendre, to name the most renowned of modern writers on geometry, this darkness has been lifted neither by the mathematicians, nor by the philosophers who have labored upon it. The reason for this lay perhaps in the fact, that the general concept of multiply extended magnitudes, in which spatial magnitudes are comprehended, has not been elaborated at all. Accordingly, I proposed to myself at first, the problem of constructing the concept of a multiply extended magnitude, out of general notions of quantity. From this it will result, that a multiply extended magnitude is susceptible of various metric relations, and that space accordingly, constitutes only a particular case of a triply extended magnitude. A necessary sequel of this is that the propositions of geometry are not derivable from general concepts of quantity, but that those properties by which space is distinguished from other conceivable triply extended magnitudes, can be gathered only from experience. There arises from this the problem of searching out the simplest facts by which the metric relations of space can be determined, a problem which in the nature of things, is not quite definite. For several systems of simple facts can be stated, which would suffice for determining the metric relations of space. The most important for present purposes is that laid down for foundations by Euclid. These facts are, like all facts, not necessary, but of a merely empirical certainty; they are hypotheses; one may therefore inquire into their probability, which is truly very great within the bounds of observation, and thereafter decide concerning the admissibility of protracting them outside the limits of observation, not only towards the immeasurably large, but also towards the immeasurably small.

I'm going to read one sentence again:

The properties by which space is distinguished from other conceivable triply extended magnitudes, can be gathered only from experience.



FIGURE 3.

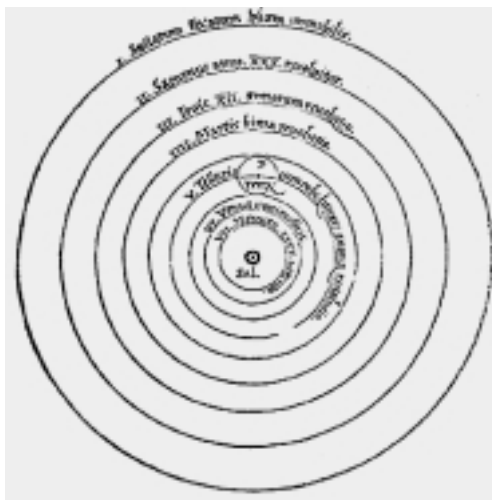


FIGURE 4.

So, we can't take anything for granted. Nor can we determine truth by consensus. You have got to investigate. "Popular opinion," "common sense" (which doesn't have a lot of sense, although it's pretty common), "experiences"—these things aren't going to cut it. So, how *do* we get at the truth? Not, as Lyn was going through, not from collecting facts with our current methods of thought, with a view of finding trends in them. Information is not knowledge. The way you determine the difference between your mental geometry, and the geometry of the universe, is by pushing it, by cracking it, kind of like, if you've got an egg, you have to push it against reality, crack open the shell, to find the difference between your current geometry of how you're thinking the universe is, and how it really works. And you do this, by pushing the boundaries of what you're able to investigate, along the dimensions of what you already know, along what you're already able to think along.

This is different from the "artificial intelligence" of today's scientific inquiry, or most scientific inquiry; which is, that any true discovery, reaches conclusions that are outside the domain of the observations.

Now, compare this to— You know, you can receive a Ph.D. for examining a tiny shadow of the cave, finding a small shadow, finding the trends in how it operates; but, you're going to be even more oblivious to the fact that you're in a cave. Maybe there's a reason that, as Lyn says, that these are called "terminal degrees."

Kepler vs. Ptolemy and Copernicus

To illustrate the difference between shadows and reality, you're going to use Kepler, as compared to the failures of Ptolemy and Copernicus, so let's put up Ptolemy's picture here [SEE Figure 3]. Earth is at the center.

And, this makes sense, right? I mean, don't you every day, depending upon when you get up, see the sun rise? See it go overhead? See it set? You get up the next day, what do you see? Same thing happens. The sun must go around the Earth, right? Except, we know, that's not true, we know about the discovery of Copernicus [SEE Figure 4].

Tell you what, we're too sophisticated for that.

Everybody knows that Copernicus made this brilliant breakthrough, in which he said that the sun is at the center of the solar system, and that the planets go around that. And, we all know that's the case. We learned that in school, we saw it in the textbook, right? We had the flashlight and the tennis ball and the globe, and moved them around. We saw shadows on the moon. So, obviously, we *learned* that, right?

Well, no.

Do you know that the Earth goes around the sun? If you *did*, you'd probably have to have a physical, you would have to have a physical principle for why it takes place. Copernicus didn't know that the Earth went around the sun. He didn't know, he had no physical principle that would generate this action. He didn't say, there are metal hoops that the planets are on. There's no reason that they would act this way. So, being taught, taught *learning*— Learning is a great barrier to knowledge, it's another kind of shadow that you wind up with, because you didn't make the discovery.

Let's put up Kepler [SEE Figure 5].

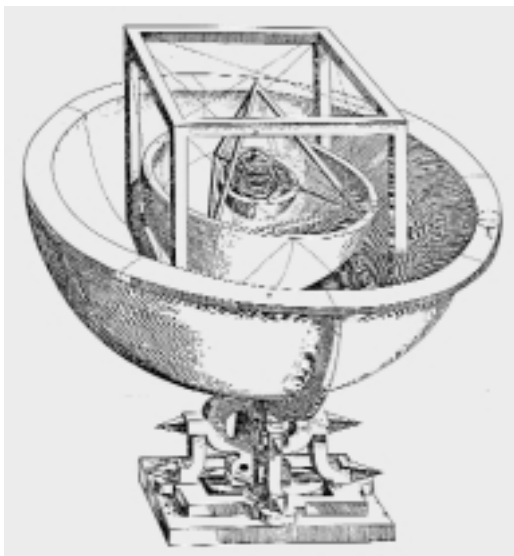


FIGURE 5.

It wasn't until Kepler, that the solar system was understood from the standpoint of principle. Kepler's investigation, he didn't look at, in terms of "what moves around what." Does the Earth go around the sun? Does the sun go around the Earth? He asked a different question. He said, "Why are they moving? What is causing these motions that I'm seeing?"

Now the fact, asking that question, immediately demands something outside of observations, in describing a trend in your observations. You've got to have a motive principle. This beautiful conception, of an orga-

nizing force outside of what we see, is a discovery. You don't see it. You don't see gravity, in your eyes, you don't, somehow, move trends, so that, if you're calculating trends of dots observed in the sky, you're not going to write out the word "gravity" if you arrange the letters properly, or something like that. You only see it in your mind.

So, what is reality? Is it the planets that you see in the sky? They keep moving, the orbits keep shifting. Or, is it the principle that exists everywhere, that is generating the observations that you're making?

Acting on Principle

Now, it comes from viewing the universe as principles, that LaRouche is able to forecast outside of common thought, and to hit these flanks that we've been hitting—McCain-Lieberman, the Moonies, Marc Rich, Libby. Compare this, the results that Lyn has, with— What did we find among the leading Democrats considering running for President? They all got fooled by the British report on Iraq. All got fooled by it.

We're not going to push on shadows, to change reality. You've got to act on the principles. People got all scared of the gigantic shadow of Enron. "Oooh, it's a big shadow. The boogie man is making it, we can't possibly stop it." "You can't put the toothpaste back in the tube, I've got no idea how."

No, you act on principle, if you're going to change things. So, this attempted, this Clash of Civilizations war that's trying to be started, this is the outgrowth of a view of man. It's because of long-standing ambitions and an idea of how the world should be organized. If you're going to win the fight for our civilization's continued existence and a new Renaissance, we're going to require a shattering change of method, not a gaggle of people attempting to banish a shadow by casting spells at it. Please put up the next slide [SEE Figure 6].

That is a shadow, that is not acting on principle, that is not going to make a Renaissance. So, in our mission to create among the population an inoculation against believing in shadows and painting things on your stomach, we're going to find a fun paradox in communicating discoveries. Which is, that you can't describe



FIGURE 6.

ERINS

them. You must re-enact them. Whenever you discover anything, you're lawfully finding something outside the current theorem-lattice used to investigate the world.

How are you going to somehow project a fundamental change in thinking, that shifts your entire theorem-lattice—how are you going to project that down into your current method of thinking, such that it keeps its essence as a change?

You can't! It's not there. To describe a discovery would be like trying to discover a principle inside of observa-

tions. It's not there, it's outside. A discovery is a discovery. If you want to learn it, you're going to have to discover it. Otherwise, you're learning something else.

So, tonight, we're going to have an aerial view of working through paradoxes with pedagogies. We're going to look at paradoxes we find even when we're talking about ideas, because you're not safe then either. The method of communicating ideas has its own paradoxes that we can play with, and tonight we're going to get a taste of some through music.

So, Anna?

'Real scientists know where the important cracks are'

Anna Shavin: So, what about music? Is there a reality principle? Is it just some ethereal, abstract idea? Or, is there an actual, truthful method? Or, is it arbitrary?

Now, how would we know this, how can we discover this? What kind of crack do we have to make, to look through?

Our generation really knows only the shadows of music. So, this is what we're going to be investigating, because it comes up a lot in our organizing.

But, at first, in order to investigate this, you have to ask an important question. What is the origin of music? Was it Neanderthal man? Was it Carl Cro-Magnon, running around, banging his head on rocks? You know, finding a tone here, and a tone here, kind of like the Flintstones?

Did it somehow magically evolve?

Did it fall from the sky one time, and hit, just bonk somebody in the head, and say, "Hi, I'm music!"

Actually, civilizations for thousands of years have looked at this idea, and it's not an abstract idea, they've looked at it as one of political importance, as to the conception, the intention, of humans.

The Human Voice vs. the Piano

So, we're going to take up a problem that the Pythagoreans—which was a school in ancient Greece—took up, and they spent some time with this. The question is, what happens when you compare the human voice and an instrument, such as a piano, or the monochord?



Anna Shavin (left), Jenny Kreingold (right).

To look at this, we're actually going to go through a physical demonstration. Can I have the first slide? [SEE Figure 7] Jenny, you might want to come up here.

What you've got here are three measures, and each measure is in a relationship of a third, to the last one before it. The first measure starts on a C, the second measure is an E—C-D-E—and the third measure starts on a G-sharp, you know, E-F-G-sharp. It's all over the space of an octave. It goes from a low C, to the high C at the very top.

Now, we're going to see what happens when the human voice sings this, as compared to the piano. So, Jason, can you play the low C. Jenny's going to sing this.

[Jenny Kreingold performs a singing demonstration of the octave as rising thirds.]

So, what happened there? [Laughter]

Jenny: Jenny sang out of tune!

Anna: Was that *just* Jenny singing out of tune? Actu-



FIGURE 7.

ally, go back, because we're going to do it again. We're going to listen again, and next time, Jason, while she's singing the C, can you play the C on the piano? Let her hit it, and then you hit it.

[Jenny performs a second singing demonstration.]

Anna: Okay, thanks.

So, the last notes, let's just look at the C, the second to last note there [Figure 7]. It should have been the same as what she sang, right, they're both C's. But, they weren't. Now, it might be a little bit difficult to hear the difference, because it's slight, but it *is* there.

Why does this happen? It seems, that the voice does not map neatly onto the instrument; that the piano doesn't adequately or completely describe the principles of the human voice.

This is what is known as the Pythagorean "comma." The comma is the discrepancy that is created, between the notes that were sung, and the notes that were played on the piano. Why the comma?

Well, if you can imagine in your own mind, two circles, one a complete cycle, that would represent the C to the C, the complete cycle of an octave. The other one, not a complete, an incomplete cycle, so you have a kind of a gap, a space, which would represent what Jenny sang, going through the octave by perfect thirds. That gap, is what we just created musically.

Tempering the Intervals

What's going on here? The voice sings this mini-composition, sings the low C, and then the high C that's plucked by the piano. But, in the human voice, it actually *tempers* itself, it tempers the intervals, it changes the intervals, slightly, but it's a non-linear change. And even though it's slight, you can get a sense that the method that's necessary to generate the two, the instrument and the human voice, comes from two different domains. One, the voice, the other, the instrument. Can I have the next slide [SEE Figure 8].

Now, we're looking at this the same way that Kepler did. The same way that Kepler actually hypothesized the orbit of Mars. Does that look like a circle, to most people? Well, it's an ellipse. It's an ellipse by about

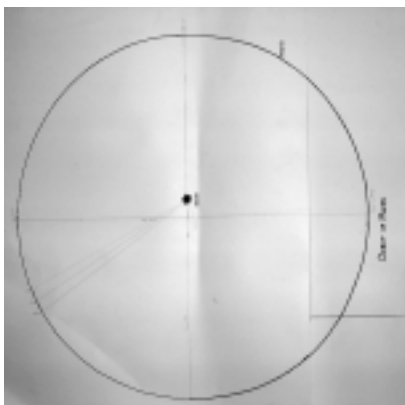


FIGURE 8.

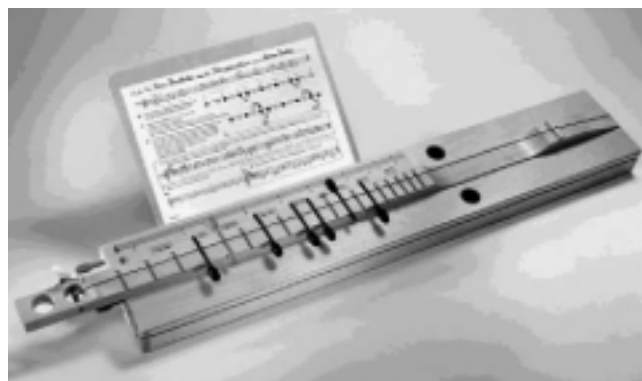


FIGURE 9.

eight minutes of arc. So, you get these slight discrepancies, and the real scientist actually knows where the important problems, the important cracks are, where they should go investigate.

So, you know, this is kind of fun. You got the same thing in music. So, all right. Now we're going to look at this from a new standpoint. Next slide [SEE Figure 9].

This is the monochord. Actually, we have a monochord right here. It's just a hollow wooden box, and it has a string on the top, if you can see, one string, and it's taut.

Now, the monochord is not based on the human voice. Instead, all of the intervals of the scale are created through basically strict divisions of the string on top. For example, if you plucked one-half the string, allowing that to vibrate, and keeping the other half still, you create what's known as an "octave," the interval of an octave. That's also what's producing frequencies, you're creating frequencies when you pluck. Next slide [SEE Figure 10].

The first example is the case of the octave. Likewise, you can generate a "fifth," the second one, by allowing two-thirds of the string, dividing the string up into thirds, plucking two-thirds of the string, and allowing the other third to remain still. And you get the interval of a fifth, which would be C-D-E-F-G, five. The "third"—we're going to look at one more, which is the "third"—which is the fourth one down, where you divide a string up into five parts, and you allow four-fifths of the string to vibrate, and that creates the interval of a third. Which, if you guys remember, is exactly what Jenny was singing. She was singing thirds, perfect thirds.

This right here is a pretty extreme case of a non-living process generating notes, generating tones. So, how do you guys think this is going to describe the human voice? Next slide [SEE Figure 11].

This is a model of a keyboard. If you look at both of them, the same distance, the same number of keys, the same space, is covered by both, from lowest C on the

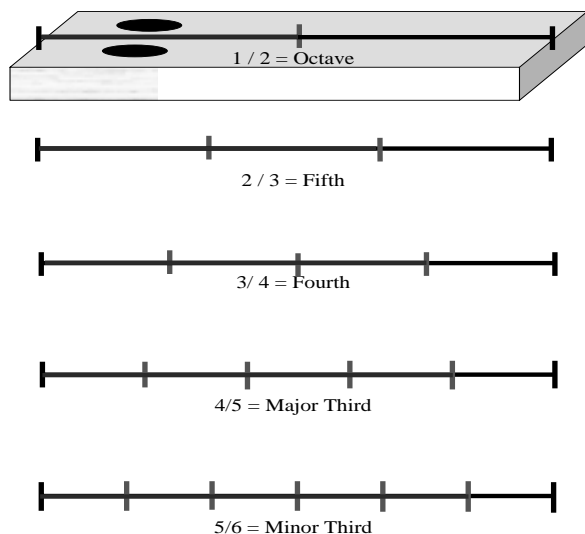


FIGURE 10. *Monochord divisions.*

piano, to the highest C. Except, this is going to be, we're going to create the notes to the divisions of the monochord string, and what you've got between the first and the second one, is, they cover the same amount of space, but the action which generates, the interval which generates the new note, is different. The first one, is generated by fifths, it's called a "circle of fifths," and, what you do, is, you keep dividing the string by two-thirds. So, you get your C at a frequency of 32, then you go up a fifth, you divide the string into two-thirds and you can go up a fifth, and you get a G at a frequency of 48, then D, A, E, B, etc., all the way up to the C.

Numbers vs. Physical Principle

Now, the way that we know the frequency, is that there is a proportional relationship between the frequency and the amount of string that's vibrating. As the amount of string gets less, the frequency gets higher, so it's an inverse relationship.

In this case, in the case of a fifth, since you're plucking $2/3$ of the string, of the whole, the frequency goes up—it's called the "intervallic ratio"—it goes up by $3/2$, the inverse. So you see, you

have C, you start at 32, you act on that 32, by three-halves, and you get 48. Then you multiply it by three-halves, and you get 72, 108, etc., all the way up to the frequency of 4151, and that's the highest C on the piano. So, then let's move to the second one. Mark that down, 4151.

In the second one, you're actually moving through the space by octaves. So, you cover seven octaves. The intervallic ratio would be the inverse of $1/2$. Remember, to create the interval in octaves, we cut the monochord string in half, and we only plucked half of it. You start at a frequency of 32, multiply it by 2, to get 64, 128, 256, 512, 1024, 2048, 4096.

Does anybody see the problem? We're at the same note. But, how can the same note, have two different frequencies? And how can our math be so ambiguous?

If you were tuning a piano, you know, what would you do, how could you deal with this?

Surely, numbers can't replace the physical principle that Jenny demonstrated, but we can know that, within this type of linear system, even that breaks down within itself. The same discrepancy pops out. Now, what's causing this? What can we know of the relationships between the domain of the human voice, and the domain of the instruments?

Rianna?

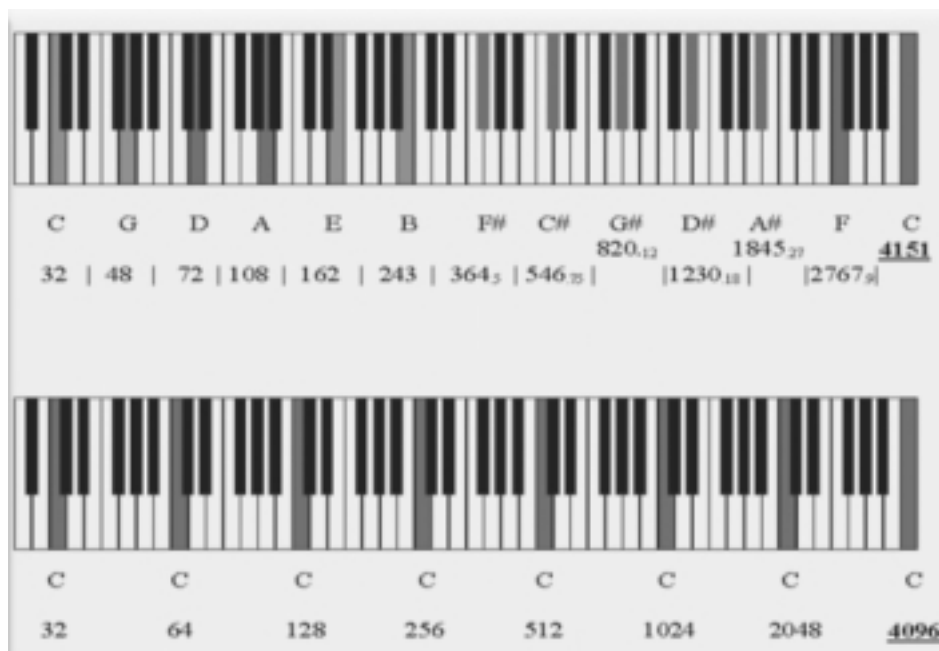


FIGURE 11.

‘What do my maps tell me about the space I’m projecting from?’

Rianna St. Classis: Actually, I’m going to begin by going back to that Riemann quote that Jason began with, and perhaps we’ll see how it relates to what Anna was talking about, if I do this properly.

So, when Riemann says that “propositions of geometry are not derivable from general concepts of quantity, but that those properties by which space is distinguished from other conceivable, triply-extended magnitudes,” that this can only be gathered from experience—what does he mean?

He also talks about a darkness that persists from Euclid to Legendre. Well, doesn’t Euclid’s geometry work? We learned it in high school, and it seemed to be consistent. You’ve got those points, and you’ve got the line—it’s the shortest distance between two points—and I can take that line and I can extend it forever into space. And I’ve got triangles, and the sum of the angles of a triangle is always 180 degrees, and I can use that property to do all sorts of other cool stuff. Right?

Then I can extend that to physics in high school. Can I have the first image [SEE Figure 12].

It’s our friend, the Cartesian coordinate system. Then, I go from the plane, to three dimensions, and I use this to map motion in space (or other things too), but, what I discover is, that motion up and down

is the y axis, motion left and right is the x axis, and back and forth is the z axis. And, any kind of complex motion can be broken down into its component parts, and we can think of those component parts essentially as being independent. Like this box, actually [SEE Figure 13].

Now, if I move to your right, and up, I get here. If I move up, and to the right, I’m back here again.

Okay, I want to do an experiment, because this is what real geometry and physics is about, and if we were actually doing a real pedagogical at one of our cadre schools, then you guys would have to do a lot of work. It would be gruelling, in fact—at least, that’s what I’ve been told. But we’ll do just a little taste of it. So, everybody stand up.



All right. Now, put your arm out in front of you. Actually, we’ll do it this way. Pretend you’re—this is y , this is x , and you’re out in a z . So, move to the right, and move up. Okay. Now, we’re going to start back here again. We’re going to move up, and to the right. Wait a minute. Maybe we should do that again. Right, up; up, right. Wait a minute. I’m ending up at a different point.

Why did that happen? That doesn’t seem to go along with Euclid over here, and Descartes. It seems that, in the demonstration that we just did— You can all sit down, that’s all the work you’ve really got to do, I’ve only got ten minutes—it’s a Baby Boomer pedagogical!—

In this case, it seems as if it matters where I start from. It matters which direction I go first. And it seems that my motions are connected to each other, that the motions that I make are connected in some inextricable way, in a way that you cannot actually separate. It actually looks as if maybe you guys are getting a sniff, that there’s more to space than Euclid and Descartes made out there was.

I’m just going to throw out—this is a pedagogical, right?—I’m going to throw this out at you. You might not be so shocked, if I asked you to think right now of a triangle, the sum of whose angles is greater than 180 degrees. Or, if you’re feeling really wild, less than 180 degrees—but we’ll get back to that.

The problem that you encountered in our little experiment, is similar to, if I were going to set out to demonstrate Euclid’s infinite extension of a line (if you could imagine me walking through walls and across water and everything), and I just started to exit here stage left, which is to your right, and I just kept walking. Eventual-

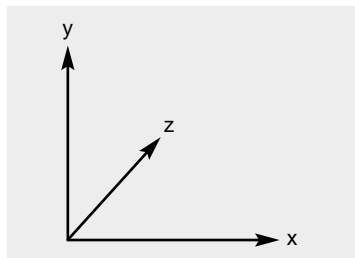


FIGURE 12.



FIGURE 13.

ly, maybe by the Labor Day conference, I'd come back over here, coming from stage right. So, what's really going on?

Well, here's our friend the globe [SEE Figure 14].



FIGURE 14.

Maybe you guys are, let's say, we're kind of here. If I start going east, and I keep going east, and I keep going east, keep going east, all of a sudden I'm coming back from the west! And here I am again.

Now you're beginning to see what part of the cartographer's problem is. I want to map this globe. I want to map something like this sphere, onto a plane. And, one thing that you can take—this is supposed to be an orange, but, you know, you can imagine, because it's a grapefruit. Let's pretend that the skin is the surface of the Earth, and I want to take it off of this, and make it go flat [SEE Figure 15]. I



FIGURE 15.



FIGURE 16.

want to put it onto the plane. Can I get the next image [SEE FIGURE 16].

Well, there's the orange that this isn't, right?

Now, notice something. First of all, you've got this straight line, and you really wouldn't know, where Africa was, and where South America was. I have a hard time determining.

But, notice something else really interesting. When I cut this, I cut it in one direction, clockwise, right. Notice that it curves in two directions, sort of like a treble clef, or an "s." Also notice, that this orange peel, as you can see from the shadow in that photograph, is not actually lying flat. I was cheating a little bit there. If I really wanted it to lie flat, I would have to cut it in thinner and thinner strips, and this could be a pretty tedious process.

The other thing is, that the people who made this cool little sphere to do spherical geometry with, give you a way of making a globe, which is actually a little bit difficult. You have to cut it out from a poster, and you cut it out from strips—we have a picture of it, too [SEE Figure 17]—and I'm supposed to lay it over the sphere, and it holds together and forms a globe.

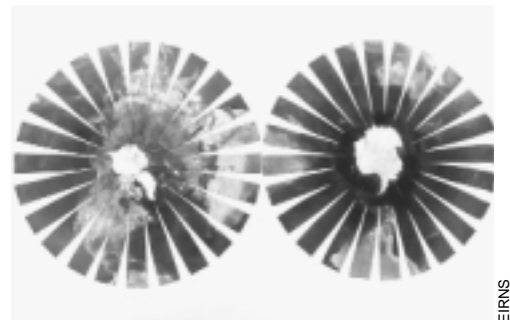


FIGURE 17.

Okay, now notice something about this. Antarctica and the Arctic look pretty good. They flatten out pretty well. But, as I get closer and closer to the Equator, I have to separate, and cut out these bigger and bigger portions, these triangles. The other thing is, that if I were just to lay these flat, and use this as my map, you'd notice that I wouldn't really have a good idea about how to connect them. I can connect Africa there, but then, I don't have a really clear idea about where the connection between South America and say the top of South America, is. Or, what's the relationship between South America and Australia?

Now we're going to get into the really fun part of this, if it works. Let me have the next image [SEE Figure 18], just for a minute. That's a real pedagogical that we did. I don't know if it's going to work out as well in here, because of the lights, but that gives you a sense of how you do a projection. You have a really bright light source,

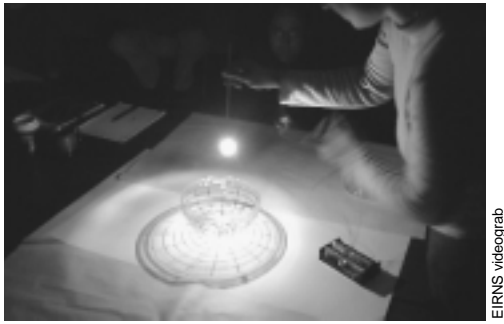


FIGURE 18.

and these hemispheres.

I'm going to have to go through this really quickly. So, what I would encourage you guys to do, is, if you think that I'm doing a bunch of waves of the hand and magic with this wand over here, then come after this panel, and we'll do the serious work of playing with this stuff, because it's actually really cool and it takes a lot longer than ten minutes.

Let's do a couple of little demonstrations with that one. You can notice certain things right away [SEE Figure 19]. For instance, notice how, in that kind of a pro-



FIGURE 19.

jection, I get this distortion with Australia. Notice that the equator, that thick band, makes a circle, that the Southern Hemisphere is inside that circle, and that the Northern Hemisphere, like Eurasia right there, maps outside it, with massive distortion up toward the North Pole.

All right, can I get the next picture [SEE Figure 20].

This is something of a stereographic projection, which means that I'm doing it from



FIGURE 20.

the pole, onto a plane. You can notice here, that's Greenland over to your left, and notice how totally distorted it is. I mean, it's almost as big as the United States.

I guess you're beginning to get a sense of what the real problem is, when I try to map a sphere onto a plane. This is a really old question, because, when you look at astronomy, for example, and you look at the ancients, who were looking at the hemisphere, the dome of the stars, they have to try to figure out a way of mapping them, a way of retaining information. How do you do it? This also has something to do obviously with cartography, but, as Gauss would tell you, it's really not as simple as mapping a sphere onto a plane. It's actually a *series* of mappings: from an irregular solid onto an ellipsoid, from an ellipsoid onto a sphere, from a sphere onto a plane.

So, I'm trying to do these various mappings from various surfaces, is there a way to retain information? And, is there a way to do it, so that I can limit the number of distortions that I get?

Can I get the next picture [SEE Figure 21].

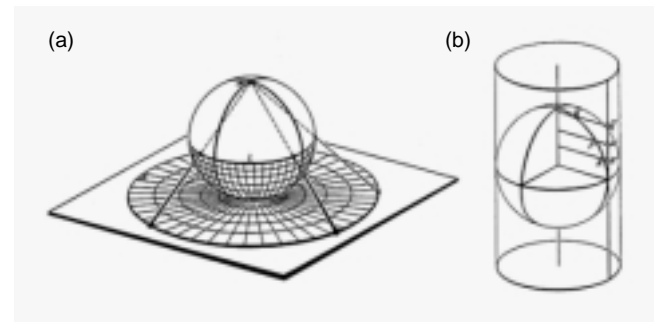


FIGURE 21. (a) *Stereographic projection*. (b) *Mercator projection*.

This is a representation of two different kinds of projections. You have the first one, which I described, the stereographic, where all the things in the Southern Hemisphere map inside the equator; the Northern Hemisphere would map outside. Then, notice the North Pole. Where does the North Pole map? Does anybody have an idea?

The other projection there is sort of a representation of a Mercator projection. The idea is, that I wrap a cylinder around my globe, and project from the inside, from the axis. The question on this one is, where do the South and North Poles project? And also, notice that Antarctica, just a few points on Antarctica, would become an entire strip at the bottom of my map.

Now, let's look at a projection of something a little simpler, so that we can get a clearer idea about these projections. I have to show this really quickly. (I don't know if you guys can see this. Probably no, you'll have to take

my word for it. You'll definitely have to visit me after, because you shouldn't take my word for it!) Here's a triangle drawn on the sphere. He's our friend, the triangle whose angles are greater than 180 degrees. In fact, this is a very special little triangle, whose angles are all 90 degrees [SEE Figure 22].



FIGURE 22.

Let's use this to do a few other kinds of projections. We'll see what we can look at.

First of all, let's look at it as if Sky were holding the light at the South Pole; we were going to do a stereographic projection, to get a sense of what that looks like, because the pictures that I have aren't very good [SEE Figure 23].



FIGURE 23.

Then, a gnomonic projection is from what would be the center of the Earth, along that same axis [SEE Figure 24]. You kind of get a sense of what that looks like. And



FIGURE 24.

then, I'd ask Sky to just kind of go wild, and show you various variations; you know, make that triangle dance.

All right, can I get the next picture [SEE Figure 25].

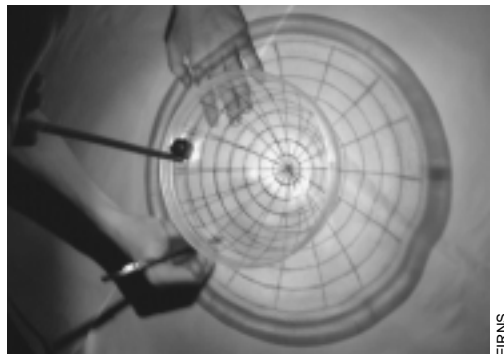


FIGURE 25.

All right, see those hands? It's work! Someone's drawing the stereographic projection, so you can have an idea about it. Next picture [SEE Figure 26].

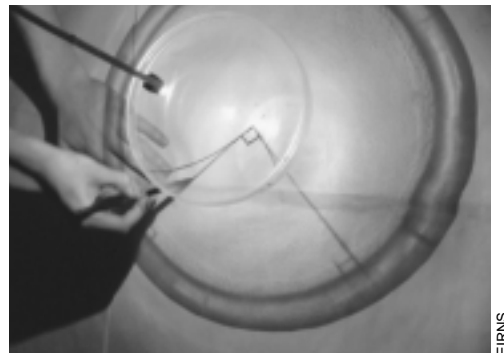


FIGURE 26.

The drawing's not very good, we were bad scientists, we should have redone our data. But, anyway, it gives you a little bit of a sense of the distortion that happens to the lines of that triangle. I'm not going to go any further with that. Next picture [SEE Figure 27].

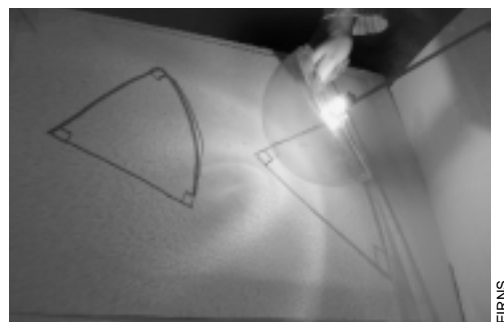


FIGURE 27.

That's a picture of us doing the gnomonic projection, and you can see immediately the difference of the triangle. Next picture [SEE Figure 28].

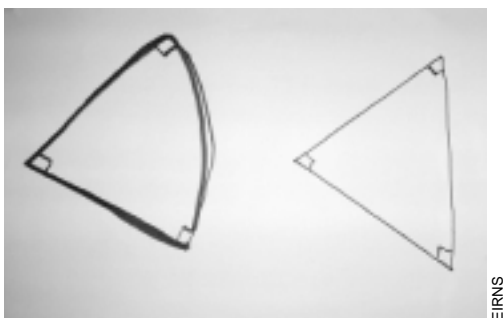


FIGURE 28.

Here you see them together. If I had done this correctly, I could have done even larger variations, so you could see that my maps can be very, very different. It might actually be difficult to know that I was mapping the same thing, from my maps alone. I mean, if I only had the maps, how would I know that I was projecting from the same space? What do my maps tell me, about

the space that I'm projecting from? And, also, notice, that in all those mappings that I did, no matter what I did, I got these distortions. I got these strange points, like the North Pole, or the South Pole, these things we call "singularities"—something that doesn't quite map, even in a distorted way. And, so, aren't these singularities just like the "comma" that Anna was showing us?

So, what is that telling us about the similarities between what's going on with music and the circle of fifths, and what's going on with mapping from different surfaces onto each other?

I bet you guys never knew that Bach had so much in common with a mapmaker. Both of these investigations are getting at how we know about the universe. How do we approach physical problems? How do we approach paradoxes? How do we approach those inconsistencies, so that we can get an idea about what's really going on? About the real nature of space? The real nature of music?

'A paradox is a blessing'

Sky Shields: All right, let's take a look at a finished map right now, from one of the projections that Rianna was working on. Can we get the first picture [SEE Figure 29].

If people recall the first map, where you had the globe inside the cylinder [Figure 21], this is similar to what you'd get. Everything that was mapped on the surface of that sphere, ends up on the side of the cylinder. But, as Rianna said, you get to a sort of weird thing that happens at both poles, which is that one point inside of Antarctica, and one point at the North Pole, ends up taking up the entire bottom strip of our map. So, you end up with Antarctica looking kind of funny at the bottom.

I want people to think for a second. Imagine a scientist or a philosopher, walking around observing the relationships on the surface of this plane here, or any of the planes that we looked at. And, you can imagine that by observing the distortions, and in particular, the paradoxes, he'd be able to discern something about the actual space that he was looking at the shadows of. In this case, a paradox is a blessing, not a problem, as some people like to think about it.

Actually, in this case, it's the paradoxes that have the actual substance, not anything else. Because the paradoxes actually tell you what it is that you're really looking at, or give you some hint of it.



People can tell, for instance, you can get the picture: If you have any two individuals standing on the equator here, walking in parallel straight paths, directly due south, all end up at the same point. Even though, from this perspective, it looks as if they end up at different places along that strip, because, from our projection remember, that one strip is all the exact same point.

Looking at that paradox is what forces the mind, the thinking mind, to a resolution. Now, this should be similar for people—and people should recognize the similarity here, if we can look at the next slide [Figure 11]—between having two different individuals, walking toward the exact same location from the exact same location, only taking different-sized steps, and ending up at a different location—even though it's the same location! That should give you some idea that maybe what you're looking at, isn't exactly what you're looking at: it isn't just a flat plane, or a flat keyboard, as Anna and Jenny showed us.

The Principle of Metaphor

Now, it might be either a surprise to people, or just a little obnoxious, to realize this presentation was really a lot less about Gauss or Riemann, and a lot more about Bach, and metaphor, and counterpoint. But, it shouldn't surprise you. Can we go back to the last picture [Figure 29].

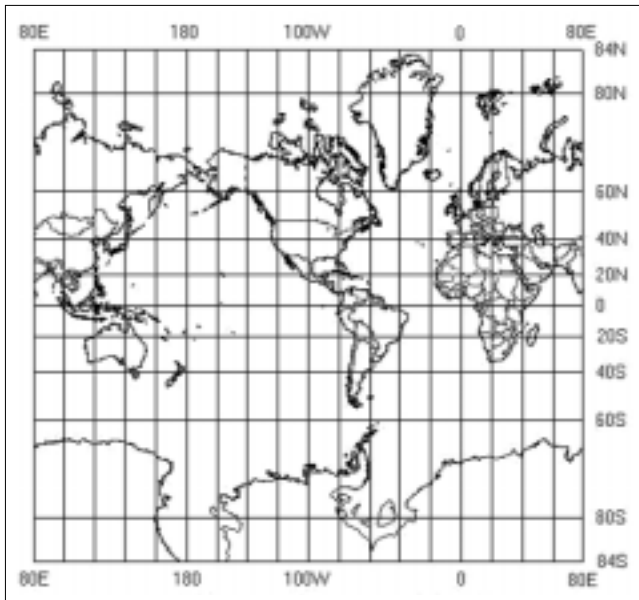


FIGURE 29. *Mercator projection.*

Because, right here, Antarctica is a metaphor. And, I don't mean that in a figurative sense. I mean, literally, that's what metaphor is. What you've got represented with Antarctica, and what you've got represented with the experience of Antarctica, from the standpoint of anybody who's observing the shadows there, is exactly the same quality of thinking, the same quality of mind, that you have exhibited in any great scientific breakthrough, but also any great breakthrough, any great work of Classical art. Because, it's only in the wielding of paradox, in the form of irony and metaphor, that you can force a mind that's observing this, out of the medium that it's working in, out of what seems to be an abiotic instrument, a non-living instrument, or out of what seems to be a flat plane, and into the place where the idea of what you're actually looking at, actually resides.

It's one way to force somebody out of the dead world of seemingly describing relationships of *frequency*—which we got, if we can see the second picture again [Figure 11]—out of the seemingly dead world of frequency, for which we tried to define a reason with the monochord, and into an actual cognitive domain.

And this, which is what Bach and others discovered, is the only way to get a non-living instrument to express a cognitive idea. Using paradox, using irony and metaphor. And it should demonstrate to people that the principles of beauty *are* universal. They're universal *physical* principles. They're not matters of mere

taste, they're not matters of opinion. This is not some sort of a parallel: they are efficient principles in the universe. Without them, man is incapable of having any kind of efficient effect in the universe; man's incapable of making a breakthrough, man's incapable of changing his environment and gaining control over his environment. Man is incapable of surviving without the physical principles of Classical artistic composition.

Building a Political Movement

We should also recognize that we're also incapable of building a political movement, without the principles of Classical artistic composition.

Why is that the case? And just for further discussion on it, because, in order to escape the shadows that we're looking at, in order to get out of what we see around us, the seeming shadows of sense perception—what we ran through with the discussion of the anti-war movement, what we're looking at here, with what seems to just be, a simple set of relations of frequency, or anything that parallels that, what you just see around you, what you're bombarded with through your senses—you need to develop that character of thinking that actually represents the real universe. There's a lot of debate about that, you know. What shape *is* the actual physical universe? Is it flat? Well, most people would agree with you, it's not that. Is it simply spherical? Is it negatively curved? Is it like a Pringle chip? I'll say no, and I hope we demonstrated that the character of the universe is exactly that same quality of mind that everybody in the audience should be experiencing right now.

Moderator: Okay, so here's Lyndon LaRouche. And he will be discussing "The Rebirth of a Republic."

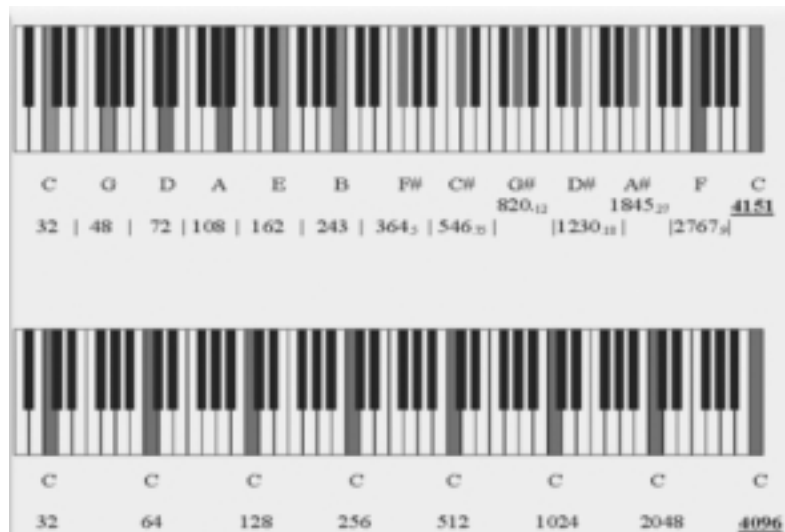


FIGURE 11.

‘We must never again become animals’

Lyndon LaRouche: What you have just seen and heard—those are the two senses involved here, unlike some events—are what are called classically, “spiritual exercises.” The function of them is what I shall focus on with a few remarks.

A spiritual exercise reflects something which we can understand better from a modern standpoint, particularly from my critique of the significance of the contributions of Vladimir Vernadsky, the founder of biogeochemistry, and the inventor of the concepts of biosphere and noosphere. That, universal principles are divided into three types, experimentally.

First, are those things which are abiotic, which do not require the assumption of a principle called “life.” That constitutes a distinct phase-space of the universe.

The second principle, is life. This concept was given a modern form, through the successive work of, principally, Louis Pasteur, Curie, and Vernadsky, who demonstrated that this was, in truth, a universal principle, which was something Pasteur already suspected, but, by geochemistry, by biophysics, Vernadsky was able to demonstrate this principle as a universal physical principle. That is, there is a principle in the universe, for which there is no equivalent in so-called abiotic processes.

All abiotic processes in crystallization, tend to be perfectly symmetrical. *Living* processes, when they intervene into abiotic processes, distort them, to make them “left-handed.” They turn left-handedly, and that sort of thing.

These things are *known* not by some abstract assumption. They’re known by experiment. As Vernadsky said, you can tell what is abiotic, experimentally. You distinguish living processes, and the principle of life, from the abiotic, by the physical effects produced by the presence of living processes, which never are produced by any other means.

Human Cognition

Then, thirdly. We have physical changes in the universe, which are produced only by the intervention of the cognitive powers of the human mind, which were exhibited here in simple demonstrations of elementary pedagogical exercises.

The Classical such exercises are, first of all, the comma, as defined by the treatment of the human voice and monochord attributed to Pythagoras. And, since, as you’ve seen, we can replicate that, we know that the



report is accurate, *because we can replicate it*. We can demonstrate the principle, as was done here. The principle is there. Right?

We also know, the principle of the doubling of the line. You cannot double a line, axiomatically. Because, if you propose to double a line, you assume that you can double a line without using anything but a line to do so, the same line. You can’t. Because, you can’t measure it.

The way you do it, actually, is you go to another dimension. You take a circular action, and you can double a line. But that requires the concept of a surface. So you have to go to a higher power, as surface, to double a line. So that, in principle, you have gone into what Gauss defined as the “complex domain,” as he laid this out in the 1799 paper.

You cannot double a square, except by, in a sense, doing the same thing. Which was done in the case of the *Theaetetus* by, in the Plato dialogue on Theaetetus, which demonstrated this principle as a power. You cannot double a cube, except by a process which takes you *outside* anything in Euclidean geometry. It’s a power, it exists.

Also, the other Classical one, is the only regular solids you can make, inscribed in a sphere.

The Power To Change the Universe

These are the principles which occupied Europe from the Classical period, coming into modern civilization. The treatment of the issue of the five Platonic solids, was addressed specifically, in the Renaissance, by our dear friend Leonardo da Vinci, particularly; it was addressed extensively by our dear friend Kepler, who made a distinction, which was already made by Plato. The distinction is, that this kind of curvature, exists only in terms of living processes, never in terms of non-living processes. And this was Kepler’s principle.

So, these examples, these kinds of cases, are called, in theology, “spiritual exercises.” Why? Because, as I’ve indicated, the universe is divided into three types of phase-spaces: the abiotic, the living, and the spiritual. The spiritual, are the powers of the human mind, which enable us to make fundamental discoveries of principle of the universe, and *to transform the universe*, by taking a principle which existed in the universe before man knew it, and by man’s knowledge and use of that principle, which pre-existed in the universe, *we change the universe*. When man’s willful power of creativity is applied to the knowledge of the discovery of a pre-existing principle of

the universe, *we gain the power to change the universe.*

And that's what it's all about. And that defines the nature of man, it defines what we should mean by spiritual, it defines the yearning of man to see himself, or herself, as made in the image of the Creator of the universe. We see what we *are*. We see what we must never become *less* than. We must never again become animals, or we must never become, again, something lower than an animal, which is called "an empiricist."

Thank you.

'Ideas shape history, not events'

Brian McAndrews: Hello, my name's Brian, I'm a youth organizer in Philadelphia, Pennsylvania, and what I will address briefly this evening are two aspects of the LaRouche Youth Movement's existence: its organizing deployments, and its history.

But, before I go into that, based on the proceedings this evening, and the remarks of Mr. LaRouche, you get the sense that we are an integral part of an unfolding process. That we are part of the most historic development in the history of mankind. Every one of us, sitting in this audience, be it either the Baby Boomer, or young person: we are part of the most historic process in the history of mankind, and should see ourselves as that. And organize in that fashion, and look at ourselves in that fashion.

I heard Laurie Dobson earlier today talk about her children, and I think that, if we take those types of moments, and those types of opportunities, all of us in this audience, and see ourselves as part of that historic development process, then we can win.

So, now on to the rest of the presentation.

The LaRouche Cavalry

Lyn has referred to the LaRouche Youth Movement as the "cavalry," and said that it should deploy in the tradition of the great Union general and cavalry commander Philip Sheridan. What he did with his cavalry during the months of September and October 1864, against the Confederate forces that were based in the Shenandoah Valley in Virginia, represented a deci-



EIRNS videograph



Gen. Philip Sheridan

Moderator: That is actually the natural state of man, genius. And, for anyone who sees that as a paradox, we've got a problem. Because a lot of people think, "Okay, well 'natural,' that's what I *feel*." Why would I have to actually go through work, to discover that which is 'natural'?" Well, if that's the way you're thinking, your head is in the cave, and we can talk afterwards.

But now, we're going to take you to the battlefield, to show you how we put these ideas into motion, to shape the universe.

sive contribution to the Union's victory over the British-backed Confederacy. First picture.

Sheridan deployed his cavalry with lightning speed, and concentration at the point of attack. He always looked to hit the enemy in the flank, and take him by surprise wherever possible. By deploying his cavalry strategically, and with great speed and striking power, he was able to amplify its effects in ways

that were disproportionate to its relatively small size. The effects of his strategic deployments radiated far beyond the field of battle, and captured the imaginations of the population in both the North and South. All of his deployments were designed for strategic, not localized tactical, effect. His mission was to win the war, and his cavalry's deployment was imaginatively mobilized for that war-winning purpose, and no other.

We in the LaRouche Youth Movement are taking a few pages out of General Sheridan's book, as we deploy in a variety of theaters of operation. We have made effective lobbying forays into a number of state capitals, including Sacramento, Calif., Salem, Ore., Olympia, Wash., Richmond, Va., Annapolis, Md., Harrisburg, Penna., and Trenton, N.J., and Lansing, Mich. These deployments have resonated with the many lobbying efforts we have made in Congress and other strategic locations in Washington, D.C. In addition to many deployments and interventions which we do on campuses each day, we also conduct political rallies and other high-visibility deployments in downtown areas and busy thoroughfares. We also intervene frequently in Democratic and Republican Party functions—or dysfunction, as the case may be, state and local budget hearings, trade-union meetings, anti-war events, and many other events that have bearing on LaRouche's

fight for the General Welfare.

To illustrate the nature of some of these deployments, we have some video footage of a big rally that we held at the Federal Reserve offices in Los Angeles last August, after Lyn had addressed the cadre school there. First video.



The mission of the LaRouche Movement cavalry, is twofold: One, put Lyndon LaRouche in the White House in 2004. And, two, launch what amounts to a perpetual renaissance, by creating generations of geniuses, by developing the method of thinking that has been discussed in the panel tonight, and more broadly in this weekend's conference.

I must say, that being a member of LaRouche's cognitive cavalry is quite an experience. While no knowledge of horseback riding is required, knowledge of how to deal with the many varieties of horse's asses that permeate the Baby Boomer generation, is definitely recommended.

Growth of the LYM

Now, as to the history of the LaRouche Youth Movement, I would like to present you with an overview of our growth. Here is a world map of the youth movement as it existed four years ago [*Laughter*] [SEE Figure 30].



FIGURE 30.

The youth centers are denoted by red dots. You notice

anything? We didn't have any LaRouche Movement centers. But, even though we did not have any centers, back then, we did have one very important member. Next image.



This movement, at that time, was an idea in the inside of Lyn's mind, and the whole movement, as you will see unfold, is the process of the unfolding of an idea, and proof that *ideas* are what shape history, and not events. Next picture [SEE Figure 31].



FIGURE 31.

Here you see a map of the Youth Movement three years ago. We have the beginning of the movement, in Los Angeles. Next picture.



This is the historic first cadre school, that took place in February 2000, in L.A., with its twenty youth participants. Next picture.

Here is a photo of William Warfield and Sylvia Olden Lee, who have been a guiding presence of the Youth Movement since its inception, helping to lift the youth out of the cultural wasteland that is the United States, and show how profound ideas are conveyed through beautiful art. Mr. Warfield passed last year, but he continues to teach, and uplift the youth every day in this movement. Next picture [SEE Figure 32].



*William Warfield and
Sylvia Olden Lee*

EIRNS/Stuart Lewis



EIRNS/Samuel Dixon

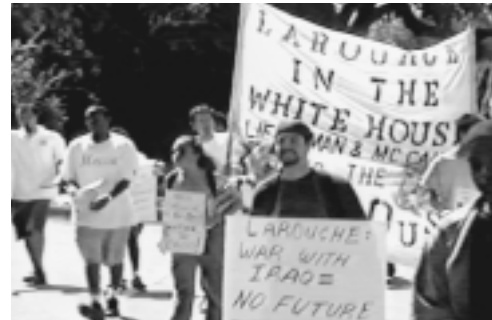
Here is Lyn addressing the cadre school in L.A., in August 2002, which was attended by 80 youth, after which Lyn launched the national youth movement, including the formation of the East Coast pivot of the youth movement, as just mentioned. Shortly before the National Conference in September, we convened our first weekly East Coast Youth Movement meetings in Baltimore, and launched our lobbying effort on Capitol Hill. Here is a part of a tape of our first lobbying effort and rally.



FIGURE 32.

This is a map of the worldwide LaRouche Movement today. You can see from this picture that the growth of the youth movement, nationally and internationally, is pivoted on the East and West Coast wings of the LaRouche Movement in the United States. Los Angeles grew rapidly from its first cadre school in February 2000, and by 2002, Los Angeles had expanded its operations, not only in Southern California, but also into the San Francisco Bay area, and up to Seattle, Wash.

Lyn, in August of last year, mandated the launching of the East Coast youth movement, which would incorporate the lessons learned from the youth on the West Coast. The idea was to capitalize on the great population density that exists in the Washington-to-Boston corridor. Rather than an agglomeration of localized student youth centers, we have been organizing and growing rapidly as the East Coast cavalry strike force, since last August. Next picture.



EIRNS videograb

Next pictures.



EIRNS/Doug Mayhew



EIRNS/Doug Mayhew

Here was our first East Coast cadre school, which occurred last November. It was attended by over 75

youth, and addressed by Mr. LaRouche for 4 1/2 hours . . .



EIRNS/Doug Mayhew

. . . most of it while standing up.

And just two weeks ago, we had our first joint East and West Coast cadre school, with Lyn addressing 175 youth in attendance.



EIRNS/Doug Mayhew

Here is Lyn addressing the Quakertown cadre school; and next, here is the West Coast cadre school . . .



EIRNS

. . . it's 7:30 in the morning, and they're participating by phone hook-up.

In the course of this process, we launched the international LaRouche Youth Movement, with youth from the West and East Coast going to Germany, and to France, to assist Helga and Jacques Cheminade, with their combined campaigns for Chancellor of Germany, and President of France.



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Here is a picture of Helga LaRouche, with Mrs. Amelia Boynton Robinson.



EIRNS

Some youth organizers in Germany, campaigning for Helga.



EIRNS

Here's a picture of Jacques Cheminade, also with Mrs. Robinson.



EIRNS

Young campaigners in France.



EIRNS

More young campaigners in France.



EIRNS/Michelle Rasmussen

Here we have Lyn addressing a cadre school in Copenhagen.



EIRNS

Here we have the youth from the U.S., Germany, and France, with Lyn, celebrating his 80th birthday.

During this same time, the L.A. office has efficiently deployed in Mexico and Peru, launching LaRouche Youth Movements in both countries.



EIRNS

Here we have the East Coast Youth Movement deploying into Canada. This was a cadre school in Montreal that occurred last month.



EIRNS

Here are some of the participants of the Peruvian cadre school that was addressed by Lyndon LaRouche.



EIRNS videograb

Here we have Lyn on January 5, addressed a meeting of students in Wiesbaden, Germany. And, while we have no photo, the East Coast Youth Movement has opened up a Midwest center of LaRouche Youth Movement operations in Detroit. We intend to replicate this process that is going on in Detroit, in a number of other Midwestern cities in the coming months.

The Baby Boomer Syndrome

At this point, I would like to take a moment to illustrate what it is that we are battling in Congress and on the streets. The Baby Boomer way of thinking is what we have waged war against for the last three years. Walking into



EIRNS/Ismael Monge

Here's Lyn addressing a Mexican youth meeting.

these offices, is like a teacher walking into kindergarten. Sometimes we have to ask ourselves, "Should we be talking to them about the triple curve, or potty training?"

We see in these elected officials, the same small, degenerate, immoral corruption, that we see in our parents, our professors, and the American media. The topic of each discussion may vary from one visit to the next, but the subject never does, and that is, the leadership of Lyndon LaRouche. We are conducting Socratic dialogues with these offices, and these Baby Boomers themselves, who can barely remember what it means to be human. By insisting that they respond to the economic breakdown crisis, we are socratically challenging their axioms, and are demonstrating to them, that the LaRouche Youth Movement is growing by leaps and bounds. By so doing, we are bringing hope for humanity's development, and even into the ranks of some of these Baby Boomers. And we are recruiting a number of their non-Baby Boomer aides, to organize *them*, after we've left. So, when you consider the juxtaposition of the bankruptcy of the Baby Boomers, to the potential of the LaRouche Youth Movement, we can better appreciate the Leibnizian concept, that there is no evil that does not contribute to a great good.

So, out of the wasteland of the Baby Boomer generation, given the leadership of LaRouche, a youth movement that is capable of saving this nation, launching a renaissance, and even redeeming the lives of those very same Baby Boomers. And this



FIGURE 33. Francisco Goya, from "Los Caprichos," 1799.



FIGURE 34. Francisco Goya, from "Los Caprichos."

has been brought into being by Mr. LaRouche.

Now, I will, with the help of my friend, the Classical artist Goya, illustrate a few of the typical manifestations of this Baby Boomer syndrome. Note that Goya created these drawings in 1799, thereby demonstrating the power and efficiency of his understanding of the human soul that spans the simultaneity of eternity. First we will view Goya's insight into the impact of the Baby Boomers' love affair with airline deregulation, on air transportation [Laughter] [SEE Figure 33].

What you see here, is the Baby Boomers' preferred method of air travel. The accountants on Wall Street see quite a future in this mode of air transportation. They are said to be quite impressed with its low fuel costs. Next picture [SEE Figure 34].

Recognize this? Here we see the effects of the Baby Boomers' love affair with deregulation, as expressed in the medical field. This is a picture of a perfectly functioning HMO. Here, the Baby Boomer is receiving the benefits of his HMO bargain premium. Next picture [SEE Figure 35].

Recognize this? This is a picture taken from the "shareholder values" family album. This is a typical scene on the floor of Grasso's New York Stock Exchange. These are the guardians of the financial bubble, who are sweeping out the daily procession of the chicken Baby Boomer believers in the bubble, who have been thoroughly fleeced and plucked. The reason that they're hunched so low, is that they're trying to find



FIGURE 35. Francisco Goya, from "Los Caprichos."

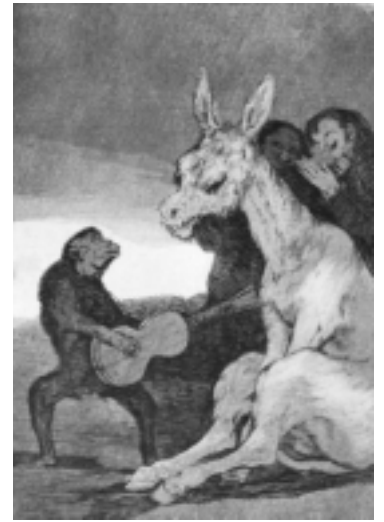


FIGURE 36. Francisco Goya, from "Los Caprichos."

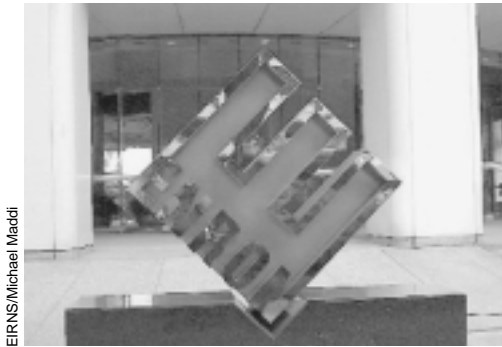
the remains of their 401(K). Next picture [SEE Figure 36].

Ah, culture! This is Baby Boomer music. Here we have a Baby Boomer rock concert. Now, the question is, can you tell which one is the Baby Boomer?

Victories

Now, we'd like to mention a couple of the important victories the Youth Movement has won over the Baby Boomer generation the last few years.

- The first victory is the takedown of Enron, the \$80-billion corporation that was considered to virtually "own" the White House. This was the corporation that no one dared to take on, but LaRouche did. Next picture.



EIRNS/Michael Macdi

Now, most people think that this is the crooked "E" of Enron. But it is really the crooked "E" of the Baby Boomer infantile ego.

- Our second major victory, was our successful effort to delay the war against Iraq. This was a function of our lobbying of Congress last fall. And we can see where that

Dialogue

Moderator: So, I think we've discovered a new universal principle in the communication of ideas: Make fun of Baby Boomers!

I don't know about you guys, but I'm pretty damn excited. Hopefully, people can see now why Lyn says that we *can* win, and we must win. And so, therefore, we *will* win.

And for all those who may be inclined to acknowledge that welling-up feeling, sort of in the lower portion of your belt, which is eagerly begging you to run away from your immortality, just remember: Lyndon LaRouche and his youth movement are waiting by the exit, so you're going to have a hell of a time getting out.

So, unless there's something I'm not aware of, I guess we can open up for questions.

Question: We were talking over like the last week or so,

led to internationally this past week, as Lyn discussed in his presentation yesterday, and Helga outlined in her speech this morning.

- Our third major victory, was expressed in the overturning of the deregulation vote, that was made by the California Public Utilities Commission in April 20, 1996. Just recently, the California Public Utilities Commission has repudiated the deregulation of 1996 as a disaster, and mandated re-regulation. This is, of course, what Lyn said to be absolutely necessary if we are to make any progress in the economic realm.

In closing, I would like to play a portion of a video from a Harrisburg rally that was carried out January 27. This is how LaRouche's cavalry sweeps into the state legislatures, and other organizing situations, and has a lasting, reverberating effect. Play the video.



EIRNS/Doug Mayhew

You have to have fun!

So, to conclude, I would like to invite all of you to join with the LaRouche Youth Movement in its quest to put LaRouche in the White House in 2004. And we will!

or a couple weeks, about this conference, this youth panel, this stuff being something that would change history for 500 years, or 1,000 years, something that would change history into the next millennium. And, I have to say, I got that sense from this, from this whole conference, that we're actually sitting in history. And, I was kind of thinking about what you were saying, the whole thing, but looking at this kind of room, at what we're doing, from the perspective of the whole universe, or the whole solar system. I mean, where would you rather be, but right here, and in history? And, then, I was then wondering about the Riemann paper. Could you put that first one back up there again? The very first slide, I think it was the Riemann Habilitation—

I want to know, just generally, what he meant by "quantity"? I can't remember the sentence. When he

talks about, something about, okay, in order to do something like this . . . What does he mean by “quantity”?

Rianna: I have an idea, but, I mean, it’s just an idea. It seems to me that it has to do with the ability to make a measurement, within whatever the given parameters you have. Like what Lyn was saying earlier about actually trying to double a line. How do you actually measure a line? How do you have some idea about the quantity of that line? So, I think that it’s actually from this basic idea of measurement, that we begin to elaborate conceptions of space. But, that’s just my *idea*.

Jason: Well, one thing to add, is, that the point Riemann is making in this, is that, instead of just looking vaguely at quantities and trying to imagine dimensions, like the Cartesian thing you had put up, with the x , y , and the z —that the only dimensions that you have, or that you can measure, or really look at, are based on the principles you have discovered. That those make up the dimensions of the universe.

Sky: I can use this as a chance to make some recommended reading, I guess, two things together.

There’s one, in the introductory chapter, on mathematics generally and its teaching, in Kästner’s *Anfangsgründe*, where Kästner says, that that which is capable of increase or decrease, is called a magnitude. But, then he goes into something, which is somewhat parallel to what you get in Schiller’s “Aesthetical Estimation of Magnitude,” where he goes through, from the standpoint, kind of what we ran through today, that the concept of quantity—and I guess Cusa does it too, in the beginning of his “On Conjectures”—that the concept of quantity, and the concept of numbers, are something that you can’t take away from a certain cognitive process. Like Schiller said, it’s an aesthetic process. And, I don’t have more to say on that, but I think that’s a better way to look at it, it’s a better way to start approaching it, than just going at it from the idea of, as Rianna’s saying, rather than the idea of simple length, or rather than the idea of anything else, temperature, whatever people would want to call quantity. I don’t know if that answers the question, but, I got to plug three things that I think will be good for folks.

Question: I have a question on the musical comma. And that is, as you show that there is a distinction between the human singing voice and an instrument, discrepancy that’s created. My question is, because, as anybody who’s ever been in a chorus, people have a tendency often to sing either flat or sharp, and you’re constantly trying to bring your voice in coherence with the piano. So, how do you know what the natural placement of the human singing voice is? Or, how would you approach knowing

that? Because, it seems to me, that, on the one hand, we kind of brainwash our voice, in a certain sense, to try to cohere with the piano. So, how do we know what the natural placement is, as opposed to simply that it’s not just conforming to the piano itself? Or, how would you go about knowing that?

Anna: Is your question, how would we go about knowing what the natural placement of the human voice is? Is that it? Well, I think that’s a good question.

I think you have to do a lot more work, I mean, off the top of my head, that’s what we’ve been working on in L.A., just opening up the discussion on the comma. Because, you know, the music question, and the set axioms about where music comes from, exist, and so we’re just opening it up, and trying to figure it out ourselves. But, you know, I would say that the one direction to maybe start looking at from is: What is the intention of the human being, and, what we were going through tonight is, that you actually want to start looking at the physical principles that lie in the human being, the human voice being one of them.

For instance, you have register shifts, which are very natural in human beings, and which someone like Kepler was doing work on showing how they actually correspond to the solar system. But, starting there, ask the question, “How is the human voice developed?,” by figuring out which physical principles it has, like the register shifts. That’s where *we’re* going to start from, but that’s just my, again, that’s just my idea. Does anyone have anything else? Jenny? Okay.

Moderator: On that, it seems like, if we look at it in terms of the cognitive always being what’s ordering the living, and then, hence what’s ordering the non-living; it would seem that the actual, if you know the idea that is intended in the composition, that’s actually what would then probably *order*, where the natural location of the voice would be, for the given piece. And I don’t think it would be as static as the piano.

Anna: [Inaudible.]

Moderator: Anna was just saying, that that was demonstrated when Jenny was moving up the scale. That the idea in her mind is what placed the voice.

Sky: We discussed it, when we were talking about the demonstration to begin with. There’s a possibility, there’s a likelihood, that the voice would try to match the piano—What Cody says is right, that’s the way it should work. The human ear doesn’t hear notes. You don’t hear notes, or frequencies. You hear intervals, but not intervals even defined by the notes. The intervals are from what Cody’s talking about, I mean, those are defined by what the composition requires, what the idea requires. And

then, from that, you can try to bounce somebody to that, by creating the kind of paradox and counterpoint that you get with polyphony within the music. And you can kind of bounce somebody to something higher. And, the idea of the demonstration *was* supposed to be that you'd get that, from the voice, that would be an innate thing the human voice did. But then, I guess it's still worth discussing, about whether or not the voice does that, or, whether it actually does just match the piano.

Question: Mine is a question that relates to your question. Kepler discusses, in the *Harmony of the Worlds*, and from what I've read of Cicero, he discusses this as well. Is that, there's a harmony, a musical harmony's created by the intervals of the planets, the relationships of the intervals of the planets. So, the human voice, is a reflection of that. It's sort of a question: Is the human voice a reflection of *that*, or, are the planets a reflection of the human being? I guess I could ask Mr. LaRouche that question. So, I would say, just that astronomy, and Kepler, is just about one of the best places to start, and that I've learned a lot, I'm sure we all have learned a lot, about music, from Kepler and astronomy. You don't get this in school at all.

Moderator: Just something that always comes to my mind, that's fun to pose to people on this question, is: If, in fact, the planets do produce harmonic relationships, like those harmonic relationships which we use in Classical composition to allow us to transmit *ideas* which increase our power in and over the universe, then that actually gets at the interesting question, what must the nature of the universe be, that it reflects those very principles by which we increase our power in that universe? So, I think that's fun to play with people.

Rianna: Playing off what Sky said: Who's actually making the measurement? Where does that conception even come from? And, who's making the music? Where does the instrument come from?

Question: The question goes to Alex. Just looking at the history of the Civil Rights movement, and thinking about the unique contribution of Dr. King, what Dr. King contributed to the Civil Rights movement, and the measure of effectiveness that his unique contribution to the Civil Rights movement added.

You think, for example, about his conception of non-violence, and the superiority of that conception, to what the so-called Black Nationalists represented. For Dr. King, that was a universal physical principle. It wasn't just an arbitrary, you know, "I'm going to negate"—like Kant would recommend—"I'm going to negate my impulse to strike back at the enemy." But, for Dr. King, it's a universal physical principle which, obviously, he got

from Gandhi, and Gandhi quotes Christ, in defining the non-violent method of civil disobedience, as a way of attacking the menace of the British Empire.

I'm asking the question, because, if you think about the failure of the Civil Rights movement after Dr. King was killed, it is pretty clear that, even though a lot of people who were around him applied the method when he was alive, they really did not understand what he meant, which became evident with the complete disintegration of the Civil Rights movement after Dr. King died.

Now, I'm looking at what Lyn is doing, and this movement around him, as, you look at what you define in terms of the principles of Classical artistic composition, what Shelley, for example, contributes to poetry, and it seems to me that your argument is, that you have to approach the understanding of poetry, for example, or the principles of Classical artistic composition, from a higher standpoint. Now, how would you approach that, to develop within us, as a movement, a self-conscious understanding of what these principles mean, to improve our effectiveness? Because, we're trying to create, not just a bunch of followers, behind Lyn, we're trying to create a bunch of future leaders. I know you've done a lot of work on poetry. How would you approach things, to develop that self-conscious understanding of what these principles mean, and, like Lyn says, they become a part of us? That's my question.

Alex: That's a heavy question.

In terms of developing these qualities, and how you do it, I've recently discovered—my mind kind of argued *against* it, but I recently discovered—that what Lyn was putting forward in terms of the work on Gauss and studying geometry and history, that that is true. My mind was not exactly inclined to dive into the Fundamental Theorem of Algebra, and things of that sort. The reason I respond that way initially, is because of the subject that you brought up initially.

You asked about Martin Luther King. King's commitment was to the *truth*. It was addressing what the actual nature of the universe is. He was committed to being truthful. As soon as you asked the question, I thought of a speech that I recently listened to, in which King addresses the fact that people are questioning him, for meddling in affairs which shouldn't concern a Negro preacher. "Why are you concerned about things, such as foreign policy, and what the United States is doing, from a standpoint of affecting the entire world?" And they were saying, "Well, look, you're meddling in these things, and you're upsetting people, talking about the Vietnam War, and so forth. Why don't you mind your own business? Haven't you noticed that you're not getting as much money and contributions as before? This is

affecting you. Don't you want money?"

And, King's response was a very profound response. He addressed the quality of what a real leader is. He said, "I'm not a leader of consensus." The conception he identified as guiding him, is, *what is right? What is truthful?* Since, I mean, you brought up the Black Nationalists, and so forth. Most so-called Black Nationalists, which were deployed against King, were complete enemy operations. Stokely—"Stroke-me"—Carmichael, and other people of that sort. People who talk about hatred for European civilization, on the basis of some ethnic business. This was a creation, a synthetic cult created by quote-unquote "white people." You know, Tavistock Institute is not run by Black people. They created this stuff, deliberately, to destroy what the Civil Rights movement represented. The principal proof, is that the typical Black Nationalist has no conception of ancient Egyptian history. I talk to these people, what's left of them, today—they know nothing about African history, or any history, for that matter.

And you look at King, on the other hand. He was asked, in an interview one time, what, if he had a choice of any book he could take on a desert island, beside the Bible. And he said, "I would take Plato's *Republic*." His commitment was a commitment to universal history, and to mankind, and I think that that is the principal issue which separates a successful movement, from one that fails.

And, just to address this thing that you brought up, on the influence of Gandhi. That's true, Gandhi did have an influence on King. But, from the standpoint of non-violence, the thing that you want to look at is Shelley, and his approach to the thing—not simply as a tactic, but as a principle of addressing that, before a people can be qualified to demand a form of government which is an expression of justice, they themselves have to express a level of human maturity, which necessitates—which, as Frederick Douglass eloquently put it, "unfits them" to be slaves. And that was the attitude of Percy Shelley. He understood injustice, he understood the evils of the oligarchical method of thinking that dominated the world during his time. But he understood also very clearly, as the case of the French Revolution demonstrated, that if you did not have a policy and a fight to educate the population, and to help, and to make them qualified by uplifting them above the mental status of beasts, above the mental status that today's popular entertainment will reduce us to, unless you educate people beyond this, then you can't demand justice and sanity.

Moderator: All right, we're being told our time is up. So, I guess, Lyn has parted the waters of popular opinion for us. Now it's time for all of us, to choose whether we're going to take up the moral challenge to find the courage to cross.

And we're going to sing.

Sylvia Olden Lee: And when you get, you in the crowd, all of us have an idea how it goes, don't spoil her solo, but when she sings, "He's got *you* and *me*," will you point to them, everybody in this hall should sing this with sincerity: "He's got *you* and *me* right in his hands."

Jenny: I think everybody should join in, every verse.

[Panelists and audience sing the African-American spiritual.]

"He's got the whole world in His hands,
"He's got the whole world in His hands,
"He's got the whole world in His hands,
"He's got the whole world in His hands.

"He's got the birds and the bees right in His hands,
"He's got the birds and the bees right in His hands,
"He's got the birds and the bees right in His hands,
"He's got the whole world in His hands.

"He's got the brothers and the sisters right in His hands,
"He's got the brothers and the sisters right in His hands,
"He's got the brothers and the sisters right in His hands,
"He's got the whole world in His hands.

"He's got everybody in His hands,
"He's got you and me right in His hands,
"He's got everybody in His hands,
"Oh, he's got the whole world in His hands."



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