



The Leonardo



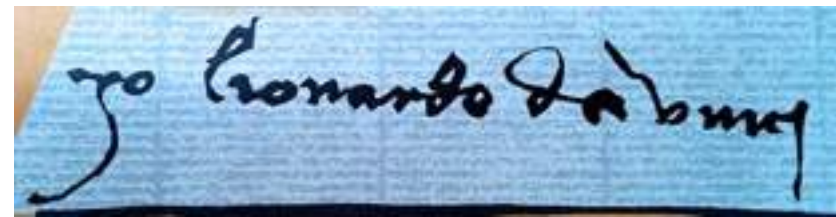
Leonardo da Vinci - The Man, The History, The Lessons

Joe Andrade

University of Utah and The Leonardo

March 20, 2019

The Leonardo





Why THE Leonardo?

- 1986 - a Science Center for Utah? (33 years ago!)
- 1992 - Hansen Planetarium and Dr. Stephen Hawking
- 1993 - Utah Legislature action - Utah Science/Arts Center
TheLeonardo name and concept suggested by Robert Olpin via inspiration of *Art and Physics*, Leonard Shlain, 1991.
- 1994 - Utah Legislature and SL County \$\$ and planning/design study
- 1995 - Gateway Center concept; Hawking second visit and lecture
- 1996 - Leonardo on Wheels traveling science program
- 2001 - SLC commits space in old City Library; Legislature re-empowers project.
- 2002 - TheLeonardo at Library Square name adopted.
- 2003 - SLC voters approve \$10M bond for TheLeonardo building.
- 2008 - The Leonardo hosts Body Worlds
- 2011 - The Leonardo opens! (25 years of dreams, plans, persistence)

BOB OLPIN / CONCEPT DODDLES - 1. 10/7/93 / THE LEONARDO - AN ART/SCIENCE CENTER!
 UNION/TRANS → A TRIP. (NOT A MUSEUM).
 NOT A TREASURE HOUSE (EXCEPT TO EFFECTIVELY STORE STATE COLLECTION).
 AN IDEA CENTER / A LEARNING OR EDUCATION CENTER.
 DEPOT: depositum (a deposit); a station (transportation); a station where RECRUITS are assembled and trained.

see www.joeandrade.org
 click on The Leonardo





ehLeonardo



So Why Leonardo da Vinci?

Artist, Inventor, Engineer, Scientist, Architect, Musician, Anatomist

Creativity, Genius, Inspiration - Icon

Lived and worked 500 years ago

Renaissance Man; lived by experience and questioning

Didn't finish projects, unfocused, ADD?

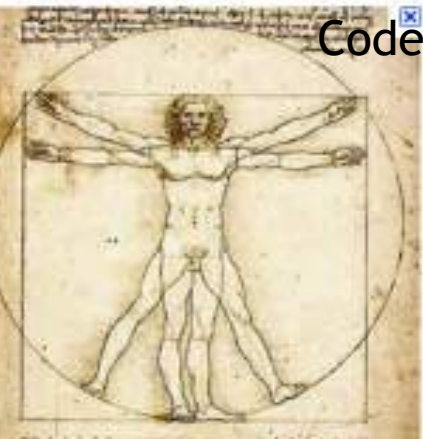
Left-handed; mirror writing. Why?

Self-educated; initially 'illiterate'; didn't trust books

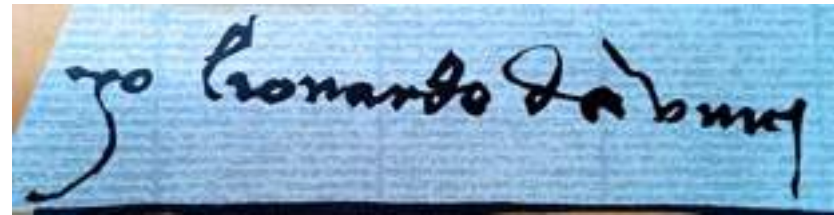
No formal publications; few paintings; 7,000 sheets of drawings - another 10 - 15 thousand missing...

Mona Lisa, Flying Machines - insatiably curious

Codes and Mysteries...



The Leonardo:
curiosity, imagination,
inspiration, action

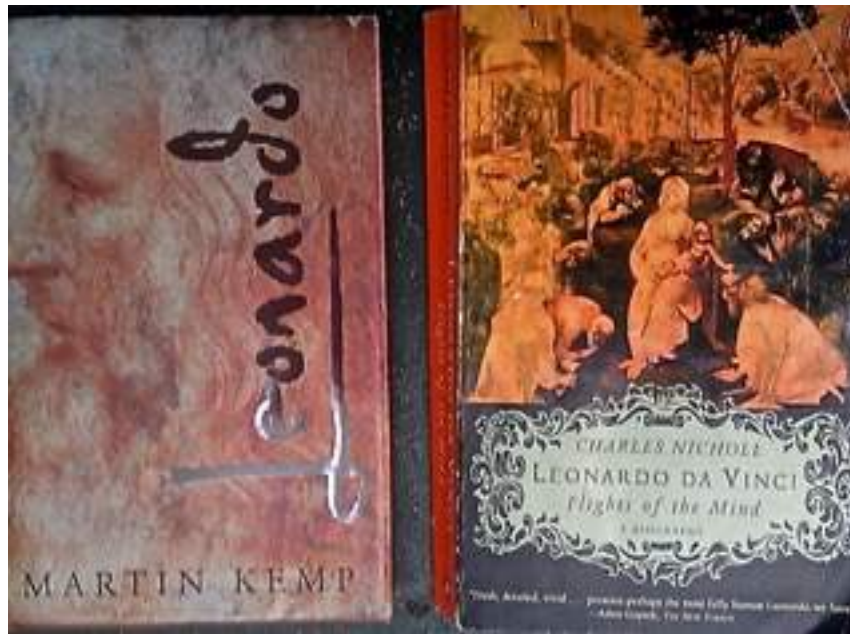


Sources - hundreds of books and sites:

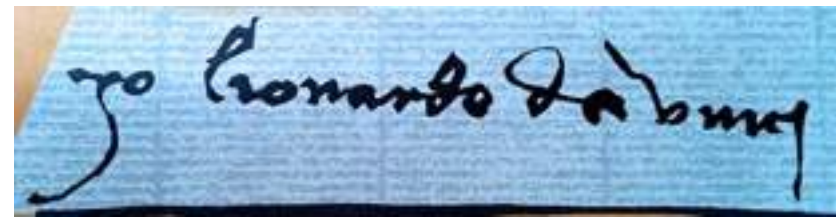
www.universalleonardo.org



Martin Kemp
Leonardo
2004



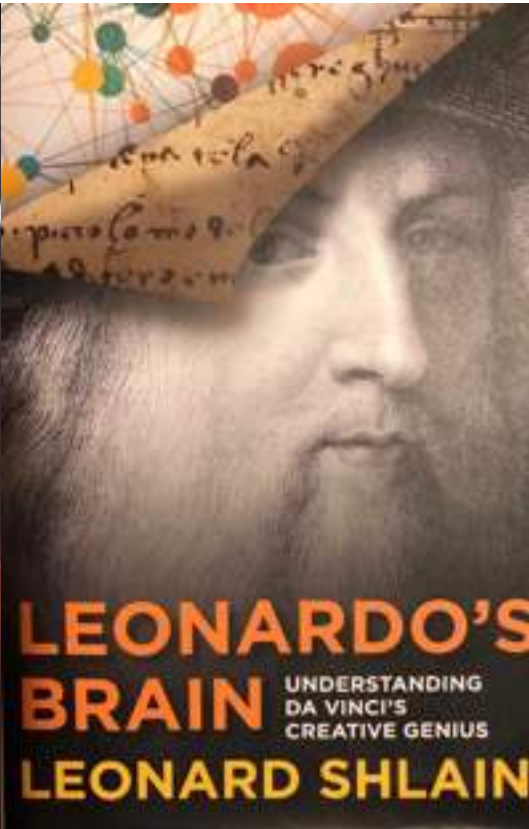
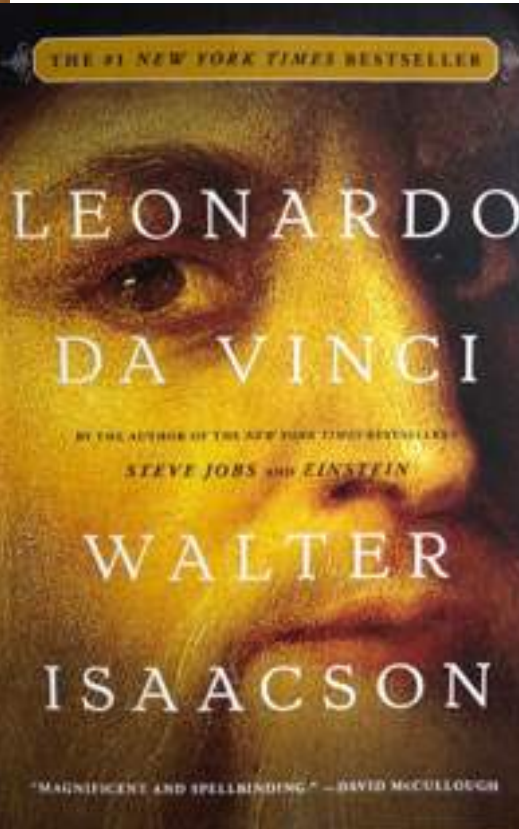
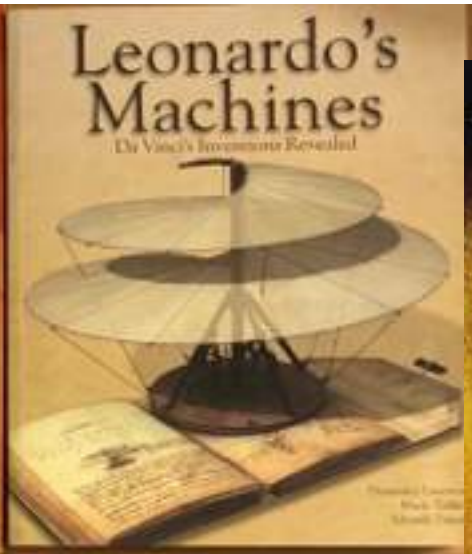
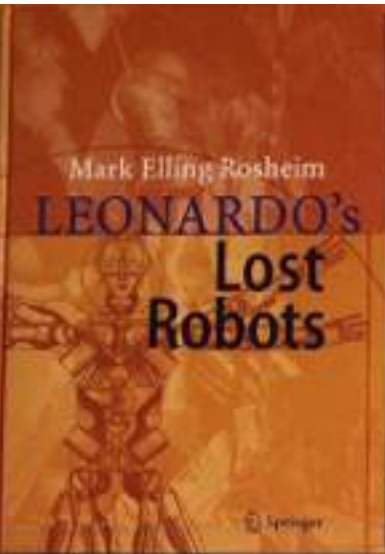
Charles Nicholl
Leonardo da Vinci:
Flights of the Mind
2004



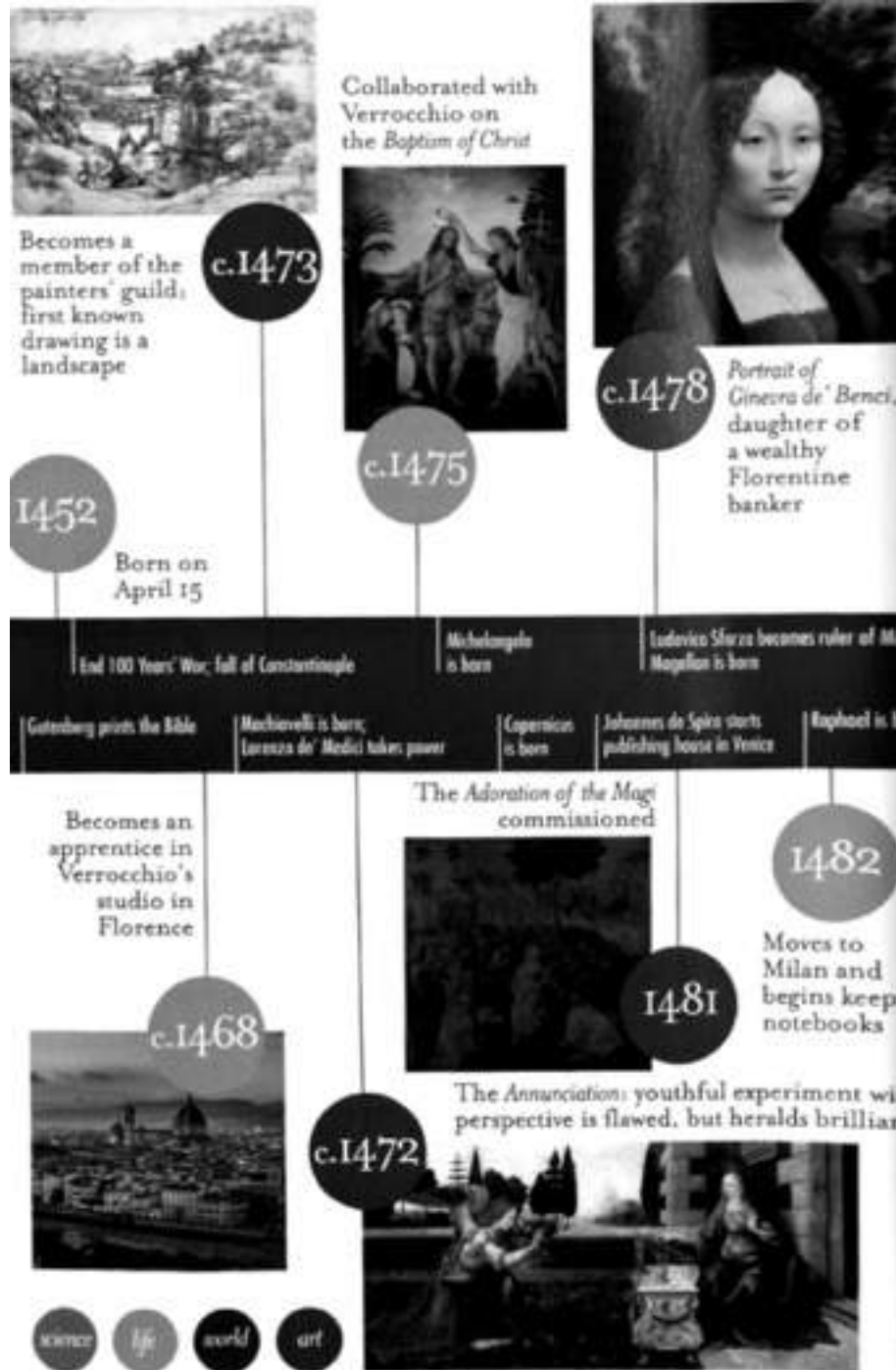


www.leonardo3.net
books, kits, posters,
exhibitions





Time line from Isaacson 2017



Gutenberg and printing press

Machiavelli
Michelangelo
Copernicus
Raphael

Portuguese Explorers, Columbus



Lady with an Ermine; clay model for the horse monument is put on display in Milan



Does the drawings for Pacioli *De divina proportione*

1496

1493



1498



Studies anatomy & architecture

1489

First attempt at a flying machine

<p>Dies of Portugal rounds the southern tip of Africa</p>	<p>Christopher Columbus sails to the New World; Lorenzo de' Medici dies; Rodrigo Borgia becomes Pope Alexander VI</p>	<p>Vasco da Gama finds a sea route to India; Louis XII becomes King of France; Savonarola's Doctrine of the Two Cities; France conquers Milan</p>
<p>Suleyman I, of the Ottoman Empire, is born; Ludovico officially becomes Duke</p>	<p>Savonarola deposes the Medici in Florence; King Charles VIII of France invades Italy</p>	

c.1490



Vitruvian Man; Feast of Paradise is presented for the wedding feast of the duke's nephew; Salai comes to live with Leonardo

1483



Commissioned, along with the de Predis brothers, to paint *Virgin of the Rocks*


Begins *The Last Supper* in the refectory in the convent of Santa Maria delle Grazie

1495




Amerigo Vespucci— America

1499
Leaves Milan



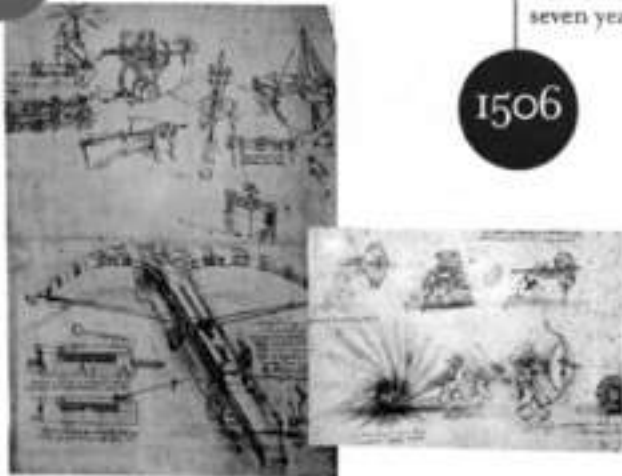
1503
Returns to Florence, begins painting the *Mona Lisa* and works on it for the rest of his life

1505



Studies the flight of birds; second unsuccessful attempt to fly; struggles to paint the *Battle of Anghiari*, a major commission in Florence that is eventually abandoned, unfinished.

1502



Begins to work for Cesare Borgia as military engineer

1506

Returns to Milan, where he remains, on and off, for seven years

1507
Painter and engineer to Louis XII

Michelangelo's statue of David; young Raphael comes to Florence to study with Leonardo and Michelangelo

Leonardo's friend, Amerigo Vespucci, publishes his account of sailing to the New World

The architect Donato Bramante is hired by the pope to rebuild St. Peter's church in Rome

Mercator..maps

c.1508
 Divides his time between Milan and Florence; studies of waterworks; designs the Trivulzio monument; second *Virgin of the Rocks*

1513
 Moves to Rome: the iconic Turin drawing, a possible self-portrait done in the preceding years, often defines our image of Leonardo

1509
 Pursues his studies of anatomy and continues with hydraulics

1514
 Moves to Amboise as a guest of Francis I

1519
 dies on May 2

1519
 Visits Parma and Florence; Plans to drain the Pontine Marshes

Contextual Events:
 Michelangelo finishes painting the Sistine Chapel; Gerardus Mercator, who produces the first map of the world, is born; Medici return to power in Florence
 King Henry VIII becomes king of England
 Titoni is born
 Giovanni de' Medici becomes Pope Leo X
 Andreas Vesalius, who publishes the first accurate book on human anatomy, is born in Brussels
 Martin Luther launches Protestant Reformation
 Francis I becomes king of France

Martin Luther
Protestantism

History - the last 11 Centuries

- 11th C -1000s - Denmark, Norway, England, France; Hildegard
- 12th C -1100s - Crusades, Marco Polo
- 13th C -1200s - Magna Carta; Roger Bacon, Marco Polo
- 14th C-1300s - Plague, England; fighting;
- 15th C-1400s - da Vinci, Gutenberg, Columbus, Copernicus, Vespucci (Americas)**
- 16th C-1500s - Renaissance, Science, Art, Geography, New World, da Vinci, Magellan, Galileo, Paracelsus**
- 17th C-1600s - Colonialism, 13 Colonies, Newton (b. 1642)
- 18th C-1700s - Colonialism, Resources, Slavery, Labor
- 19th C-1800s - Coal, Steam Engine, Electricity, Photography, Industrial Revolution, Civil War
- 20th C-1900s - Manufacturing, Autos, Airplanes, Industry, WWI, WW2, Vietnam War, Ozone, Greenhouse Gases
- 21st C- to 2019 and beyond - Anthropocene, Democracy? **The Leonardo, Planetary Changes, Sustainability?**

Vinci, about 20 miles West of Florence



Born
Caterina and Piero da Vinci
No formal schooling
Walk, run in fields, nature
Sketch, draw
Uncle, grandfather
Farm, work, experiment, do...



Leonardo's first solo painting - about 1474 -
real wings, real trees, real flowers!



Leonardo's
second solo
painting -
20-25 years of
age
About 1475

National Gallery
Washington, D.C.



Mona Lisa - Leo's 'last' painting (but began in 1503)

http://www.leonardo3.net/leonardo/paintings_eng.htm

1503 - 1514 Mona Lisa – La Gioconda

30,3 x 20,9 in (77 x 53 cm) – oil on poplar wood - Musée du Louvre, Paris

The Mona Lisa shows a woman with a thoughtful expression and a slightly smiling mouth. The painting, in oils on poplar wood, measures 30,3 x 20,9 in (77 x 53 cm). It was executed between 1503 and 1506. It is the principal attraction of the Louvre in Paris. The woman is probably Mona Lisa Gherardini, a courtesan from a country family of minor nobility, who lived around the end of the 15th/beginning of the 16th century.

"La Gioconda" is another matter entirely. It is not the painting by Leonardo da Vinci, but something dreamt up by the Press. "La Gioconda" – "the playful woman" – is the symbol of the Louvre, so greatly venerated and sought after that no one really looks closely at the painting. Much has been said about the smile and the unlikely mysteries it is supposed to hide, but these are nothing to do with this superb portrait of a lady.



www.Leonardo3.net



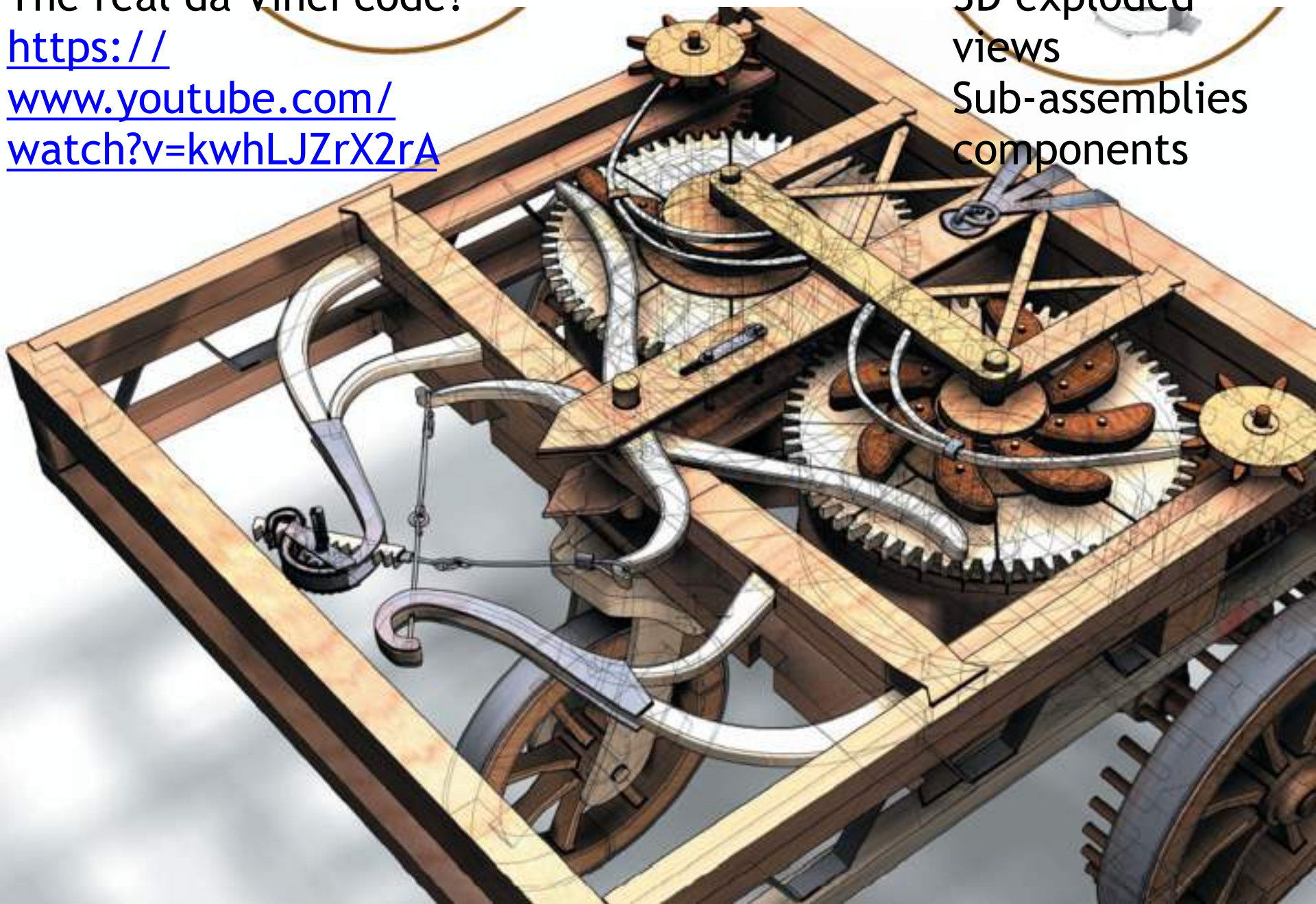


The real da Vinci code!

[https://
www.youtube.com/
watch?v=kwhLJZrX2rA](https://www.youtube.com/watch?v=kwhLJZrX2rA)

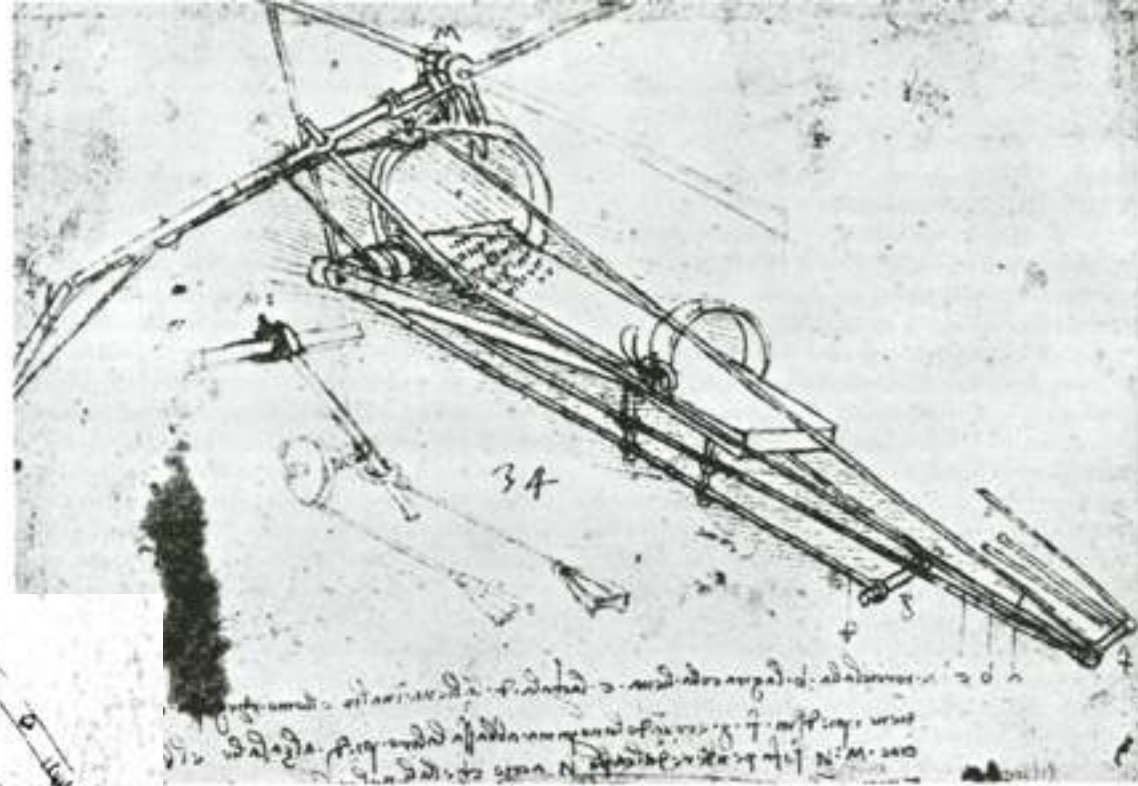
3D exploded
views

Sub-assemblies
components

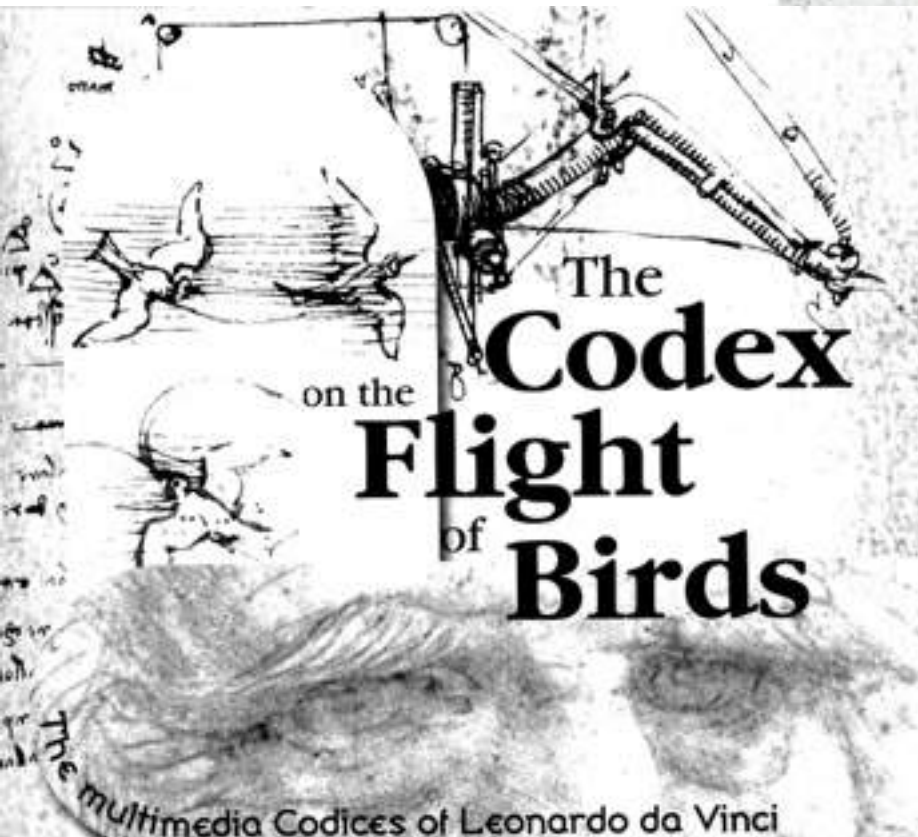


Leonardo did fly!

(mentally)



*There shall be wings!
If the accomplishment be not
for me, 'tis for some other.*



*Once you have tasted flight you will
walk the Earth with your eyes toward
the sky.
For there you have been and there you
long to return.*



Satellite or a
Flight of the
Imagination?
Maps - and
Models in
Amboise



To see Mona Lisa: The Louvre, Paris





1494-1498 The Last Supper

181,1 x 346,4 in (460 x 880 cm) - mural painting with tempera and oils - Santa Maria delle Grazie, Milan

The Last Supper (also known as The Cenacle) is painted in tempera and oils on two preparatory chalk layers over plaster. The painting measures 181,1 x 346,4 in (460 x 880 cm) and was executed between 1494 and 1497. In his letter of 8 February 1498 dedicating his treatise "De divina proportione" to Ludovico the Moor, Luca Pacioli refers to it as already finished. The Cenacle is the greatest of Leonardo's paintings and the only one of his frescoes to have survived. It depicts the scene of the Eucharist at the moment when Christ says, "One of you shall betray me". Judas feels he is being accused. St. James the Great is stunned and throws his arms wide; beside him, St. Philip clutches his hands to his breast. St. Peter leans forward impulsively, while in front of him, Judas steps back, looking guilty. At the far right of the table, from left to right, St. Matthew, St. Thaddeus and St. Simon's agitated gestures express their bewilderment and incredulity. In the center, Christ is portrayed with his arms open on the table. The scene takes place in a virtual area that extends the walls of the supper room. The added virtual light coming from the left corresponds to the real light in the room, which in fact has windows in the left-hand wall.



0% 100%

Vinci, 1452 1460 1470 1480 1490 1500 1510 Amboise, 1519

1483 -1486 The Virgin of the Rocks - Paris

74,6 x 47,2 in (189,5 x 120 cm) – oil on wood - Musée du Louvre, Paris

This painting, in oils on a wooden panel 74,6 x 47,2 in (189,5 x 120 cm), was executed between 1495 and 1508. It is conserved inside the Louvre in Paris. The de Predis brothers commissioned it from Leonardo on 25 April 1483. There are two versions of this picture; the other one is in London.

Differences between this painting and the one in the National Gallery, London:

- in this picture the angel (without wings but with a red cloak) is pointing at the Infant Saint John
- Saint John does not have a cross
- the angel is looking at the Child beside him, while in the other version he is gazing outside the picture
- the Virgin, Child and Saint John have no haloes; in the London painting the haloes are present.
- the colors in this painting are darker than those Leonardo used in the later version






Lost Leonardos? Yes!

Madrid Codex -

lost then found in a dusty library storeroom! - in 1964!



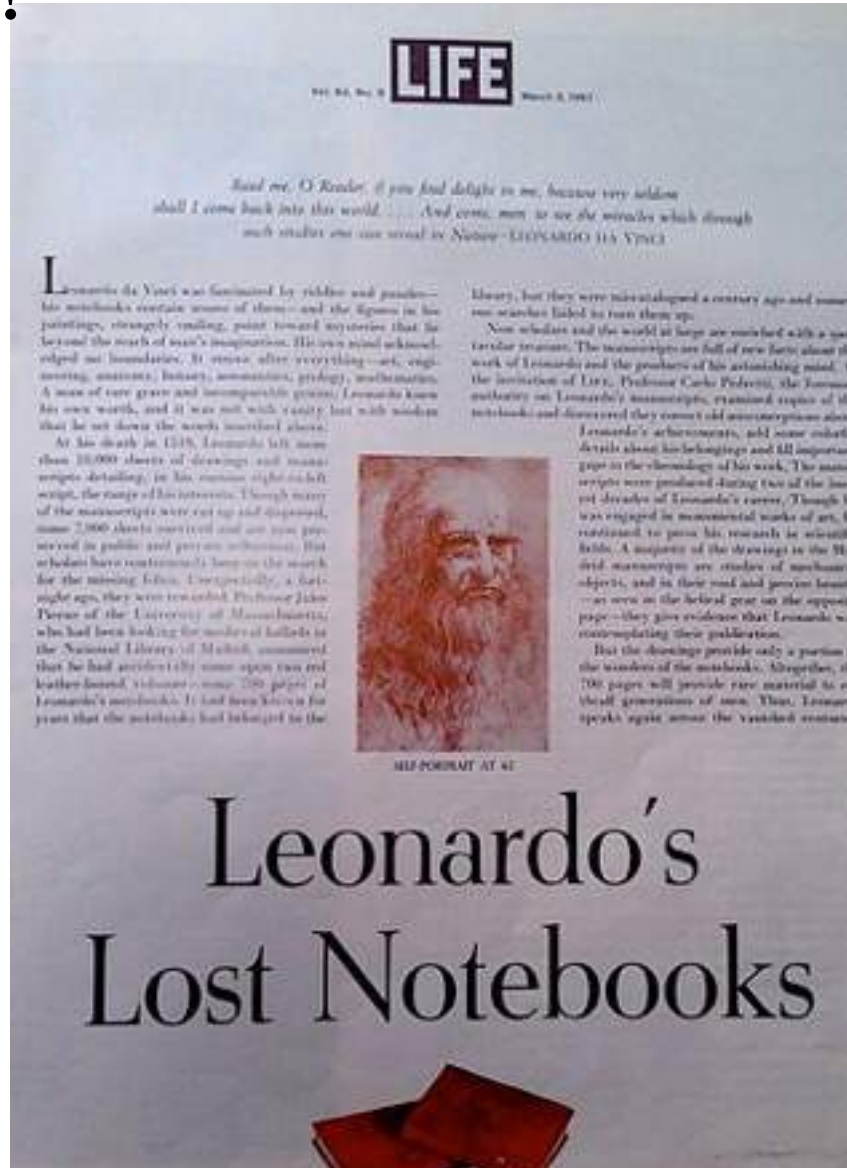
LIFE

Lost Notebooks
of Leonardo da Vinci

IN COLOR The cache of drawings
in which the master set down his ideas and visions

MARCH 3 • 1967 • 350

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LIFE MARCH 3, 1967

Send me, O Reader, if you find delight in me, because very seldom shall I come back into this world. . . . And come, men, to see the wonders which through such studies one can attain to Nature—LEONARDO DA VINCI

Leonardo da Vinci was fascinated by riddles and puzzles—his notebooks contain some of them—and the signs in his paintings, strongly veiling, point toward mysteries that lie beyond the reach of man's imagination. His open mind acknowledged no boundaries. He roamed after everything—art, engineering, anatomy, history, astronomy, physics, mathematics. A man of rare gifts and incomparable genius, Leonardo knew his own worth, and it was not with vanity but with wisdom that he set down the words recorded above.


At his death in 1519, Leonardo left more than 10,000 sheets of drawings and manuscripts detailing, in his various right- and left-hand scripts, the range of his interests. Though many of the manuscripts were cut up and dispersed, some 7,000 sheets survived and are now preserved in public and private collections. But scholars have continuously been on the search for the missing folios. Unexpectedly, a fortnight ago, they were revealed. Professor John Pavesi of the University of Massachusetts, who had been looking for models of ballads in the National Library of Madrid, announced that he had accidentally come upon two red leather-bound volumes—some 700 pages of Leonardo's notebooks. It had been known for years that the notebooks had belonged to the library, but they were miscatalogued a century ago and some-one searched failed to turn them up.

Now scholars and the world at large are enriched with a magnificent treasure. The manuscripts are full of new facts about the work of Leonardo and the products of his astonishing mind. At the invitation of LIFE, Professor Carlo Pedretti, the foremost authority on Leonardo's manuscripts, examined copies of the notebooks and discovered they contain old annotations about Leonardo's achievements, and some colorful details about his belongings and all important gaps in the chronology of his work. The manuscripts were produced during two of the most fertile decades of Leonardo's career. Though he was engaged in monumental works of art, he continued to pour his research in scientific fields. A majority of the drawings in the Madrid manuscripts are studies of mechanical objects, and in their neat and precise beauty—so new in the field of art on the opposite page—they give evidence that Leonardo was contemplating their publication.

But the drawings provide only a portion of the treasures of the notebooks. Altogether, the 700 pages will provide rare material to enrich generations of men. Thus, Leonardo speaks again across the centuries.

SELF-PORTRAIT AT 47

**Leonardo's
Lost Notebooks**



A New Leonardo!
la bella Principessa

National
Geographic
Feb. 2012

Lady with a Secret?

also Salvator Mundi
- most recent.



Leonardo's Words:

From Dante: *He who ... burns his life to waste leaves no more vestige of himself ... than wind-blown smoke, or foam upon the water.*

From Paracelsus: *He who wishes to explore Nature must tread her books with his feet.*

Saper Vedere—knowing how to see.

I am not to be accused of idleness.

Ostinato rigore - persistent rigor.

Intellectual passion drives out sensuality.

I never tire of being useful.

Learning without a liking for it stills the mind and retains nothing that it takes in.

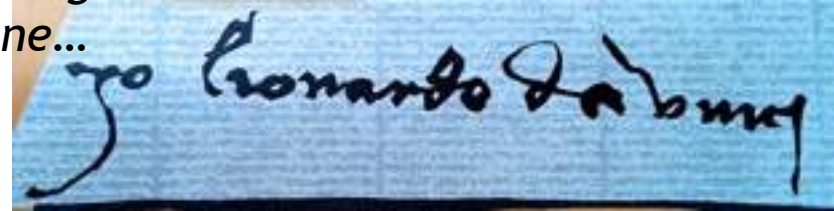
All our knowledge has its origin in our perceptions.

The grandest of all books, I mean the Universe, stands open before our eyes.

Constancy. Not who begins but he who perseveres.

last writing: *The soup is getting cold...*

last words: *...so much undone...*





Leonardo's Lessons:



Question...always...constantly

Be Curious - about everything

Everything is connected

Ostinato rigore - don't be superficial, be persistent, be rigorous

Saper vedere - learn to see to understand

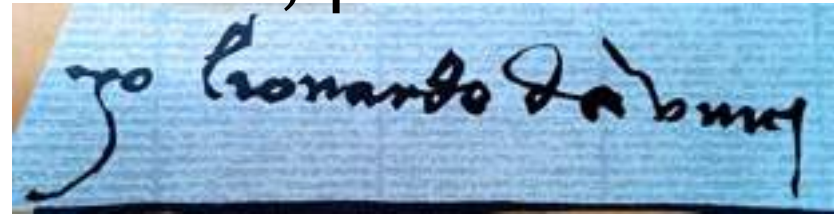
Communicate

Experiment

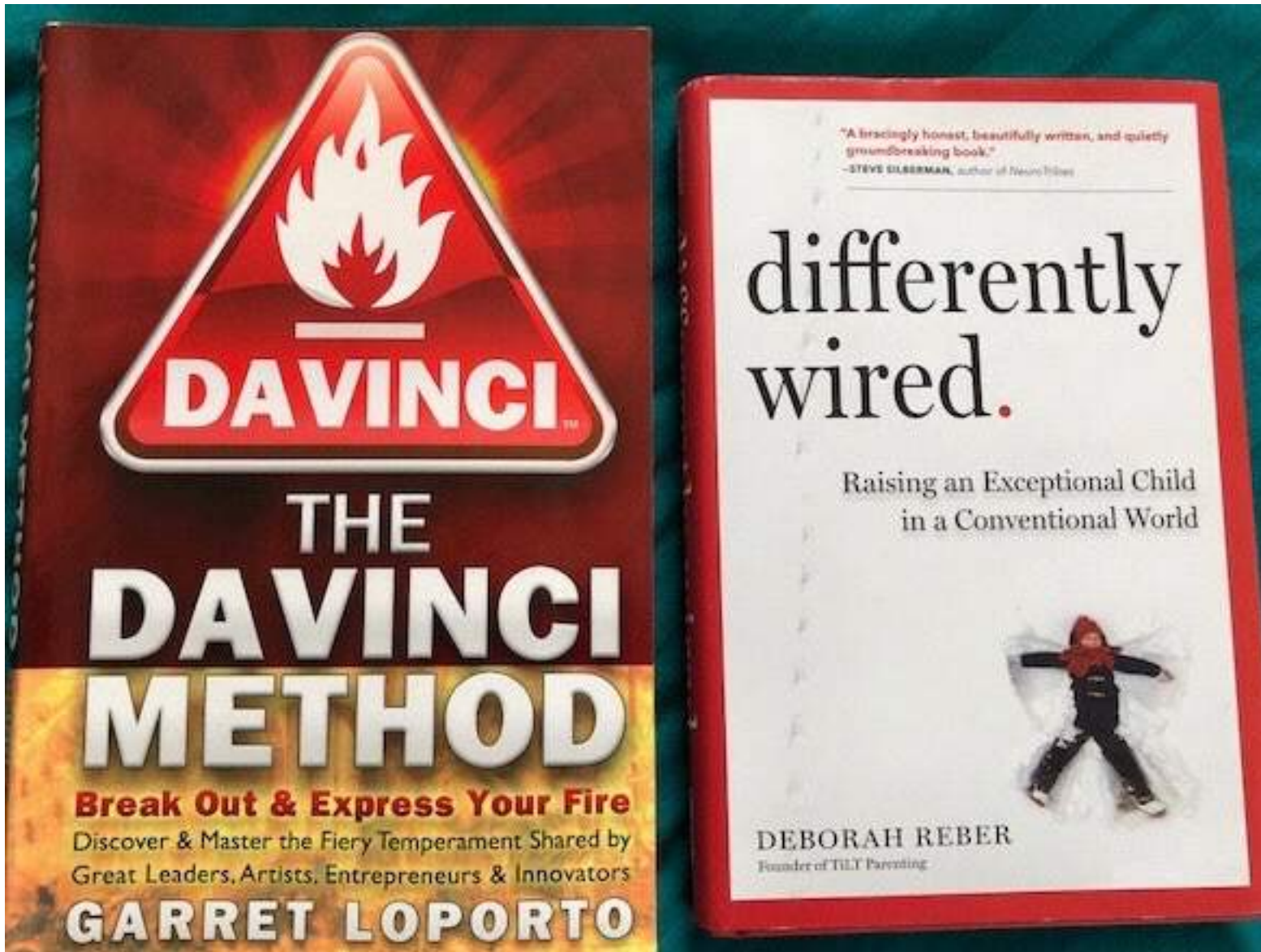


see Isaacson's last six pages...

Yes, Genius, but due to interest, hard work, rigor, perseverance, perfection.



The da Vinci 'Business' - hype vs reasonableness



Some Questions for Leonardo (from kids, visitors):

Should Earth have fewer people?

Would you like to travel in space?

If you could be a different species, which one? Why?

If you could go even further back in time, where to?

Go back and change your own life - what, why, when?

Go back and change society - what, why, when?

Why did you design war machines?

Why did you paint so slowly?

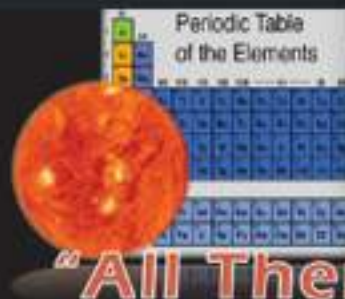


The Leonardo-
for treating
kids as adults -
and treating
adults as adults!



JOE ANDRADE

TOWARD A SUSTAINABLE FUTURE



[JOE WHO?](#) ▾ [POLITICS AND SOCIETY](#) ▾ [SCIENCE AND SOCIETY](#) ▾ [UNIVERSITY](#)

Welcome

– to one man's quest for a sustainable democracy and economy – for a truly sustainable future.

This quest advocates realistic and critical thinking and a political process which minimizes money and rigid ideologies. Our present economic system is based on 18th Century assumptions about the Planet which are no longer valid in this 21st Century. I am working to make those assumptions (now ideologies) clear and evident, and to develop awareness of the need for a new set of operating assumptions valid for the 21st Century.



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[Mother – Erma's Story](#)
[Other](#)

[Protein Solutions \(PSI\)](#)
[Undergraduate](#)

[Politics and Society](#)

[Letters, op-eds, and speeches](#)
[Novels](#)

[The Run – Congress 2012](#)

[Utah CLEAR](#)

[Visual Values](#)

[Science and Society](#)

[Presentations](#)

[Science without Walls](#)

[The Leonardo](#)

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[Kolff, W J](#)

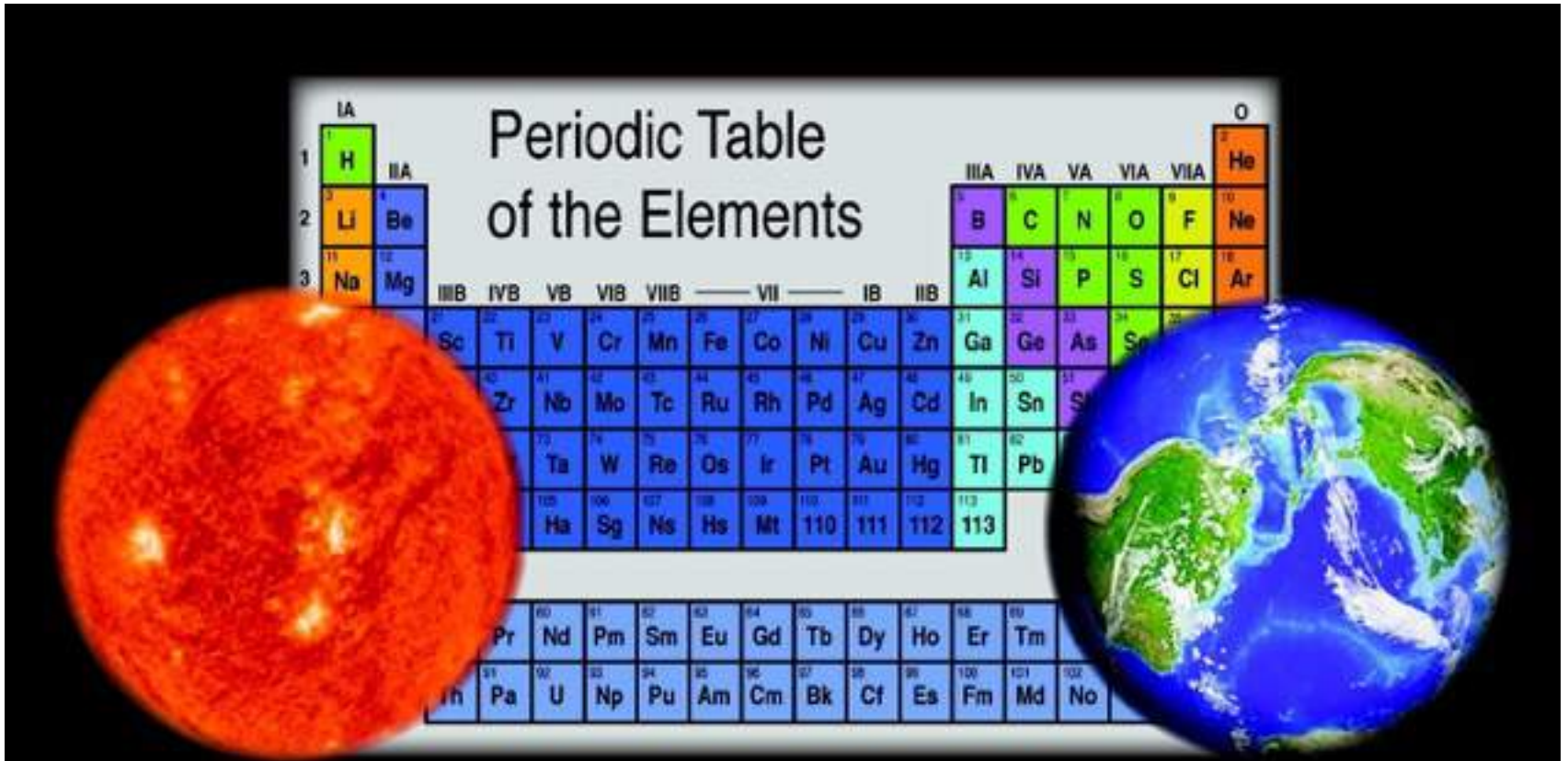
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[Papers, Publications](#)

[Patents](#)

[Proposals, Disclosures](#)

Reality and Experience



All there is