

Final Script (Joe Andrade, joe.andrade@utah.edu, 801-706-6747)

What Might Leonardo Say and Do? –

Talking with Leonardo da Vinci at The Leonardo

Participants:

Joe Andrade, as himself – a 20 year student of Leonardo da Vinci.

Leonardo da Vinci, as himself; played by Joe Andrade wearing a Renaissance cap.

Scott Smith, as himself – moderator and facilitator, representing The Leonardo.

Questioners as audience participants (in order of appearance):

They will each raise a card with their name so Leonardo can know their name; they will also have a notecard with the text of the question.

Scott will call on them but they may also stand, showing their name card, and begin enthusiastically talking as soon as the script permits.

Scott - via interruption – Question on Columbus.

Danny 7 years old: Question on read and write.

Juliette 9 years old: via interruption - Question on drawing and
Question on always drawing?

Shannon: Question on Earth, Lovelock and Gaia

Alex, 5 years old - Question on dinosaurs

Marco, 6 years old - Question on birds

Jacob: Questions on Energy

Maya, 11 years old: via interruption - Question on theatre sets

Santiago, 10 years old: via interruption – Question on music

Bill: Question and discussion on Carbon Fees

Ray: Question on Solar electricity

Linda: Questions on climate change, drought, water.

Dylan: last question: Flight discussion
flying device? Paraglider demo

Set: A small stage or amphitheatre containing:

One simple stool or table, with a bust of Leonardo – the aging Leonardo will speak while leaning on the table or bust.

One large table – with books and demos to be used by Leonardo and Joe.

A stool or chair

Vitruvian man poster

a package at side of stage containing Neyme's paraglider.

Costume:

Joe/Leo wear a Leonardo T-shirt.

Joe wears a cap when speaking as Leonardo, adjacent to the bust.

Leonardo has a sketchbook appended to his belt

Scott enters stage:

Hello. My name is Scott Smith; I am Program Manager at The Leonardo and your host for this event.

Leonardo da Vinci is our greatest icon and inspiration for creativity and critical thinking. The Leonardo welcomes da Vinci - Genius, an interactive exhibition that takes us 500 years back in time to celebrate, understand, and appreciate Leonardo's achievements and creativity.

Although Leonardo died some 493 years ago, in 1519, we thought you'd like to 'meet' him and ask some questions relevant to our world of 2012. Since we can't actually resurrect or time travel Leonardo to 2012, the next best thing is to get someone who really 'knows' him to play Leonardo da Vinci.

Joe Andrade is an Emeritus Professor at the University of Utah and one of the founders of The Leonardo. Joe has been studying da Vinci for over 20 years and does interactive workshops and demonstrations about Leonardo. This is his first experience as Leonardo, as well as his first theatre-like stage gig.

Join me in welcoming Joe Andrade...

Joe walks to lectern with cap in hand and belt notebook:

Joe:

It's a great honor to 'play' Leonardo da Vinci at The Leonardo. As Scott said, this is my first stage gig. Do be critical, but also be kind and compassionate!

500 years ago Leonardo da Vinci was 60 years old, living in and near Milan, Italy. It is a difficult time, as there are battles going on in and around Milan. This is the time of his studies of human anatomy as well as his notes on geology and water – recorded in what we now call the Codex Leicester (owned by Bill Gates) – a version is on the table.

Leonardo is aging. Just a few years later he will take up residence in Amboise in France as a guest of the young French King, one of his many admirers. A few years after that he dies in Amboise, on May 2, 1519 – with the Mona Lisa and 20,000 pages of notes, writings and sketches.

Here's how this will work:

This is me, a student of Leonardo da Vinci – and this is Leonardo (cap on, leaning on bust).

I won't pretend to impersonate or to 'be' Leonardo – no Italian accent!

As Leo, I'll respond to questions as Leonardo might have responded, based on my understanding of what his many biographers have said and written.

Leo will mainly speak from here –(demonstrating) – and he'll use some notes, as his memory sometimes falters.

Joe will speak standing from farther away (demonstrating).

You'll need to use your imagination to appreciate Leonardo.

Scott?

Scott:

*Joe Andrade is not Leonardo da Vinci and doesn't look like Leonardo.
What might Leonardo have looked like?*

Roll the video, please:

TED video by , about 4 min. 20 sec.

http://www.ted.com/talks/siegfried_woldhek_shows_how_he_found_the_true_face_of_leonardo.html

"...the icon of icons, Leonardo da Vinci..."

'Leonardo' enters; Scott guides him to the chair.

Scott:

Welcome, Leonardo!

Leonardo:

Thank you, Scott! This is fantastic! Just a few days ago I was in Vaprio d'Adda, outside Milano, studying fossils in the marvelous Adda gorge - and now I am in Salt Lake City, Utah - in the New World - a world I didn't even know existed!

Scott, **interrupting:**

But Columbus discovered the New World in 1492 - that was 20 years before 1512!

Leo:

Scott and Joe told me there would be questions. Good! I love questions. We must ask questions, constantly.

My memory sometimes falters. Yes, we knew there was a 'new world', from Columbus' report from his expeditions. We were so excited! But we knew essentially nothing about that New World.

We already knew the Earth was a sphere - and Copernicus had already told us in 1509 that Earth is a planet orbiting the Sun. The Church didn't like that - nor did most of the common people.

But we did not know of your 13 Colonies nor of the United States. 1512 was some 250 years before your 13 Colonies and Declaration of Independence. The New World was a tantalizing mystery.

But here I am, thanks to TheLeonardo, to Scott, and Joe; thank you!.

Joe:

You are welcome, Leo (he said earlier we can call him Leo - he's a very informal person).

Leo's been here for a few days and doing his homework - he's trying to catch up on the last 500 years. We know some of YOU have done your homework and are ready to ask some questions. He's not shy, so he'll respond - but he knows his knowledge is dated - based on the year 1512 - 500 years ago. So don't expect ...

Leo (interrupting):

Joe – you do understand that my biographers all say I was hundreds of years ahead of my time. My knowledge and perspectives may not be as dated as you think...

Joe: *Yes, of course. Excuse me, Leo.
Another question?*

Danny raises his number/name:

Mr. Leonardo. Do you know how to read and write?

Leo: [Leo repeats all questions...]

Thank you for the question, Danny.

In my time, if your parents were not married, you could not get formal schooling. So I could not go to school. I learned in the fields and villages around Vinci. My grandfather raised me and helped me learn to learn and to sketch.

I was lucky to become an apprentice in the big city of Florence, working with a good painter and sculptor when I was only 14.

But I was so curious and interested in everything. And books were starting to become available. The printing press was invented in Germany about the time I was born. But most books were in the Latin language. So I learned Latin by myself so I could read them. Whenever I could, I bought books. Now I have a good library of about 150 books, and you could say I'm fairly well educated – self-educated. I have no formal degree or credentials – just my experience and self-learning...

Juliette interrupts, and holds up her drawing of a horse:

Juliette: *And you can draw really well! How did you learn to draw?*

Leo, pointing to her drawing, drawing her and sketch to center for audience to view:
You drew that beautiful horse? That's very good. I love horses – and all other animals, too. I drew and studied lots of animals, but my favorite is horses. They are so powerful...so beautiful. And they work so hard for us. That's why we talk about energy as horsepower.

Juliette: *Were you always drawing, like me?*

Leo:

Yes, I always had a sketchbook or notebook on my belt (pointing to the book on his belt) – ready to draw or write at any time. Drawing came very easy for me – even very detailed drawing. Some people said my eyesight was super good – I could see details that they could not see.

You know, when I die in 7 years in 1519, I'll have 20,000 pages of sketches, notes, and writing. But I will die too soon – before any of my work is actually published.

Joe:

Leo, let me add that you never married, had no children, no close family. So your 20,000 pages were given to a loyal assistant who tried to organize them. He did manage to organize some and print them as your now famous Treatise on Painting. But he, too, died too soon, and his son ended up with the pages – and started to sell and give them away. So today we have only about 7,000 pages of your work. Much of your work and genius has been lost.

Leo:

That's terrible. So much work, gone. And I can't recreate the work while I'm here. I'm tired, my memory is not so good, and my hands are becoming arthritic. I have to go back to Milan after this visit and, then, as you know, will then die after only 7 more years. So much of the work I still want to do will remain undone. [Sadly]

Let us go on...

Shannon,

I read that you have a holistic view of Planet Earth – sort of Earth like a man. A British scientist, James Lovelock, has that view today – he calls Earth, Gaia, an ancient name for Goddess of the Earth.

Leo:

Shannon's your name, correct - that's wonderful!

In my time we thought of the Cosmos like a Man, or a Man like the Cosmos.

I'm often quoted as saying 'Man is a model of the world.'

That's where my Vitruvian man comes from (pointing to poster).

I drew it when I was 40 years old.

The human proportions idea comes from a Roman architect, Vitruvius.

The outstretched man in the cosmos drawing was done by many artists in my time – it was a popular image. There were many such drawings, but I do think mine was the best!

As you know, I studied rocks, rivers, mountains, caves, land – I thought of rivers and waters like the blood of the Earth; the rocks like our bones; the raising and lowering of the seas as tides were, to me, like our lungs – what you call today respiration.

I think Lovelock is right to think of the Earth as a Goddess – for me, goddesses are more useful than Gods!

I understand that all your scientists – but very few of your leaders – understand that Earth is large but not infinite – Copernicus told us that already 500 years ago.

If we pollute our blood we suffer; if we pollute the Earth's waters, the planet will suffer - and so will we. It is the same with the air and the land.

Is there another question?

Alex: *Did you study dinosaurs?*

Leo:

Alex, what a great question. You might think my answer should be no, I couldn't study dinosaurs, because they went extinct about 50 to 100 million years ago – long before even my time. But I did study fossils. And, you know what, paleontologists have now discovered dinosaur fossils in Italy.

But I am sure you know that I was very fond of birds. I would buy and release captured birds in the market. And I spent much time watching them fly, and sketching their movements. I always wanted to fly like a bird.

And, we know now, that the ancestors of birds are dinosaurs. So, yes, you could say I studied dinosaurs! But not the big, extinct ones. Thank you, Alex.

Marco: *but what kinds of birds did you study?*

Leo:

All kinds, but I was especially fond of kites. They are large raptors, which are common in Northern Italy – I hope they are still common today! Their flight was just beautiful [gesturing arms as wings]. I love birds!

Sorry, Jacob – back to you...

Jacob:

Most of our energy today comes from burning fossil fuels – like coal and oil - for heating, for transport, for making electricity. Do you know about these sources of energy?

Leo:

I know now, as I've been doing homework while I've been here. My studies of fossils and rocks gave me some understanding of geologic time. I studied fossils high up in the Alps. I knew that rocks can move – very, very slowly.

And I knew about plants, compost, and even coal. We burned wood for heat and cooking – and we knew about and used – a little – coal. We learned about coal from the Chinese and the Greeks.

But most of our energy came via the muscles of men and horses, wind power, and water power. We also knew how to store energy in metal springs, used mainly for clocks. I also used spring energy in my marvelous theatre cart – the audiences thought it was magical – driven by unseen forces. But that's another story.

Maya, hand in air – excited:

Please tell that story! I love theatre and love to act – and you designed theatre sets, right?

Leo:

Yes, Maya. My magical cart was for the theatre. As you say, I earned much of my living designing and building machines and art for theatre. I organized and designed festivals and special events.

Santiago, interrupting:

Did you do music...play music?

Leo:

Well, yes, I did play music. When you design events and festivals, you have to be able to do many things. I had an ear for music. I was told I sang and played very well. And I invented several new musical instruments.

Maya, back to your question...

Many of my inventions were never built – they were invented and designed, but not built.

The cart was built and worked very well – it is my favorite!

Imagine a cart coming from the side of the stage, perhaps with a child actor or actress on it – perhaps you! The cart moves on its own power. I programmed it to travel out a specific path – it may have been the first programmable robot.

No animal or man is pulling it or controlling it.

500 years ago that was like magic.

The audiences loved it. They stood up and cheered!

And, even though I drew the design in detail, your modern engineers could not understand how to make it work – until two imaginative young men in Milan figured it out about 10 years ago. But that is indeed another story.

Jacob – please continue...

Jacob, continuing:

Do you know what happens when we burn coal and other fossil fuels?...

Joe:

Leo, by fossil fuels he means...

Leo: annoyed:

I know what he means. Fossil fuels are mainly plants (I was a good botanist, you know – just look at the plants in my paintings). The plants died, were buried, and slowly converted to fossil fuels over millions of years. Remember, I had some idea of 'geologic time' – though most of my countrymen did not – just as most of your population does not either, even after 500 years of science.

So, yes, these carbon fuels, when burned, yield heat energy.

Jacob: *But you didn't know about atoms, molecules, and chemical reactions, did you? Or about the Periodic Table?*

Leo:

No, but we did know about a Greek named Lucretius, who wrote a beautiful poem called On the Nature of Things (it's in my personal library). The Greeks knew about atoms – the smallest units of matter. They didn't know about Elements or the Periodic Table, of course. Neither did I – or my colleagues. That knowledge would come some 300 years later.

Jacob:

Yes, it did come in the 1800s. We know now that when we burn fossil fuels we produce a gas called carbon dioxide, CO₂. It's the same gas we exhale from our lungs because it's produced by our own internal metabolic energy processes.

Leo:

Jacob, some of your words are not yet in my vocabulary.

Jacob:

Sorry, Leonardo. We know now that the CO₂ made by the burning of fossil fuels goes into the air and has the property of absorbing sunlight – and that causes the Earth to get hotter – and the oceans to get very sick.

Leo:

So if burning fossil fuels hurts the planet, just stop using them. Can't you be creative and do something different?

Bill:

What a great question you ask, Leonardo. What you suggest is exactly what I'm trying to do. Our political leaders seem powerless to take any action...

Joe, interrupting:

because they are corrupted by money from the very rich fossil fuel industry...

Bill:

Yes, that's why we are proposing a fee on carbon – on the use of all fossil fuels. That would make carbon-based energy more expensive, discouraging its use, and encouraging the development of other energy sources.

Leo:

If you make something more expensive, people use less of it. Brilliant! Your name is Bill, correct? Joe told me about you.

You know, we used almost no carbon fuels, except wood produced by biology, and we did just fine. We also used wind and water energy – and, of course, horsepower and manpower [flexing his muscles].

I have done many experiments with energy from the Sun – to produce heat. I experimented with mirrors to collect and focus the Sun's rays. That work is in my notebooks. Sun energy is marvelous!

Ray:

Do you know about solar panels – and solar electricity?

Leo:

Electricity – someone said that earlier. What is electricity, Ray?

Ray:

Electricity is a 19th Century technology – the flow of electrons through wires can do work – like producing artificial light (motioning to the lamps above). It goes back to old experiments with amber and fur.

Leo:

Yes! I remember. That's not so modern. The Greeks wrote about it. And I have observed it myself – on very dry, dark nights. – little sparks when fur and body rub together. But you have harnessed it – to make light?!

Ray: Yes; *electricity is a key part of our entire industrial economic system.*

Leo:

Artificial light – without a torch! Brilliant! How much easier and faster my anatomical dissections could have been with lights such as these (pointing).

Bill:

My plan is to encourage people to use solar energy rather than fossil fuels.

Leo:

Of course. It seems obvious, to me. Perhaps I could talk to some of the leaders you mentioned to tell them of the wisdom of your plan?

Joe:

Perhaps on your next visit, Leo.

Yes, the lady - Linda?:

Linda:

There are two major problems with CO2: the destruction of life in the oceans and climate change – leading to much more severe and chaotic weather.

Leo:

Of course, I think. As the planet warms there will be more moisture above the oceans and perhaps less moisture above much of the land. And greater differences in temperature means the winds will be more severe. I have studied winds, water, floods – as you know.

Linda:

One severe problem is drought – and communities who like to use large volumes of water.

Leo:

Yes, Linda, I suppose they'll have to get by with less water, won't they?

I don't understand why – with 500 years of scientific activity – people in Utah in 2012 act as if they can ignore the laws of Nature and the principles of the Earth.

Linda, continuing:

Some people want to take water from Lake Powell, a desert reservoir behind a large dam, to a desert region 100 miles away.

Leo:

Isn't that silly? The project seems like sticking a tube into the bottom of a water bottle. The water flows in the tube as long as there's water in the bottle. But if you're right about drought, there soon will be no water in the reservoir – and the tube will be dry.

As you know I had big plans to control and even divert rivers, but I never challenged the Laws of Nature – or of Climate!

The people wanting to do install the dry straw – I think it is called the Lake Powell pipeline – are they educated? And the people electing or supporting them – don't you have public education in Utah?

Scott:

And on that non-political note let's take some additional short questions. Leo, are you up to taking additional questions?

Leo:

Of course, I love questions. Life is about asking questions! Questions are far more important than answers, you know.

Scott:

Please tell us your name and if your question is for Leo or for Joe. Yes?

Questions...

typical ones:

why did you write backwards?

why didn't you ever marry?

did you have boy friends?

which of your inventions were actually built?

Dylan:

Last Question: *I'd like to change the subject? You wanted to fly, didn't you?*

Leo (lighting up):

Yes! Like a bird – soaring over the landscape.

You know, I did fly – in my mind. I saw the city and the rivers from the air – and drew them. And I designed many devices for flight.

I did try to launch several times, from a small hill, when the winds were strong. But I never left the ground.

Dylan:

Can I show you my flying device?

Leo:

Yes! Yes!

Dylan: standing up and opening a parcel on the side of the stage:

This is a paraglider – fabric air foil attached to a frame the pilot wears.

Note the large air foil area – and how light ...

Leo:

Yes, yes. That will work! You have enough area for the lift needed to lift a man.

Dylan:

It does work. Hundreds of us fly every weekend – like birds.

Leo:
Magnificent! May I try?

Dylan:
We have even larger paragliders – to support two flyers.

Joe:
Yes – this man, Dylan, took me on a flight last year. (Looking at Leo) I thought about your dreams the whole time we were in the air.

Leo:
Then let us go flying – can we go tomorrow?

Scott:
I think we can rearrange your schedule.

Leo:
*Wonderful. Then I must rest and prepare. Dylan, may we discuss some technical aspects? So many things to do, so little time! I must rest.
Good night. Ciao!*

Wait, wait! May I have a photo with these creative children!

Thank you!

Leonardo slowly exits the stage.

Scott:
*Good night, Leonardo.
Let's hear it for Leonardo da Vinci...and for Joe Andrade.
and for our Questioners and discussants – and especially Danny, Juliette, Alex, and Maya.
Thank you, all.*

*Ciao! Grazi! Good night!
Good night.*

more info:
Joe Andrade
joe.andrade@utah.edu
801-706-6747