

# Leonardo Da Vinci Renaissance Man and Genius



COMPILED BY HOWIE BAUM

## LEONARDO DA VINCI

Born in 1452, in the village of Anchiano, in Tuscany, Italy, near the town of Vinci, now a museum.

He was an illegitimate son of Ser Piero da Vinci, a successful notary and member of a prestigious family, and a young peasant woman - Caterina di Meo Lippi.



Leonardo lived with his mother during the first years of his life.

By 1457, at the age of five, he lived in the house of his grandfather, Ser Antonio, da Vinci.

Leonardo's father - Piero di Antonio da Vinci married another woman several months after the child's birth and soon moved to Florence.

He served as a notary for the Medici family.

He married 3 more times and had a total of 13 children.



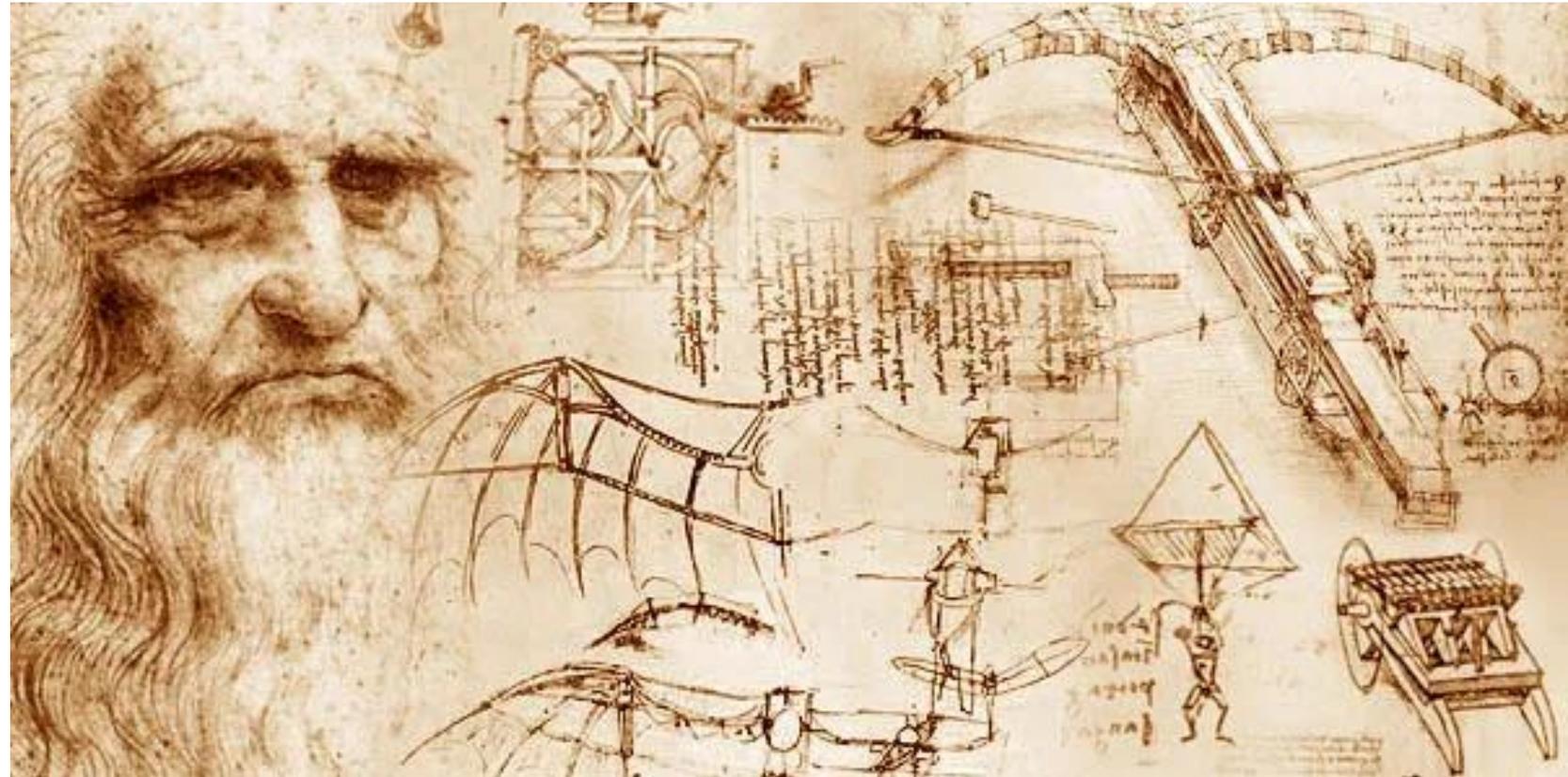


Leonardo's Uncle - Francesco da Vinci (shown at left) adopted him and through this act removed the stigma of his beloved nephew's illegitimate birth.

An artistic genius, a pioneer of medical research, scientist, architect, engineer, and inventor of many machines and devices.

Leonardo da Vinci truly was the ultimate Renaissance man.

He was hundreds of years ahead of his time with his technological ideas and ambitions.





## WORKSHOP APPRENTICE

Leonardo's beginnings as an artist when he was 14, followed the traditional route of indenture in an established master's workshop, from 1467 to 1476.



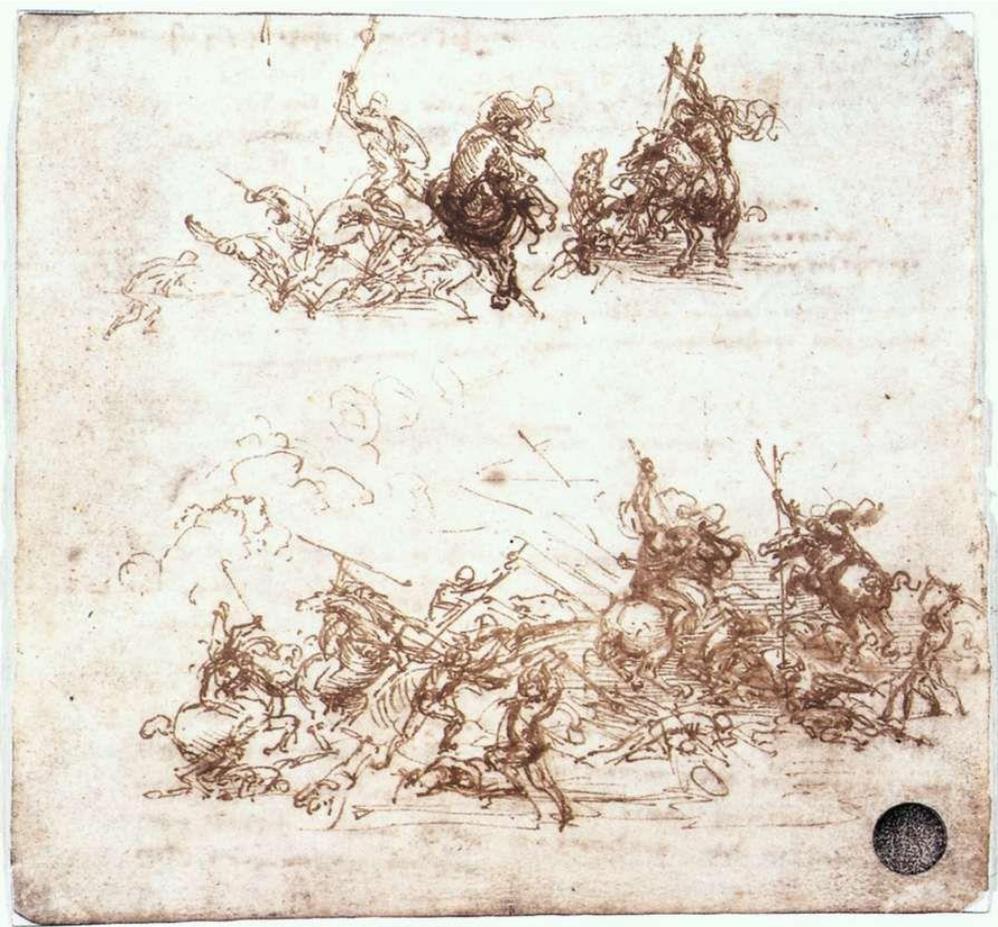
In this case, it was in the studio of **Andrea del Verrochio**, a very successful artist in the orbit of the Medici family who was as accomplished a business man, as he was an artist.

At Verrocchio's busy Florence studio, the young Leonardo likely met such masters as Sandro Botticelli while working beside fellow apprentices Domenico Ghirlandaio, Pietro Perugino, and Lorenzo di Credi.

While working at the studio, he gained knowledge about drafting, metallurgy, plaster casting and carpentry.

He also had exposure to drawing, painting and sculpting.





A preliminary sketch of battles on horseback and on foot, that Leonardo may have made for the painting – The Battle of Anghiari, which he never finished.

**Leonardo da Vinci's total output in painting is really rather small; less than 20 surviving paintings that can be attributed to him.**

**Of course the quality of the paintings is amazing !**



Study for the head of Leda

## **UNFINISHED WORKS**

2 of his most important works—the Battle of Anghiari and the Leda, neither of them completed—have survived only in copies.

Other famous artists – some of his teachers and co-workers at that time, painted wonderful portraits of Leonardo.

- Andrea del Verrocchio
- Sandro Botticelli
- Francesco Botticini
- As well as some by his friends and/or students.



Landscape of the  
Arno Valley

Probably  
Leonardo's first  
landscape drawing

Drawn in 1473





This recently found self-portrait of Leonardo da Vinci, was painted between 1475 and 1480, when he was 23 to 28 years old.

It can be found in Washington, D.C., at the National Gallery of Art.

He was very interested in the study of the art of draperies so, in this portrait you see not only a look out of the window but also a wall with a curved drapery by it.

It is interesting that he is holding a small white dog that he also put into some of his other paintings.

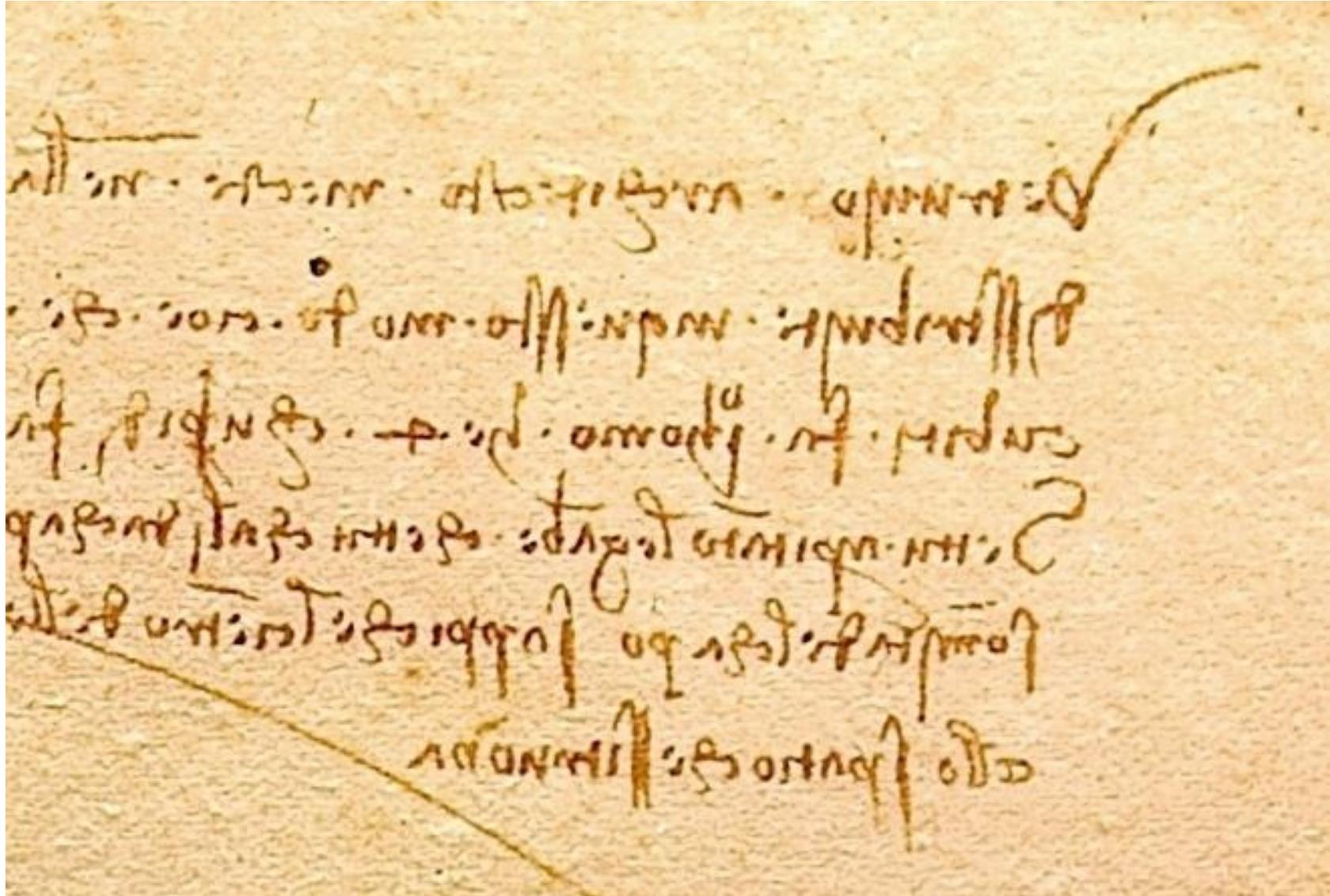
## MYSTERIES OF LEONARDO

He was ambidextrous - he could draw forward and backward with opposing hands simultaneously.

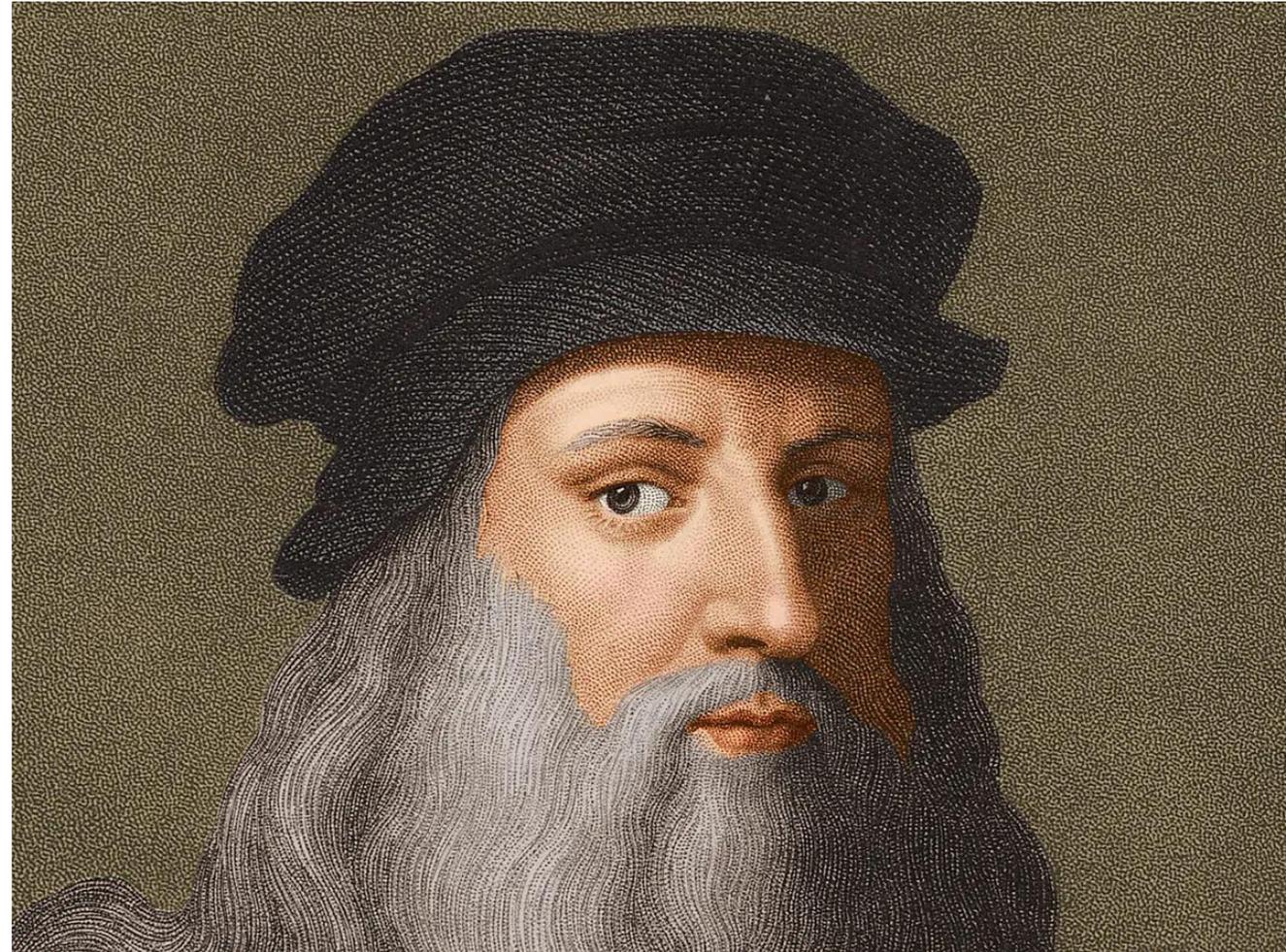
Leonardo da Vinci wrote most of his work from right to left.

The result of this writing was a mirror script, which was difficult to read.

Although unusual, this is a trait shared by many left-handed dyslexic people who aren't consciously aware that they are writing this way.

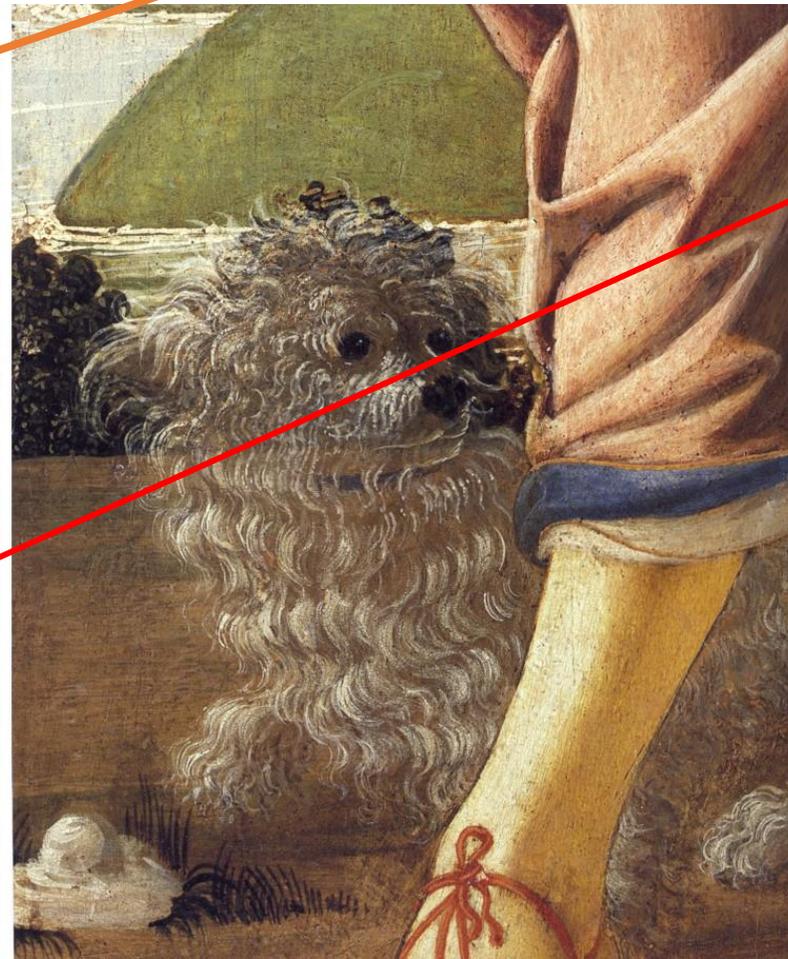


- **He was a strict vegetarian:**
- Leonardo did not care for keeping animals and birds caged. He would buy caged animals just to set them free..
- He started many more projects than he finished – a characteristic now often considered to be related to Attention Deficit Disorder (A.D.D.)
- Later in his life, he regretted "never having completed a single work."
- History records him as being homosexual.



**Tobias and the Angel** is an altar painting, finished around 1470–1475, attributed to the workshop of the Italian Renaissance painter Andrea del Verrocchio.

According to Oxford art historian Martin Kemp, Leonardo da Vinci, who was a member of Verrocchio's studio, was used as the model for Tobias and also may have painted the fish and the fluffy little dog.



## TOBIAS AND THE THREE ANGELS

The little white dog is also at the bottom is a painting by Francesco Botticini, who was a co-worker of Leonardo's Master who he learned to paint from - Andrea del Verrocchio.

The angel on the left was modeled by Leonardo.



# FACIAL IMAGES OF LEONARDO THROUGHOUT HIS LIFE



## **ACCOMPLISHMENTS**

- ❖ Botanist
- ❖ Musician
- ❖ Writer
- ❖ Zoologist
- ❖ Aerodynamics
- ❖ Hydrodynamics
- ❖ Cartography (map making)
- ❖ Philosophy
- ❖ Scientist
- ❖ Mathematician
- ❖ Engineer
- ❖ Inventor
- ❖ Anatomist
- ❖ Painter
- ❖ Sculptor
- ❖ Architect



## **THE ANNUNCIATION**

The Annunciation was painted by him in 1472, when Leonardo was only 20 years old. It is on display at the Uffizi museum, in Florence, Italy.

The Annunciation is the announcement of the Incarnation, that Mary would become pregnant to have Jesus, by the angel Gabriel to Mary (Luke 1:26–38).

The Incarnation means that God assumed a human nature and became a man – Jesus.

## **THE MADONNA OF THE INCARNATION**

It is a Renaissance oil painting by Leonardo da Vinci created around 1472–1478.

The central and centered motif is the young Virgin Mary seated with Baby Jesus on her lap.

Depicted in sumptuous clothes and jewelry, with her left hand, Mary holds a carnation (red, suggesting blood and the Passion).

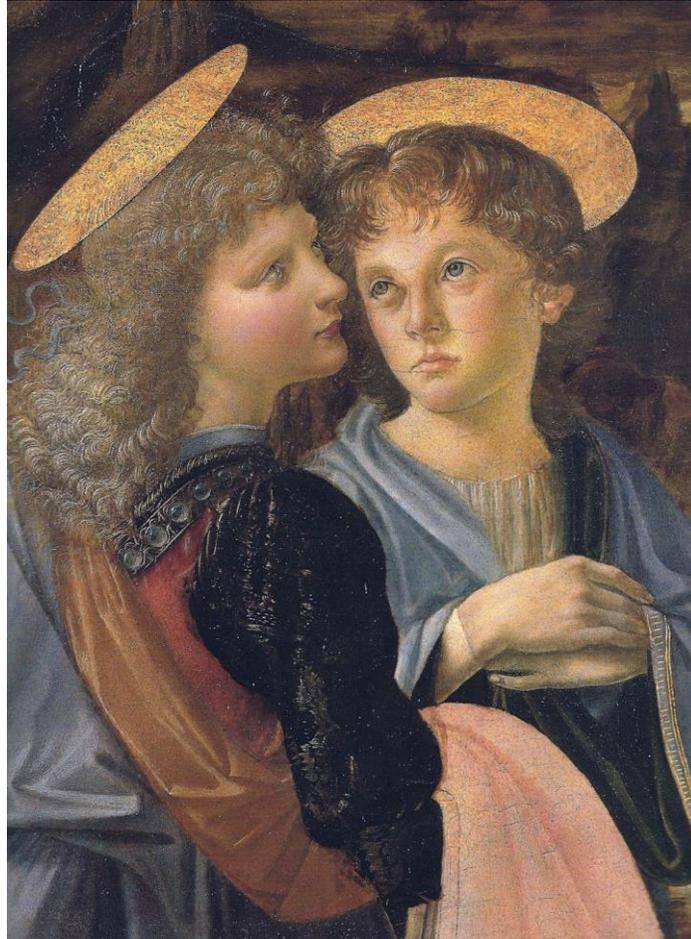
The faces are put into light while all other objects are darker, such as the flower is covered by a shadow.



One of the earliest work of art associated with Leonardo is **The Baptism of Christ** (1474 to 1478), a painting attributed to Verrocchio and on display at the Uffizi Museum.

**Leonardo was one of several apprentices who contributed to the work's creation and he painted the more beautiful of the two angels on the left, as well as the backdrop to the scene.**

The painting of John the Baptist is most likely the work of Sandro Botticelli, and the whole painting reveals a modern spirit unlike any prior Florentine creation.



## **Ginevra de' Benci – painted between 1474 to 1478**

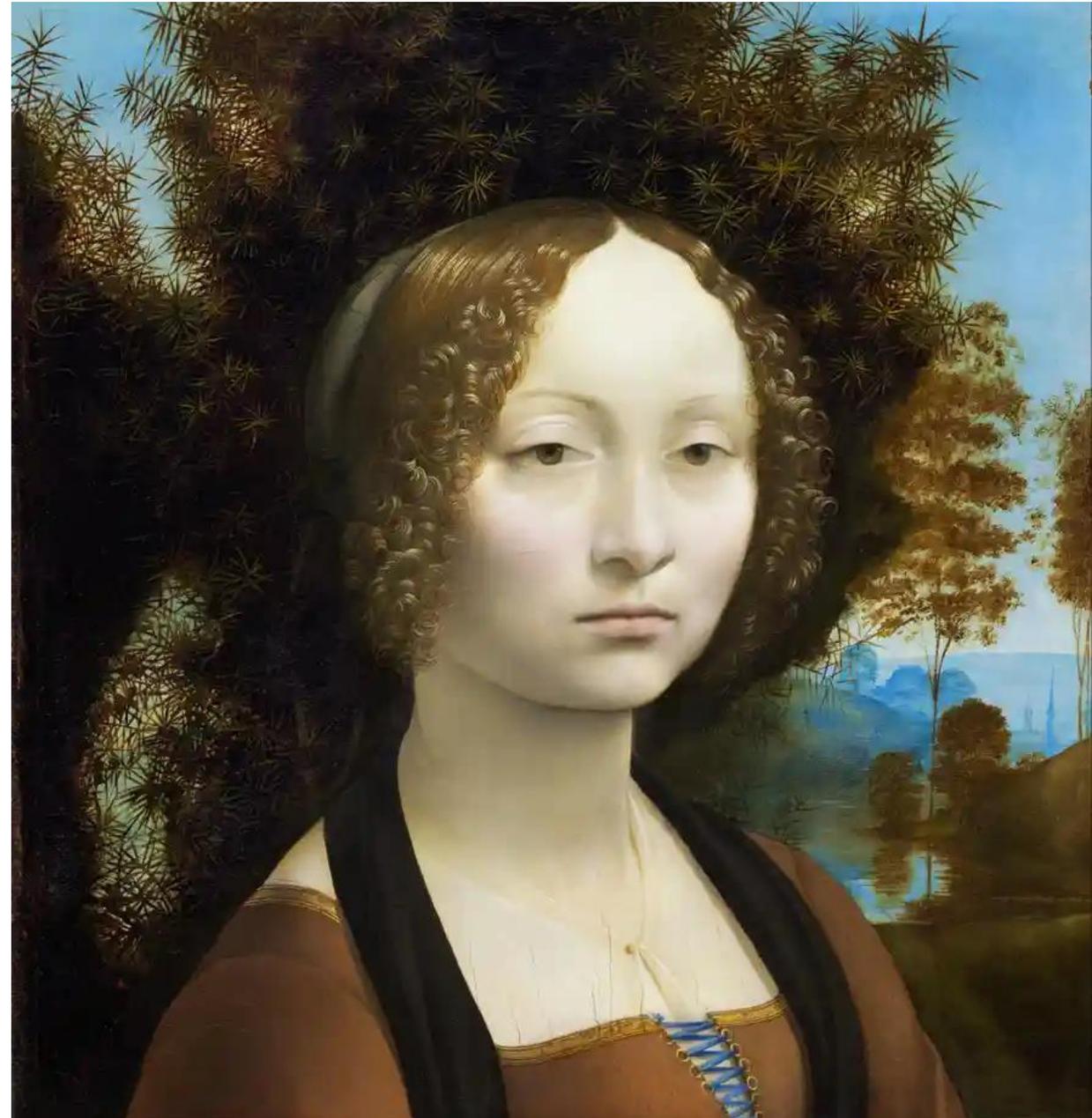
It is in the National Gallery of Art, Washington DC.

The juniper bush that frames this beautiful face like a dark halo.

No other Italian artist at this time, was painting women in this direct, characterful way.

The melancholy mystery of her expression, the shadows that subtly define her features and, most of all, the exquisite realism of her translucent eyes and pink lips

**This was one of Leonardo's most famous pictures in Florence, so when he returned there in the early 1500s, it's no wonder he was commissioned to paint the Mona Lisa.**





## **BENOIS MADONNA**

Madonna and Child with Flowers, otherwise known as the Benois Madonna was started in October 1478.

The preliminary sketches and the painting itself suggest that Leonardo was concentrating on the idea of sight.

The child is thought to be guiding his mother's hands into his central vision.

Designs for Altarpieces of the Virgin  
Adoring the Christ Child

(circa 1482–85). Courtesy of the  
Metropolitan Museum of Art.



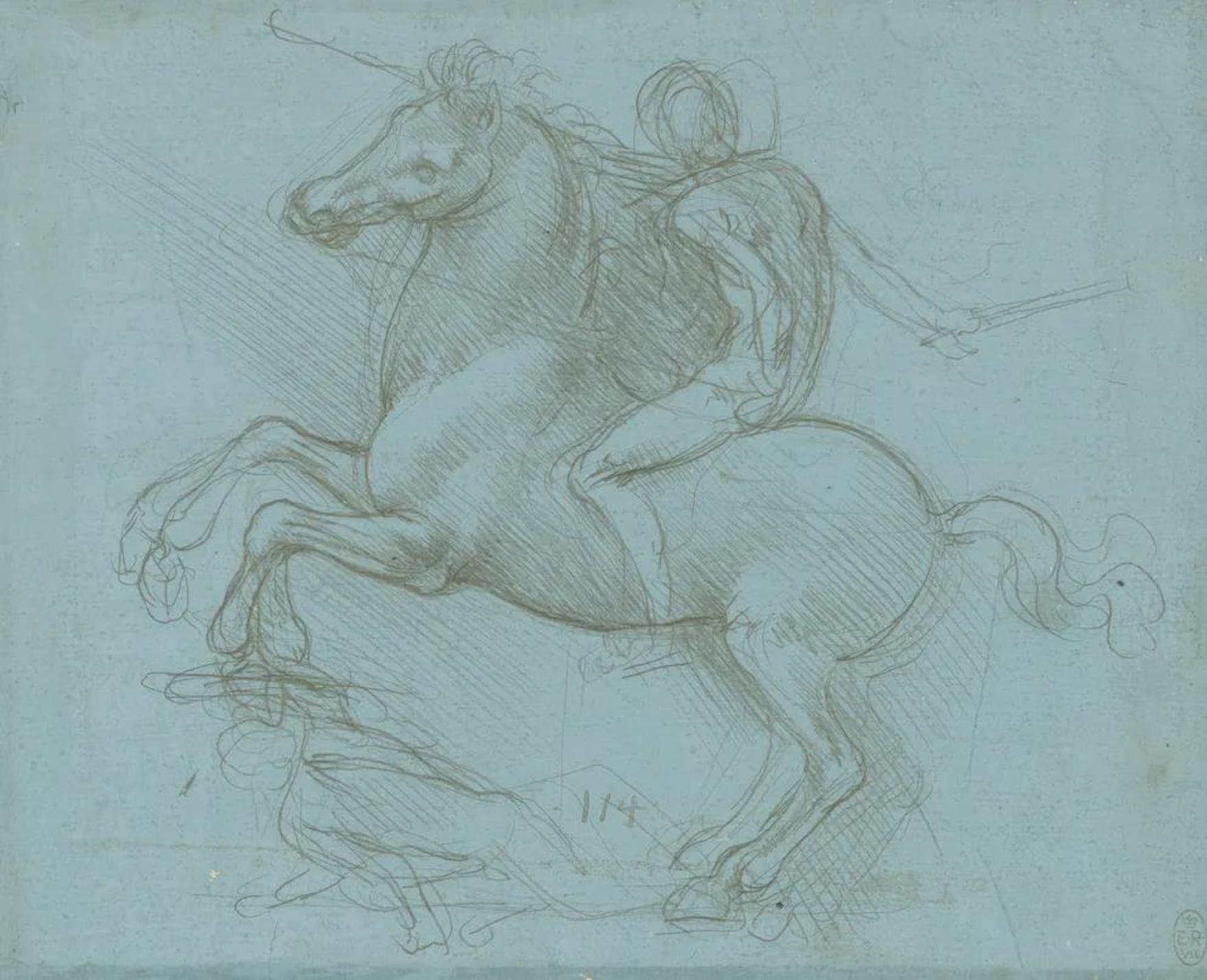
## COURT ARTIST

In 1482, Leonardo sent a letter seeking employment at one of Europe's most lavishly Court, that of Ludovico il Moro Sforza, Duke of Milan.

The Duke appointed Leonardo to his Court and at the age of almost 30.

He worked for the next 20 years, painting his best-known works (the Mona Lisa, The Last Supper, The Madonna of the Rocks, and the enchanting Lady with the Ermine)





While working at the court of the Duke of Milan, he made drawings of a large bronze statue of a horse for the one commission closest to his patron's heart – the celebrating Sforza's father.



## **THE AMERICAN HORSE DESIGN, BASED ON THAT OF LEONARDO**

Charles C. Dent read about the design of Leonardo's horse in a 1977 issue of National Geographic magazine and decided to make one or more.

He established Leonardo da Vinci Horse, Inc. (LDVHI) in 1982.

Its mission was "to create a 24-foot gilded bronze Renaissance-style Horse in the spirit of Leonardo da Vinci and present it to Italy as a gift from the American people."

The American Horse, 24 feet tall, is the second casting of the horse, which was commissioned by philanthropist Frederik Meijer.



The American Horse at the Frederik Meijer Gardens and Sculpture Park in Grand Rapids, Michigan.

## **THE ADORATION OF THE MAGI PAINTED FROM 1478 - 1482**

**It is in the Uffizi museum in  
Florence, Italy.**

**Leonardo left Florence in the  
early 1480s to become court  
artist in Milan, and never  
finished this incredibly  
ambitious painting.**

Paradoxically, its sketchy nature  
reveals some of his defining  
characteristics as a painter –  
slowness, intellectualism,  
hesitance.

In it are ultimately expressions of  
his dream of capturing the whole  
of the cosmos in a painting.





**SAINT JEROME  
PAINTED FROM 1488 TO 1490**

**It is in the Picture Gallery, Vatican Museums**

Everything about this is truly Leonardoesque, including the fact he never got around to finishing it.

The desperate face of the self-tortured saint looks like it has been flayed by an anatomist.

Jerome's taut tendons and exposed arteries and bones are extremely similar to Leonardo's drawings of dissected human heads and necks.

A close examination of the paint surface in the painting of St. Jerome, reveals the presence of Leonardo's fingerprints in the upper left portions of the composition.

Leonardo used his finger to distribute the pigments and to create a soft-focus effect in the sky and landscape.



Detail showing the artist's fingerprints in the upper left area. Photo: © Vatican Museums, all rights reserved



## Man in Bust-Length, Profile View

(circa 1490–94). Courtesy of the Metropolitan Museum of Art.

## MADONNA LITTA

It is a late 15th-century painting, (1481 to 1495) and is in the Hermitage Museum, Saint Petersburg.

It depicts the Virgin Mary breastfeeding the Christ child.

The figures are set in a dark interior with two arched openings, as in Leonardo's earlier Madonna of the Carnation, and a mountainous landscape in aerial perspective can be seen beyond.

In his left hand, Christ holds a goldfinch, which is symbolic of his future Passion.





## **THE VIRGIN OF THE ROCKS (1ST VERSION)** **Painted from 1483 to 1485**

**The painting is in the Louvre museum in Paris**

Here we see another aspect of Leonardo's personality coming through: heresy.

There was no tradition of painting Mary, Jesus and John the Baptist in a rocky grotto. It's his invention.

Although it is in poor condition, every detail has Leonardo's super-sensitive touch.

**THE VIRGIN OF THE ROCKS  
(2ND VERSION) Painted from  
1491 to 1499 AND 1506 to 1508**

It is in the National Gallery, London.

Leonardo's first attempt at this painting was so heretical and odd that he had to paint it all over again.

In this second version, he conforms to orthodoxy by giving John the Baptist a cross to show his premonition of Christ's fate, and removing the angel's finger that pointed at John.

**This is the greatest painting in  
the National Gallery.**





## **STUNNING NEW IMAGES OF A LEONARDO DA VINCI'S 'VIRGIN OF THE ROCKS' HAVE REVEALED UNDER-DRAWINGS OF AN ENTIRELY DIFFERENT COMPOSITION**

The National Gallery of London has released revelatory new images of one of its most beloved masterpieces, Leonardo da Vinci's *The Virgin of the Rocks* (1491–99, 1506–08)

It shows underdrawings beneath the surface of the work that depict an entirely different composition.

The museum has known since 2005 that Leonardo reworked the nearly six-foot tall, oil-on-panel painting, having examined it using infrared reflectography.

Now, thanks to newer technology, these underdrawings can be seen more clearly.

**Head of a Young Woman (Study for  
the Angel in the "Virgin of the  
Rocks"), about 1483-85**

This drawing, *Head of a Young Woman* has been considered by some to be the "most beautiful drawing in the world," bringing together Leonardo's ideal of beauty and convincing naturalism to an astonishing degree.



## **PORTRAIT OF A MUSICIAN** **Painted from 1483 to 1487**

**It is in the Ambrosiana Gallery in Milan**

The eyes have it. Leonardo didn't just paint eyes. He studied them scientifically. In his notebooks there are studies of how we see and anatomical drawings of how the eye is connected to the brain.

The big, brown eyes of this youth are quintessential examples of both his scientific view of human beings, and his incomparably subtle painterly genius.

The youth's lovely curls are also a direct piece of self-expression.



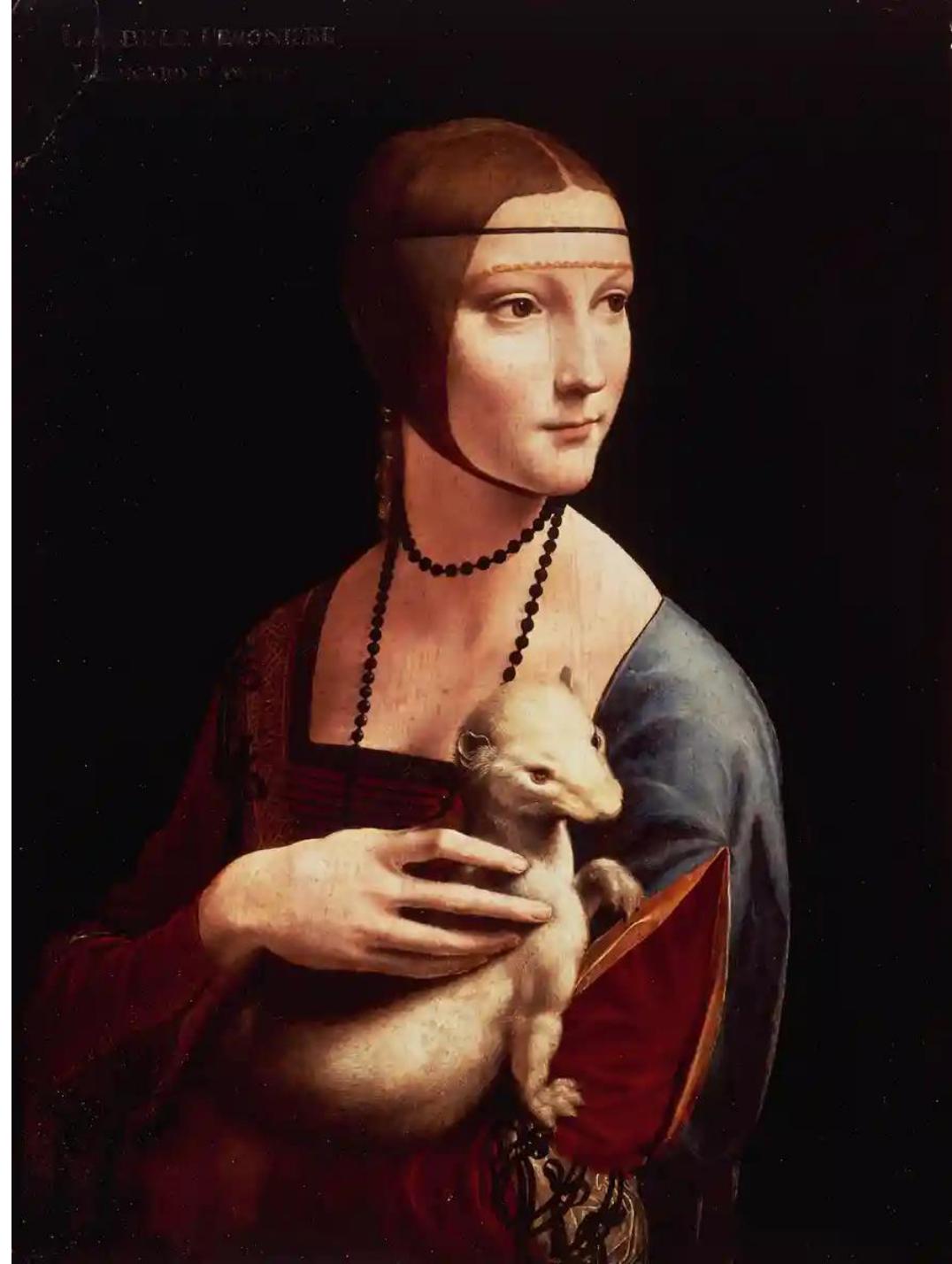
## Portrait of Cecilia Gallerani (The Lady with an Ermine) Painted from 1489 to 1491

It is in the Czartoryskich Museum, Krakow, Poland

Leonardo got on well with women, from Isabella d'Este, ruler of Mantua, to Lisa del Giocondo, model for the Mona Lisa, who he's said to have entertained with musicians and jokes while she posed.

In this portrait of Cecilia Gallerani, the lover of his boss Ludovico Sforza, he conveys her energy and free spirit in a portrait that has no equal in 15th century images of women.

She seems barely contained by the picture, about to walk or run out of the frame. The pet in her arms is just as restless.



# **PORTRAIT OF A WOMAN (LA BELLE FERRONIERE)** **(Painted from 1493 to-94)**

**The painting is in the Louvre, Paris**

More elusive, and a bit more ordinary than Leonardo's other female portraits.

This painting has his subtle feel for character, as well as showing his unique ability to flesh out a face in smooth curves and shaded features.

She's very solid and very alive.

Her mysterious personality – is she a lover of the Duke of Milan, is she communicating disdain? – adds to the painting's understated yet undeniably Leonardoesque sense of human psychology.



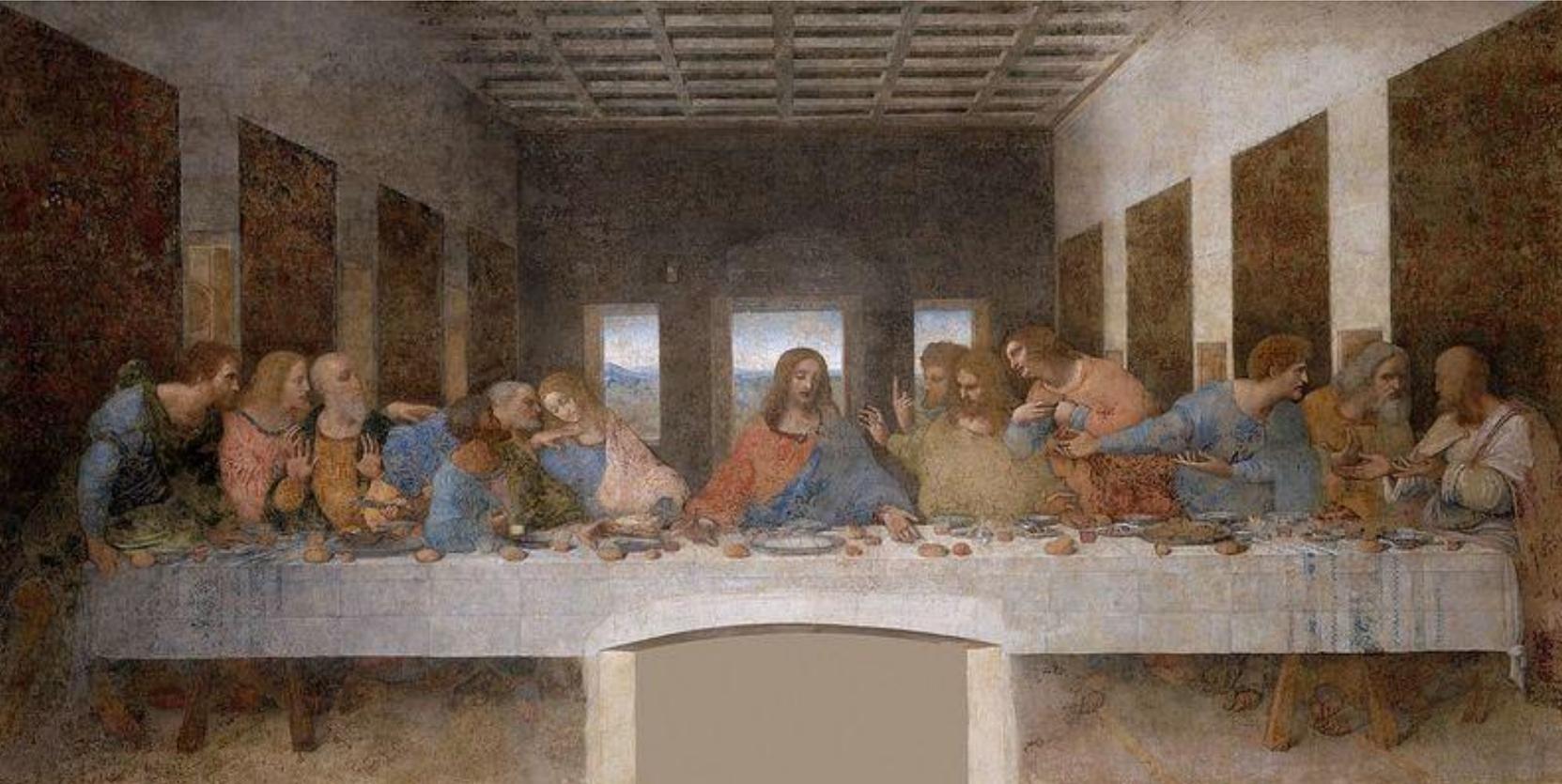
## THE LAST SUPPER

The most documented of all Leonardo's works is also the most damaged and difficult to interpret. (1492 to 1498)

He used experimental methods on a damp wall and it started to fall to pieces the moment he put down his brush.

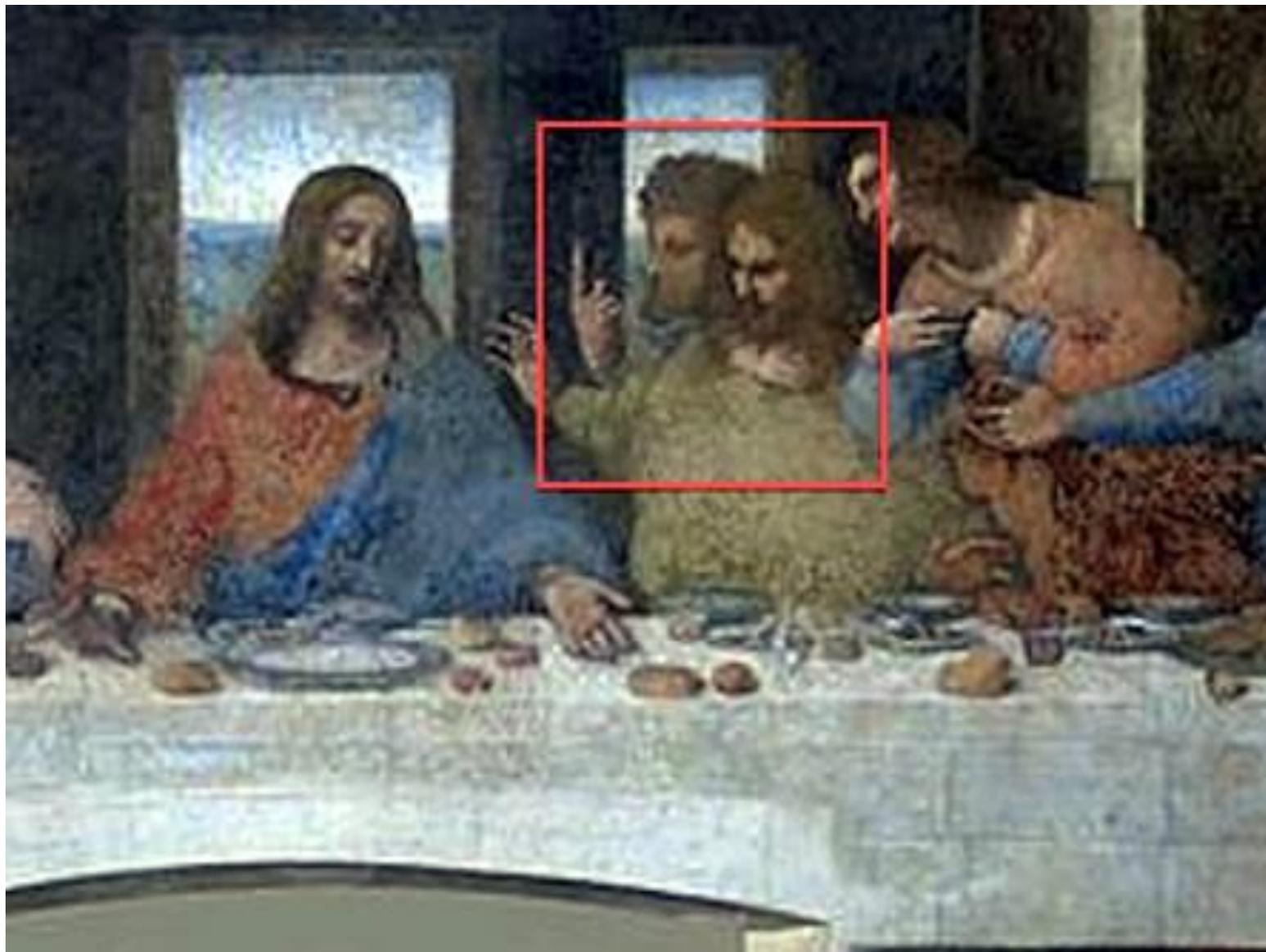
Over the centuries it was repainted and repainted until a radical restoration in the late 20th century tried to remove every bit of added paint to recover the "pure" touch of Leonardo.

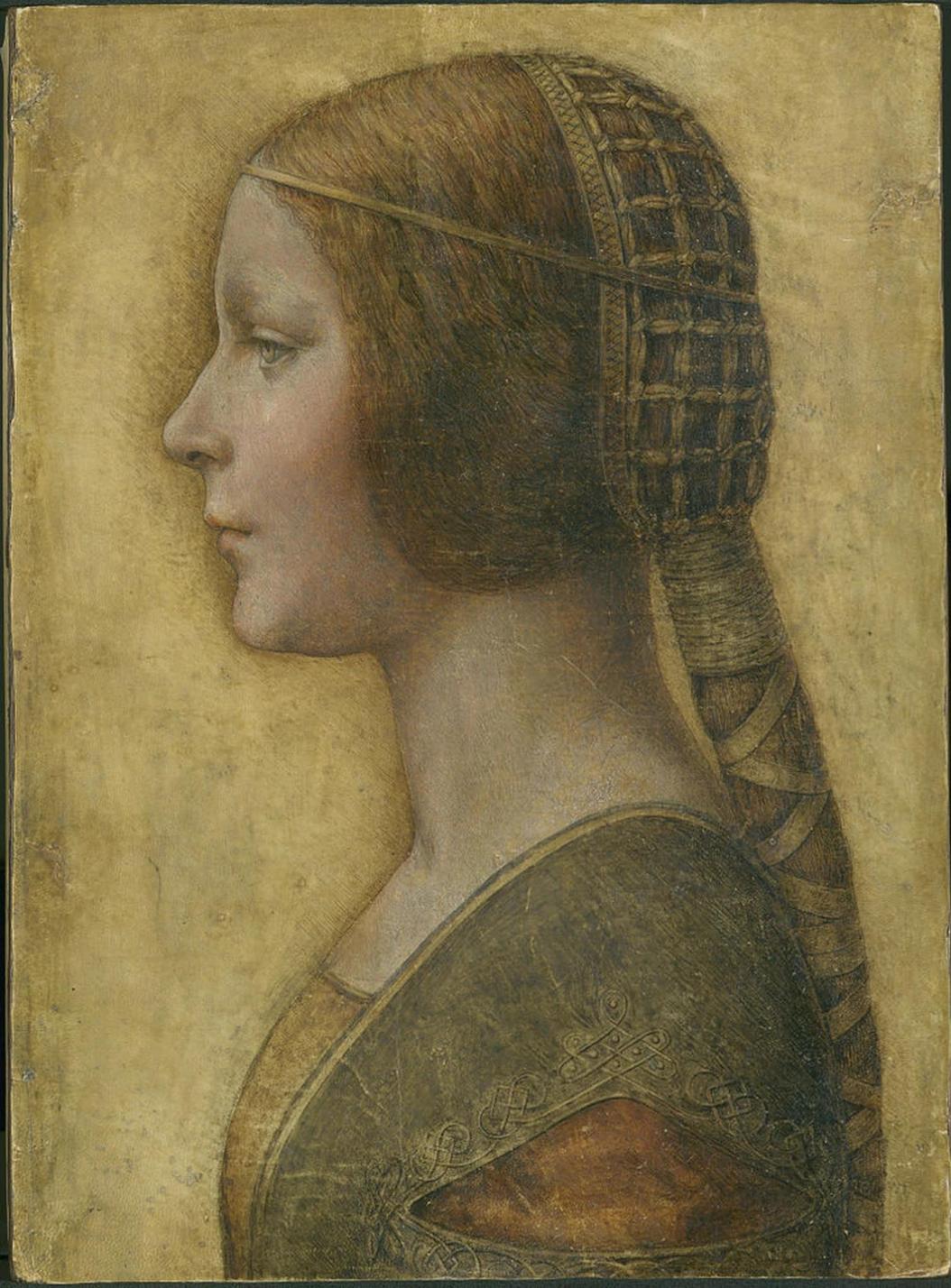
We see betrayal, fear, horror and the certainty of death in a scene that totally reinvented the art of storytelling. Cinema starts here.



Leonardo da Vinci's "The Last Supper" may include two self-portraits of the legendary Renaissance artist, according to a British art expert.

Ross King says the nose, beards and hairstyles of two of the apostles standing to the right of Jesus in the portrait, Thomas and James the Lesser, match a portrait of Leonardo that was made several years after he created his masterpiece.





La Bella Principessa (*The Beautiful Princess*), is a painting of Bianca Sforza in profile, who was mostly likely a young teenager at the time. (1495 to 1496)

## **THE VIRGIN AND CHILD WITH ST ANNE AND ST JOHN THE BAPTIST**

On his return to Florence in 1500, he and his household were guests of the Servite monks at the monastery of Santissima Annunziata and were provided with a workshop.

While there, according to Vasari, Leonardo created the cartoon of The Virgin and Child with St Anne and St John the Baptist, a work that won such admiration that "men and women, young and old" flocked to see it "as if they were attending a great festival."

The drawing is in charcoal and black and white chalk, on 8 sheets of paper glued together.





## **MADONNA OF THE YARNWINDER**

The composition shows the Virgin Mary seated in a landscape with the Christ child, who gazes at a yarnwinder used to collect spun yarn.

The yarn winder serves both as a symbol of Mary's domesticity and as a foreshadowing of the Cross on which Christ was crucified.

The painting's dynamic composition and the implied narrative were highly influential on later High Renaissance depictions of the Madonna and Child by artists such as Raphael and Andrea del Sarto.



## **SALVATOR MUNDI**

Painted from 1499 TO 1510.

Salvator Mundi (Savior of the World) was a painting by Leonardo that was thought to be long gone.

However, in 2005, art historian Robert Simon took the work, believed to be a copy, to be restored by Dianne Dwyer Modestini who, throughout several years of restoration, noticed many similarities to Leonardo's work.

Since it was believed to be a copy, the painting was sold at auction in the mid-1900s for a mere \$61.65.

Today, many experts place the value at a minimum of 200 million US dollars.



## **Saint John the Baptist (1500 onwards)**

**The painting is in the Louvre, Paris**

Leonardo's obsession with John, the patron saint of Florence, reaches its culmination in this homoerotic portrait of the Baptist as a beautiful youth.

The way he raises his finger to heaven seems sacred.

It has a supremely rich, glowing light and ethereal appearance.

# **THE VIRGIN AND CHILD WITH SAINT ANNE (PAINTED AROUND 1501)**

**The painting is in the Louvre, Paris**

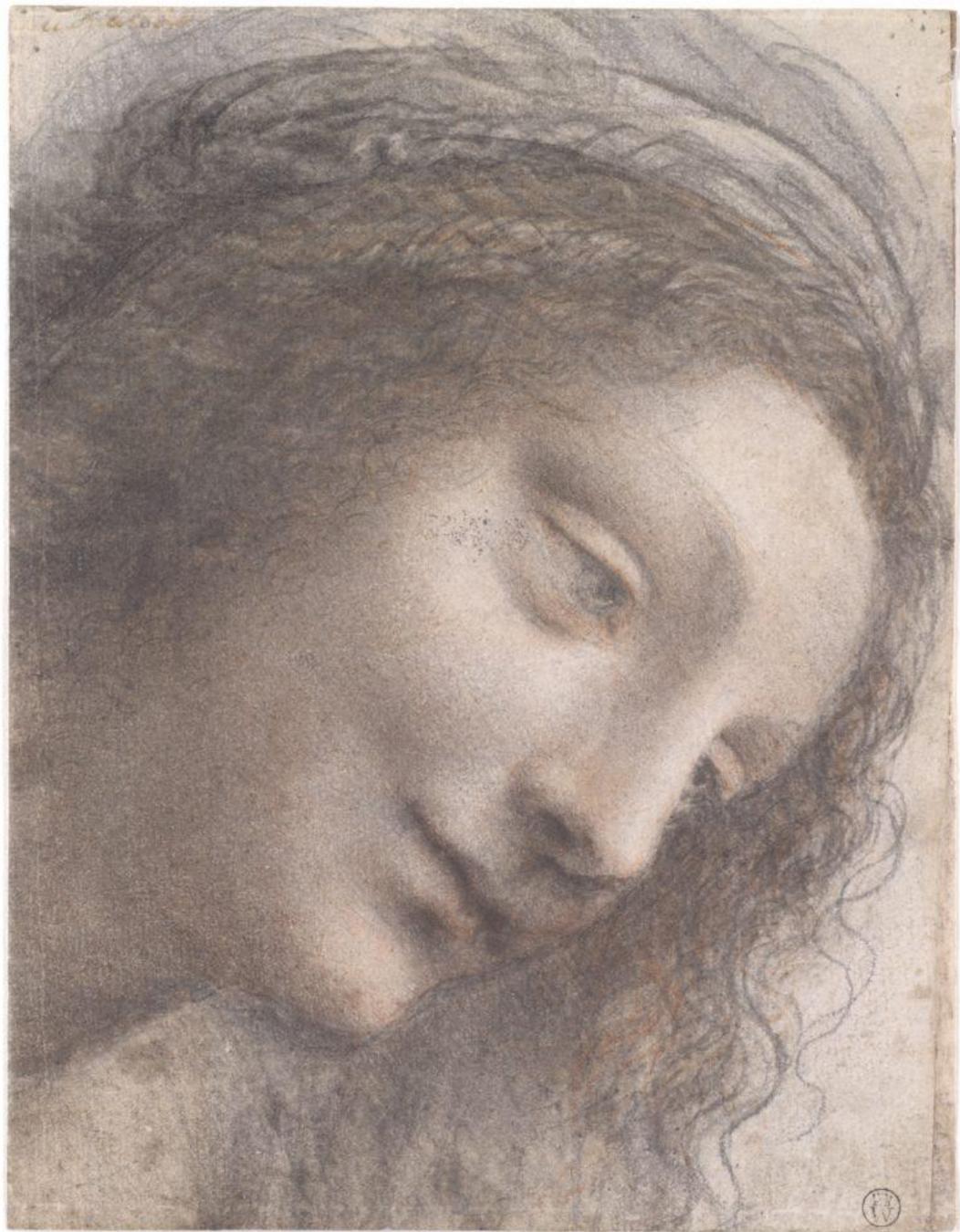
Perhaps Leonardo's greatest painting.

Its blue dream of mountains in the distance is so vast and infinite, while the details of rocks in the foreground are directly rooted in his scientific studies of nature.

The way the landscape encompasses the holy family makes it a painting of the vastness and grandeur of nature and the mystery of life.

There is something profoundly satisfying about its misty air and infinite distances.





The Head of the Virgin in Three-  
Quarter View Facing Right

(1510–13). Courtesy of the  
Metropolitan Museum of Art.

A self-portrait he did, when he was middle aged.





## **MONA LISA**

The painting is painted as oil on wood and was painted sometime between 1502 and 1516, when Leonardo was living in Florence, Italy.

It is owned by the Government of France and is on the wall in the Louvre Museum in Paris, France.

The subject in the painting is said to be the wife of Francesco del Giocondo.

A new theory is that that the scenery behind the Mona Lisa resembles a typical Oriental landscape such as Leonardo might have seen on a Chinese fan in his mother's possession.

Furthermore, it is possible that the Mona Lisa a disguised portrait of himself or his real mother, Caterina.

## MYSTERY OF THE MONA LISA

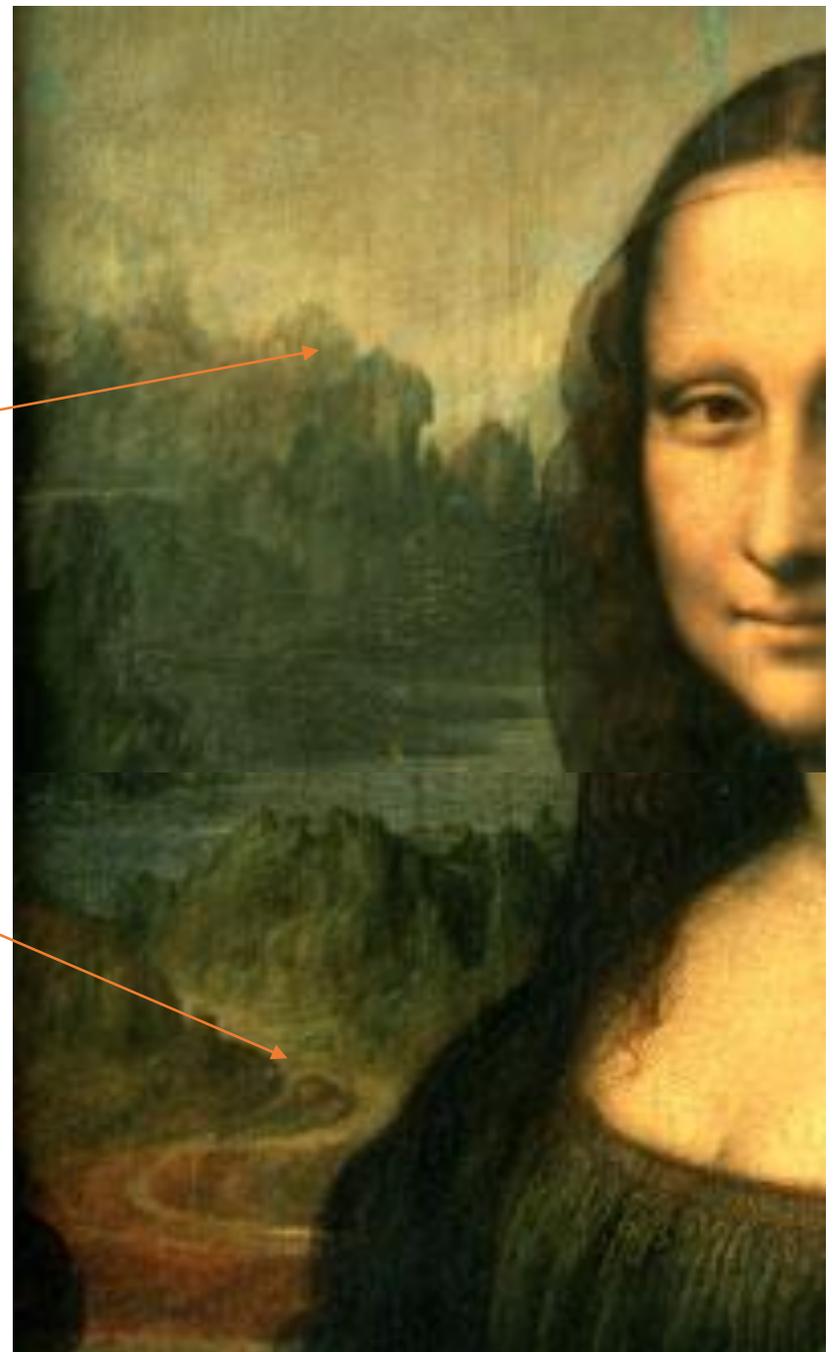
- He recorded in his notebooks the records of model sittings; but records of the Mona Lisa model sitting are nowhere to be found
- Theories are that Leonardo painted himself, and this theory is supported by analyzing the facial features of Leonardo's face and that of the famous painting
- If the features of the face were placed on top of each other, and flipped, they would align perfectly.
- Also, it has been x-rayed and there are 3 different versions of it underneath the current one.



The Mona Lisa reflects Leonardo's idea of the cosmic link connecting humanity and nature, making this painting an enduring record of his vision.

He created a painting style called **Sfumato**, (from Italian sfumare, "to tone down" or "to evaporate like smoke"), in his paintings and drawings - the fine shading that produces soft, imperceptible transitions between colors and tones.

It was used for a highly illusionistic rendering of facial features and for atmospheric effects.



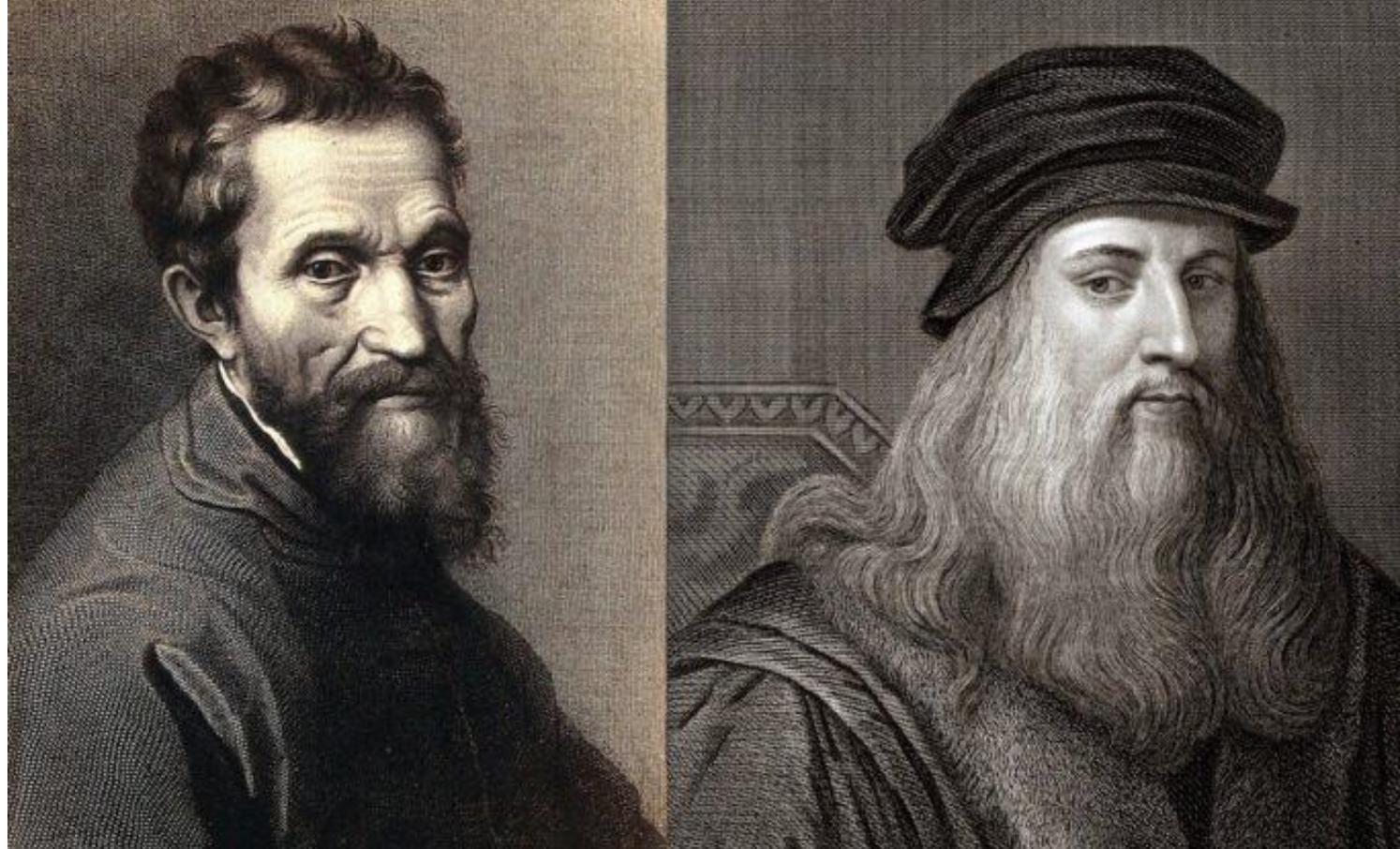


When models sat for their portrait, Leonardo arranged for music to be played to entertain them and told jokes too.

In 1504, Leonardo da Vinci (1452-1519) and Michelangelo Buonarroti (1475-1564) were both working on enormous paintings of battle scenes in the palace of the Florentine government.

**Even though Leonardo was 23 years older, their art skills might have seemed like the ideal opportunity for intellectual collaboration**

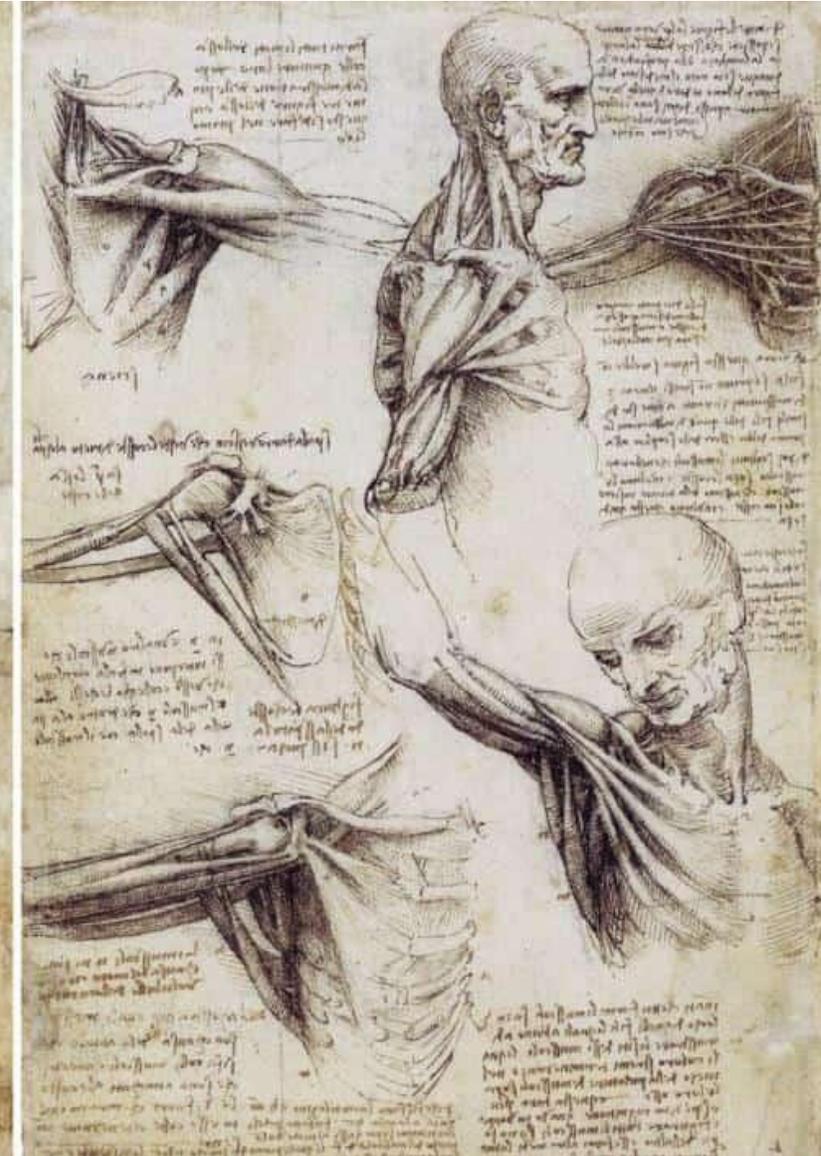
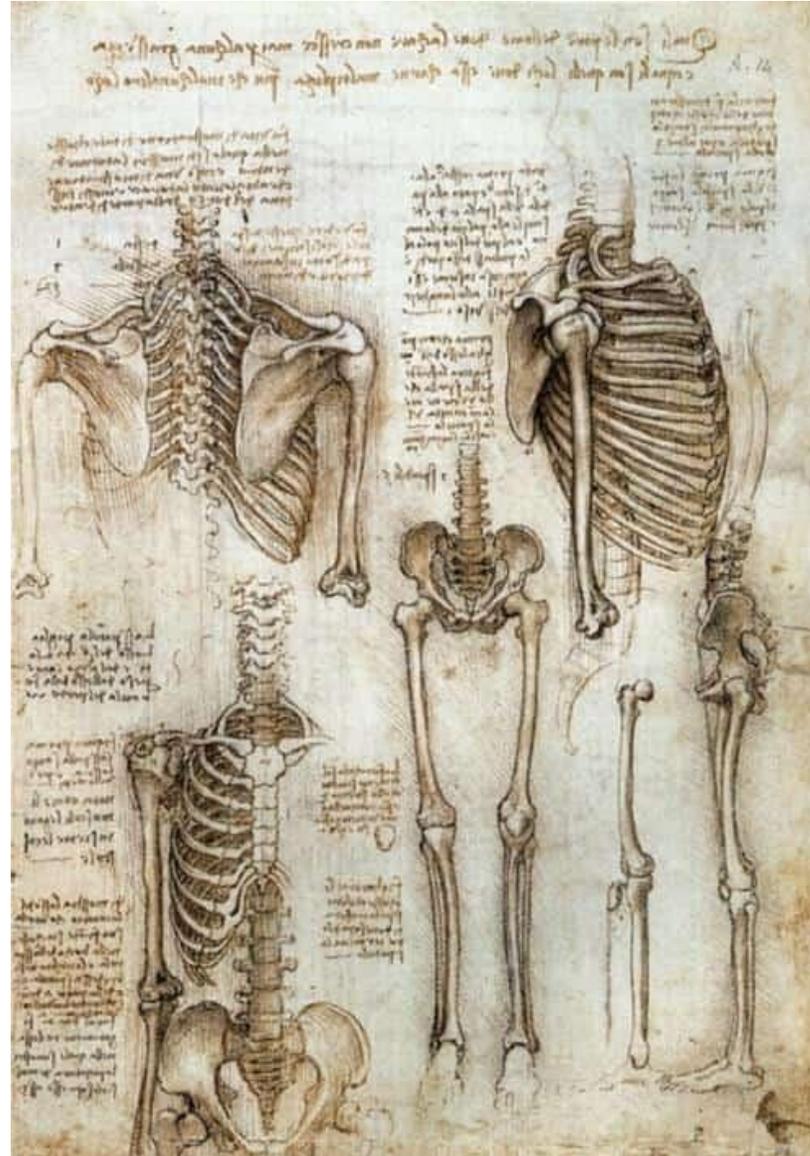
**But there was a mutual, fervent dislike between each other.**



# ANATOMY

The detail with which Leonardo Da Vinci observed, recorded, drew, documented his medical findings set an example for researchers and medical practitioners for centuries to come.

The zealously with which Leonardo Da Vinci searched for answers, set an example for all of the world.

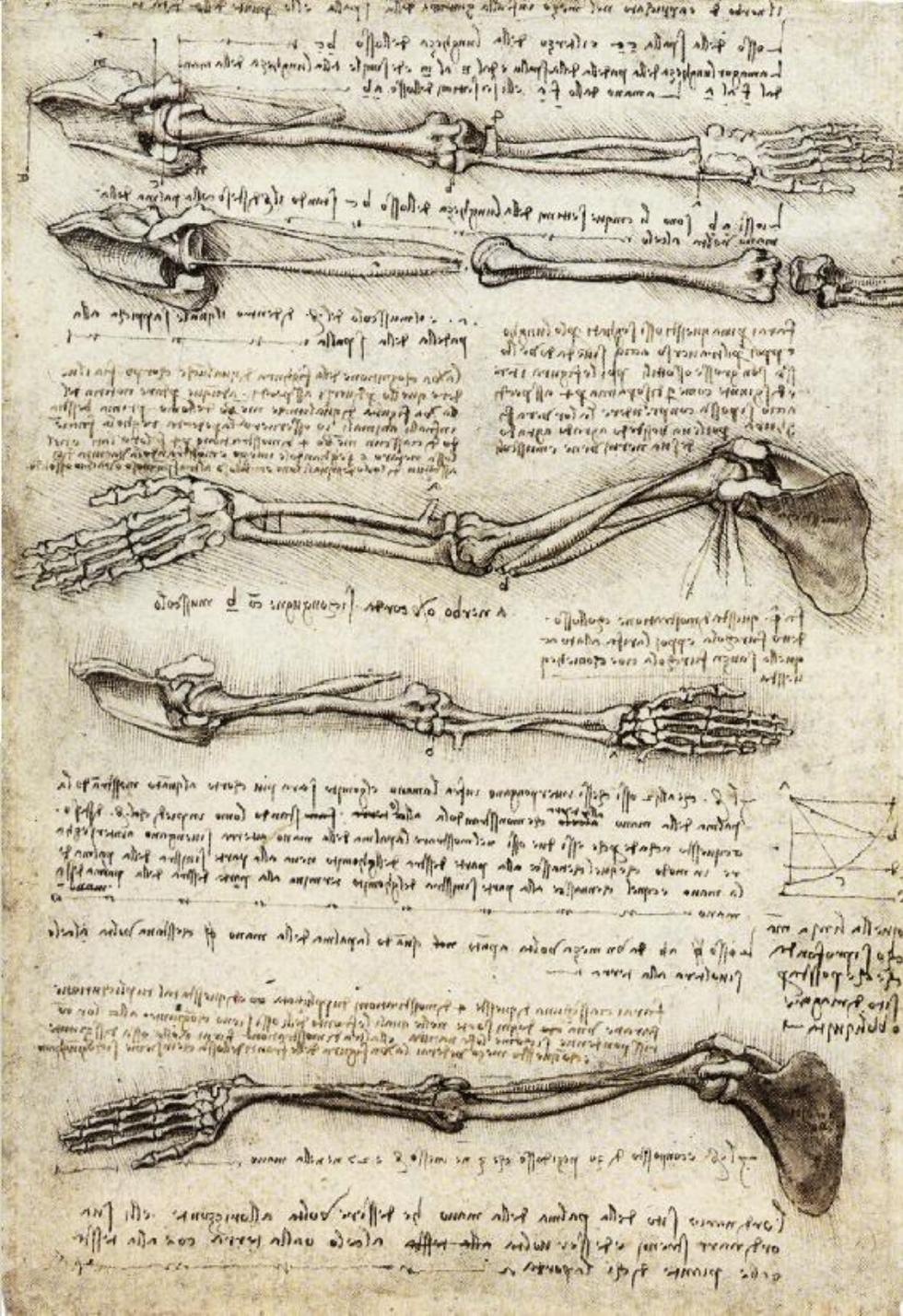


# LEONARDO'S STUDY OF HUMAN BODY ANATOMY

Da Vinci's lifelong obsession with anatomy began at a young age, as part of his apprenticeship with one of the leading artists in Renaissance-era Florence, Andrea del Verrocchio.

To achieve this, he dissected many bodies and filled his notebooks with drawings of muscles, bones, and tendons.

Soon, the pupil had surpassed the master, and da Vinci was drawing and painting stunningly accurate depictions of the human body.





## **PARACHUTE**

He designed one of the first parachutes, in which a pyramid made of wooden poles and covered in cloth slowed descent to the ground.

As he noted, it allowed people to leap from any height without injury.

A man named Adrian Nichols made a test model of it in 2000 and it was successful !

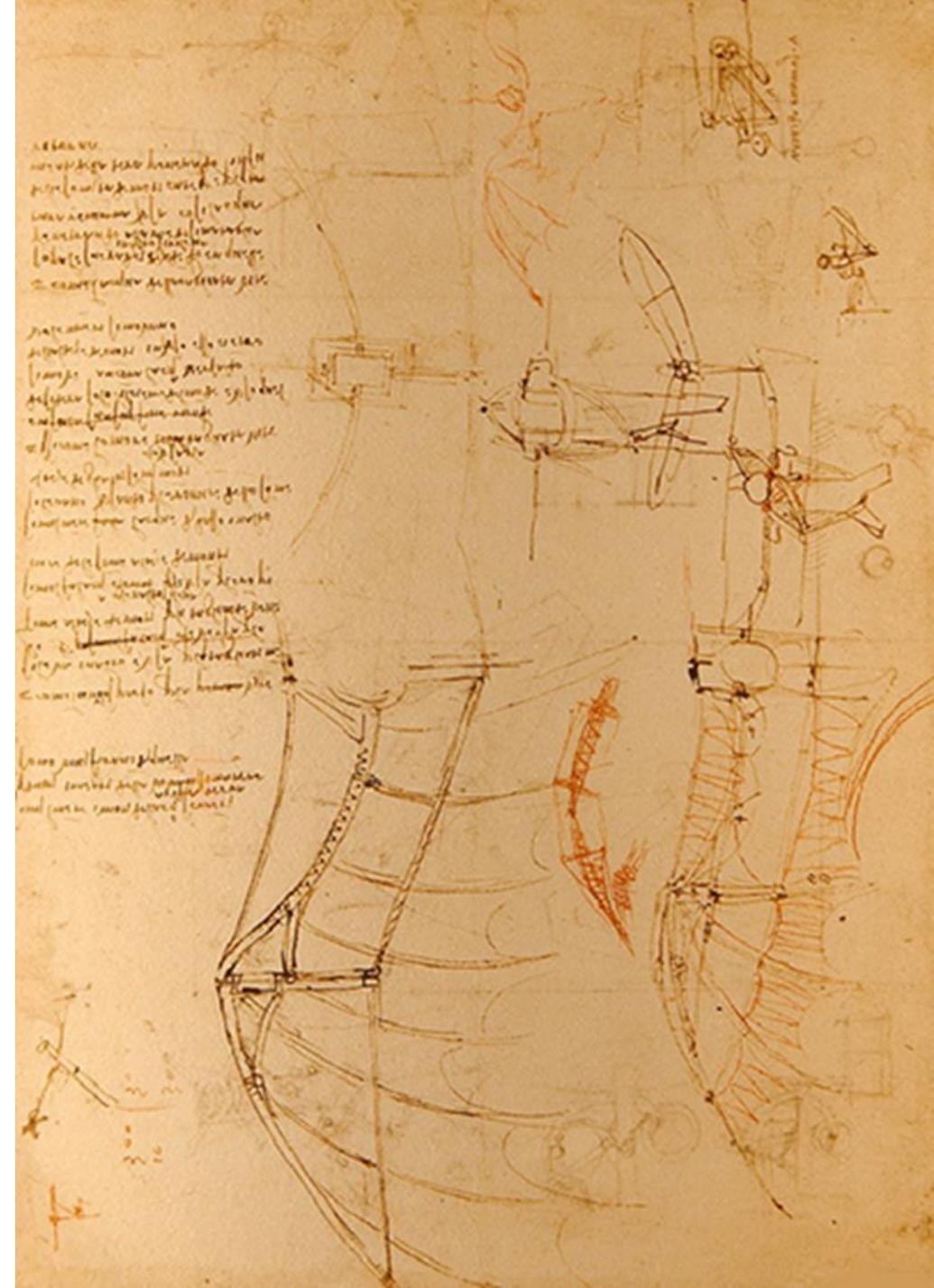
It wasn't just human anatomy and physiology that inspired da Vinci.

He used his deep study of birds and bats to devise a flying machine, or Ornithopter, in which a person would be strapped into a set of wooden wings that they would be able to flap to keep aloft.

Da Vinci never built a working model, however.

Da Vinci wrote extensive studies on the problem of gravity for human flight.

He left behind designs for several human gliders, and his work influenced the later study of aerodynamics.



## HIS GREAT INVENTIONS AND IDEAS

Leonardo drew and wrote out ideas, filling 20,000 pages of notes which are still studied today.

His work is not only creative and original, but revolutionary.

His detailed sketches and notes are all in the renowned *Codex Atlanticus*.



The flying machine (or the 'ornithopter') was basically envisioned as a wooden frame with two extending wings that amounted **to a wingspan of more than 33 ft.**

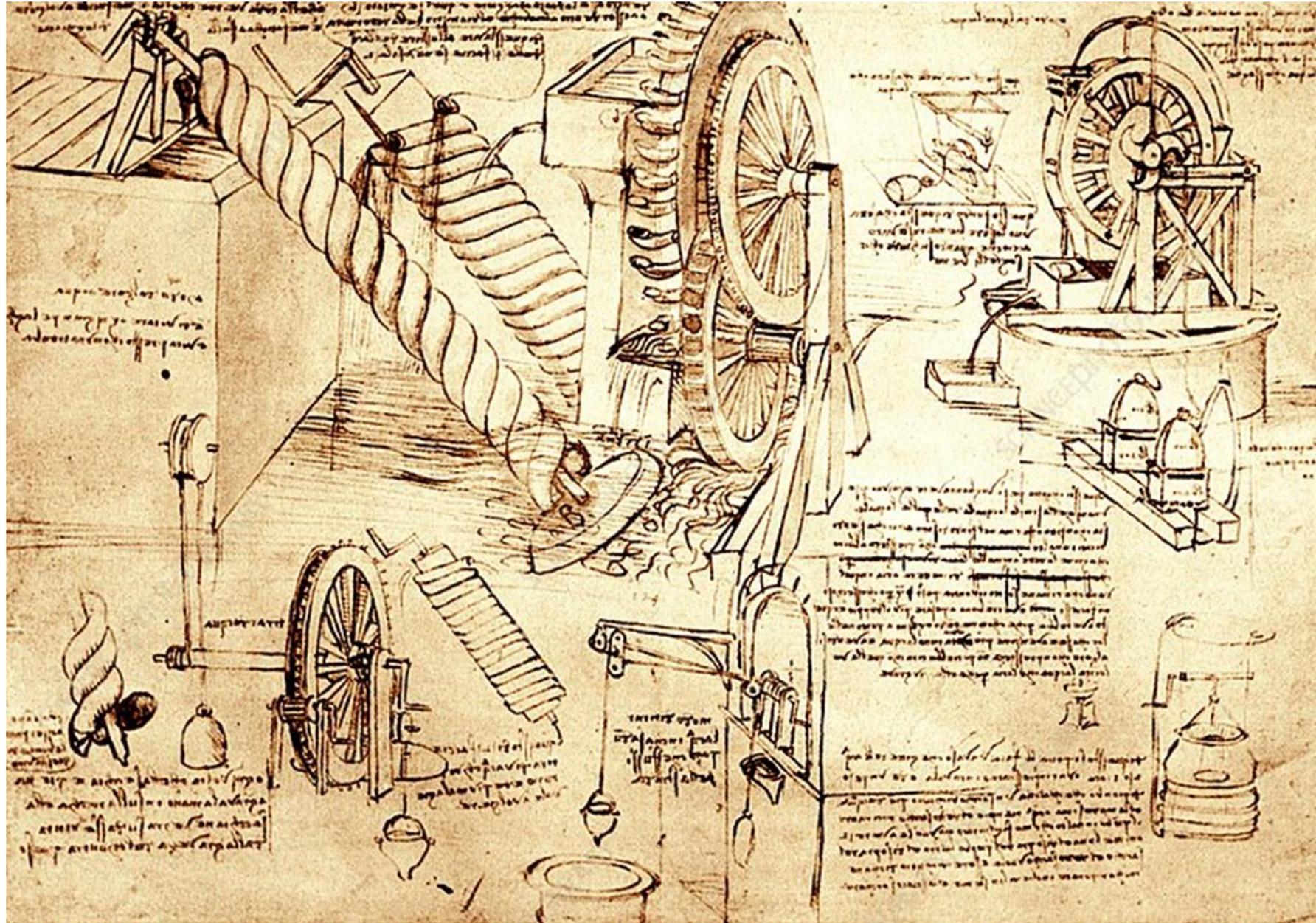
This core frame was to be built from lightweight yet sturdy pine wood while being draped in raw silk to add to the 'feathery' equation.



# WATER LIFTING DEVICES

The Water Lifting Devices sketch is one of the most detailed of Da Vinci's surviving technical sketches.

There is a huge amount of detail on the page and the accompanying notes make it clear that this was one of Da Vinci's deepest studies.

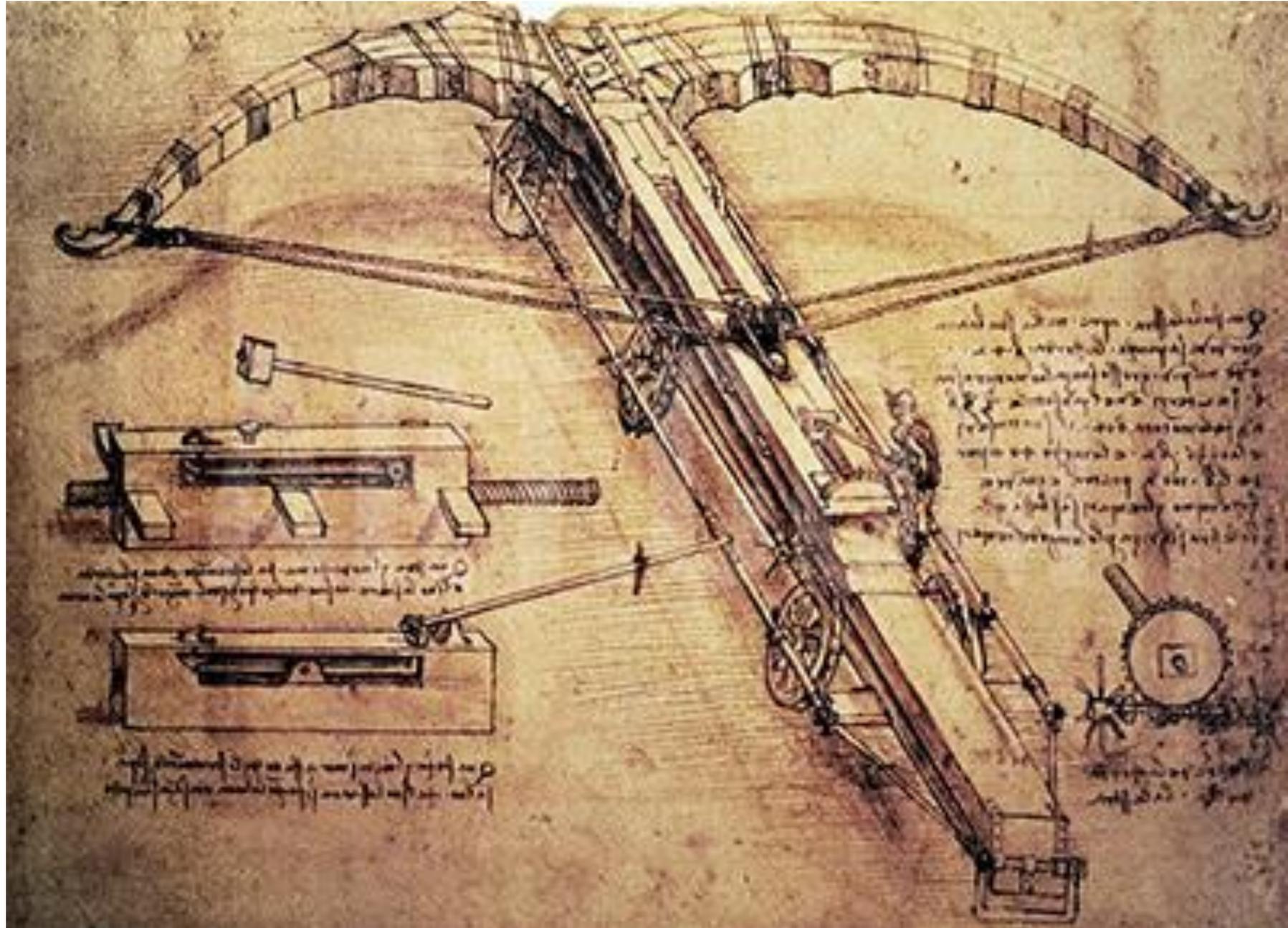


## CATAPULT

Leonardo da Vinci's catapult drawing is a remarkable piece, as it is a blend of practicality and art.

His sketch of a catapult was created using pen and ink on paper, along with his notes.

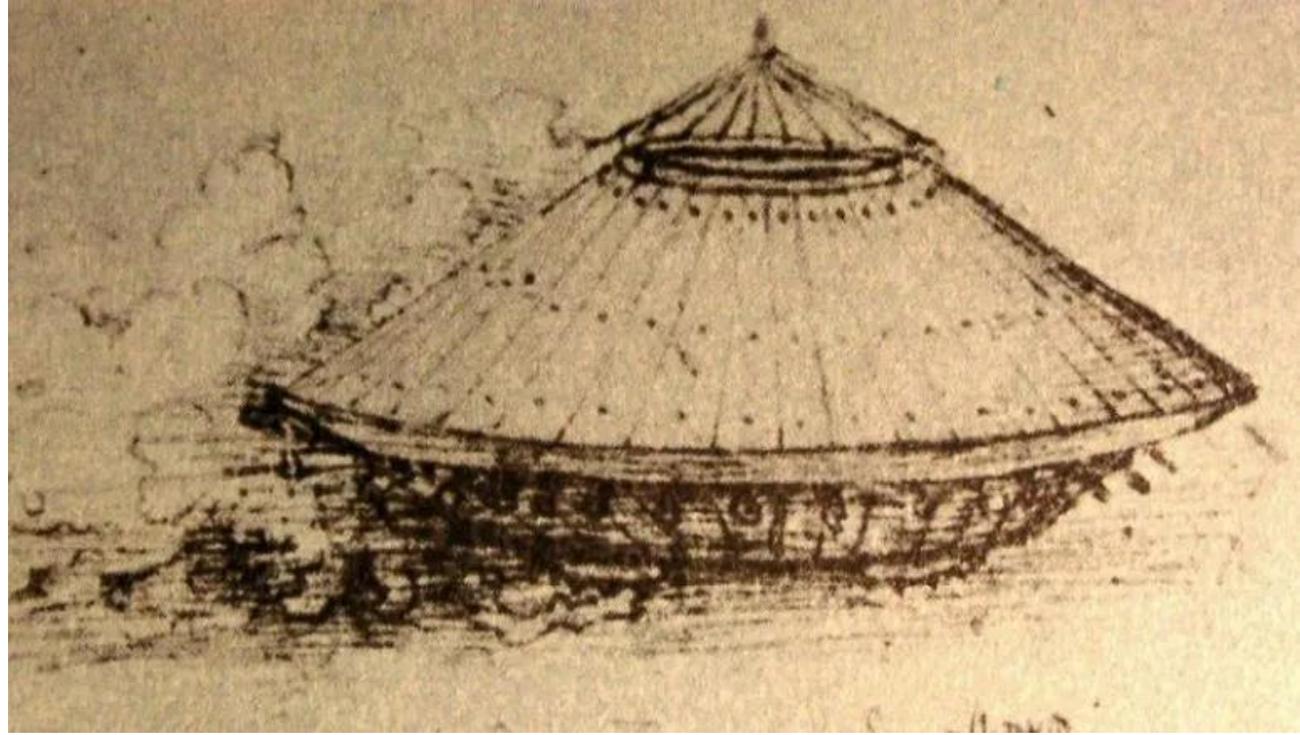
It is clear that, though it is very beautiful to look at, this was a drawing that was designed to be put to use.



# A FIGHTING VEHICLE

Designed as a massive circular platform reinforced with sturdy metallic plates and driven by wheels – the Armored Car would have a crew of 8.

It would carry an array of light cannons, with the gunner having a 360 degrees field-of-view that was to be aided by a sighting turret at the top.



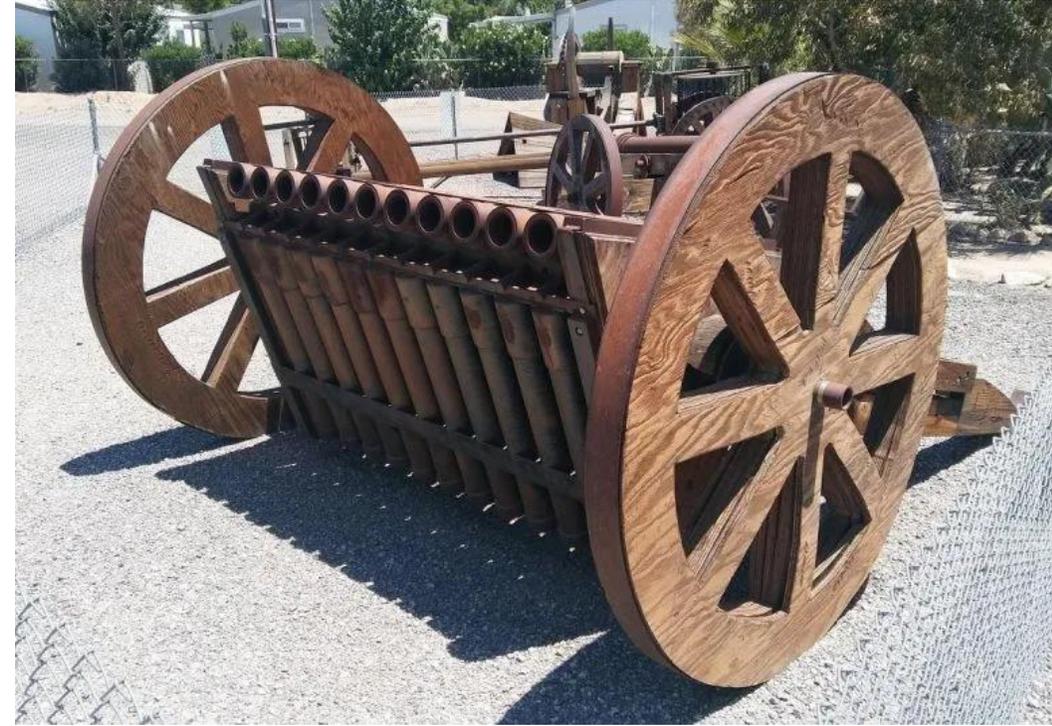
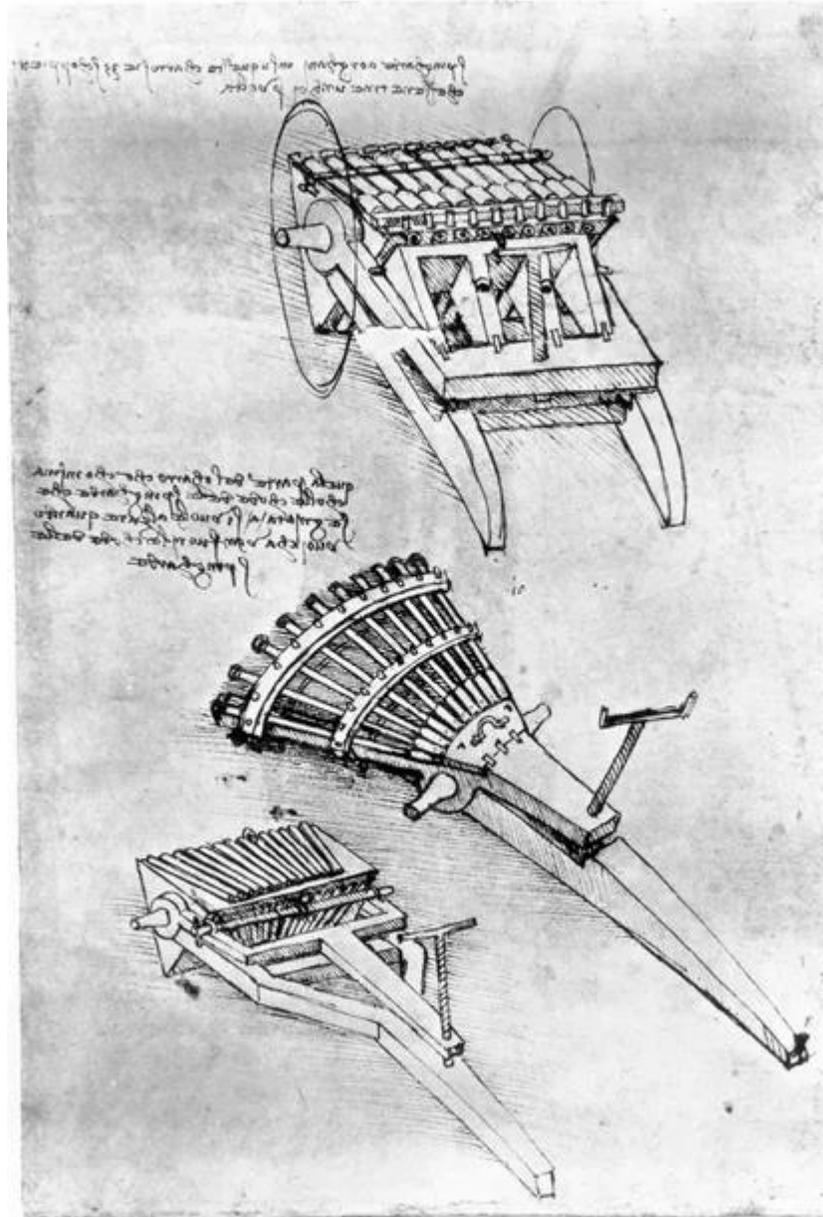
The entire contraption was to be powered by humans – with the men inside working upon the cranks that would make the wheels spin.

## MULTI-BARRELED GUN

He designed this 33-piped machine gun, which he called a barreled organ.

It was arranged along 3 rows (with 11 guns each).

It was supported upon a revolving platform that could also be mobile due to its wheels on each side.



## SELF-PROPELLED CART

It was powered by coiled springs, with a steering mechanism, balance wheel (also used in clocks), along with a braking system.

When the brakes were released, the cart moved with the vehicle's direction being controlled by the programmed steering that could lead the cart at various angles.

**People at the Italy Institute and Museum of the History of Science built the device from his plans, and it worked well !!**





Clad in heavy German-Italian medieval armor, the mechanical knight was conceived in 1495 as a humanoid automaton.

We say 'conceived' because the machine with its internal system of pulleys, gears, levers, and cranks, MIGHT have been the very first human-like robot actually created in the history of mankind.

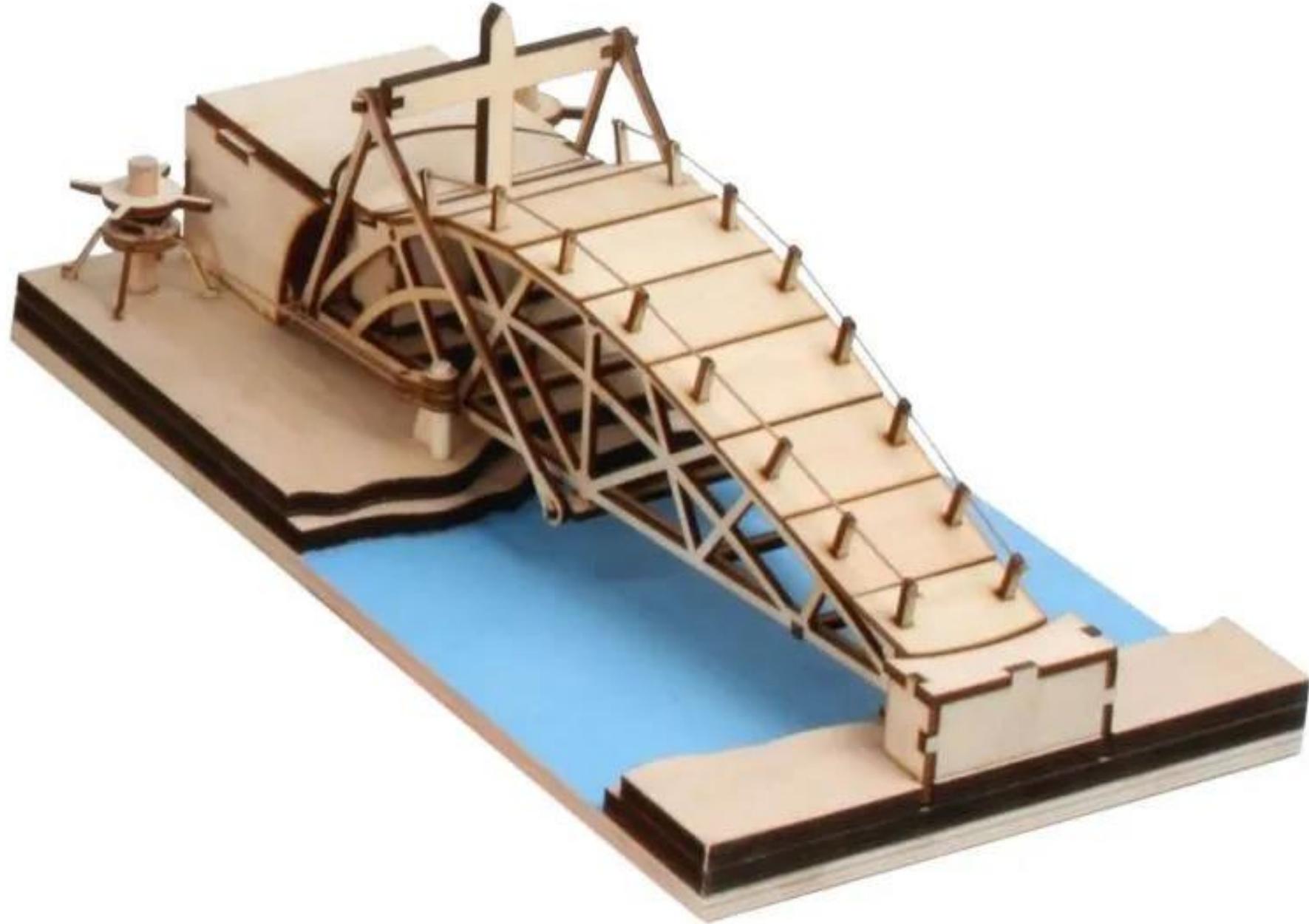
The famed roboticist Mark Rosheim successfully built a version of this humanoid automaton in 2002 by making use of da Vinci's drawings and it moved and waved, as it was designed to do.

## A REVOLVING AND EXTENDABLE BRIDGE

This invention was a revolving bridge that can be packed and hauled by armies on the move.

It had a counterweight tank that would make the structure balanced on both sides.

It was designed to have wheels and a rope-and-pulley system for effective use and quick deployment.

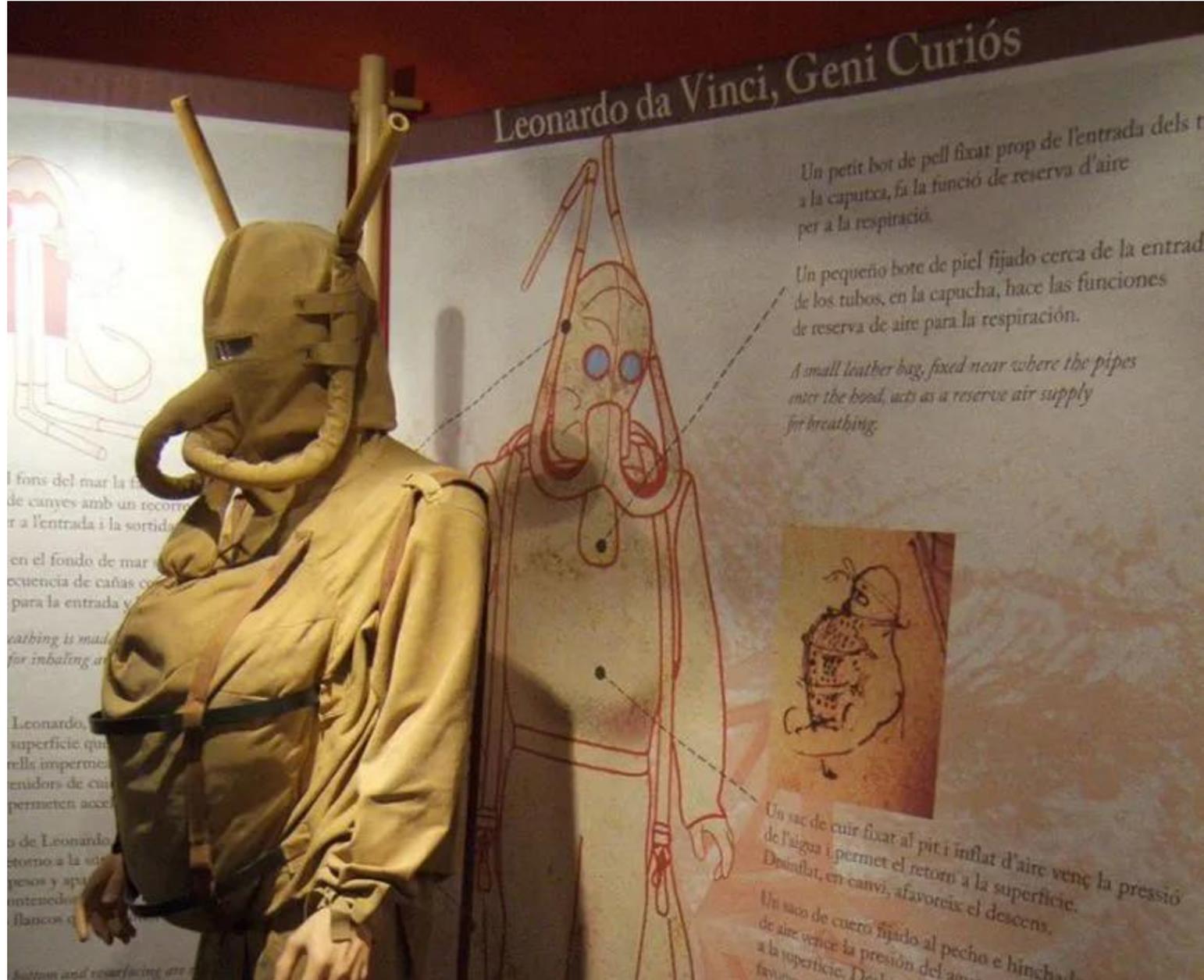


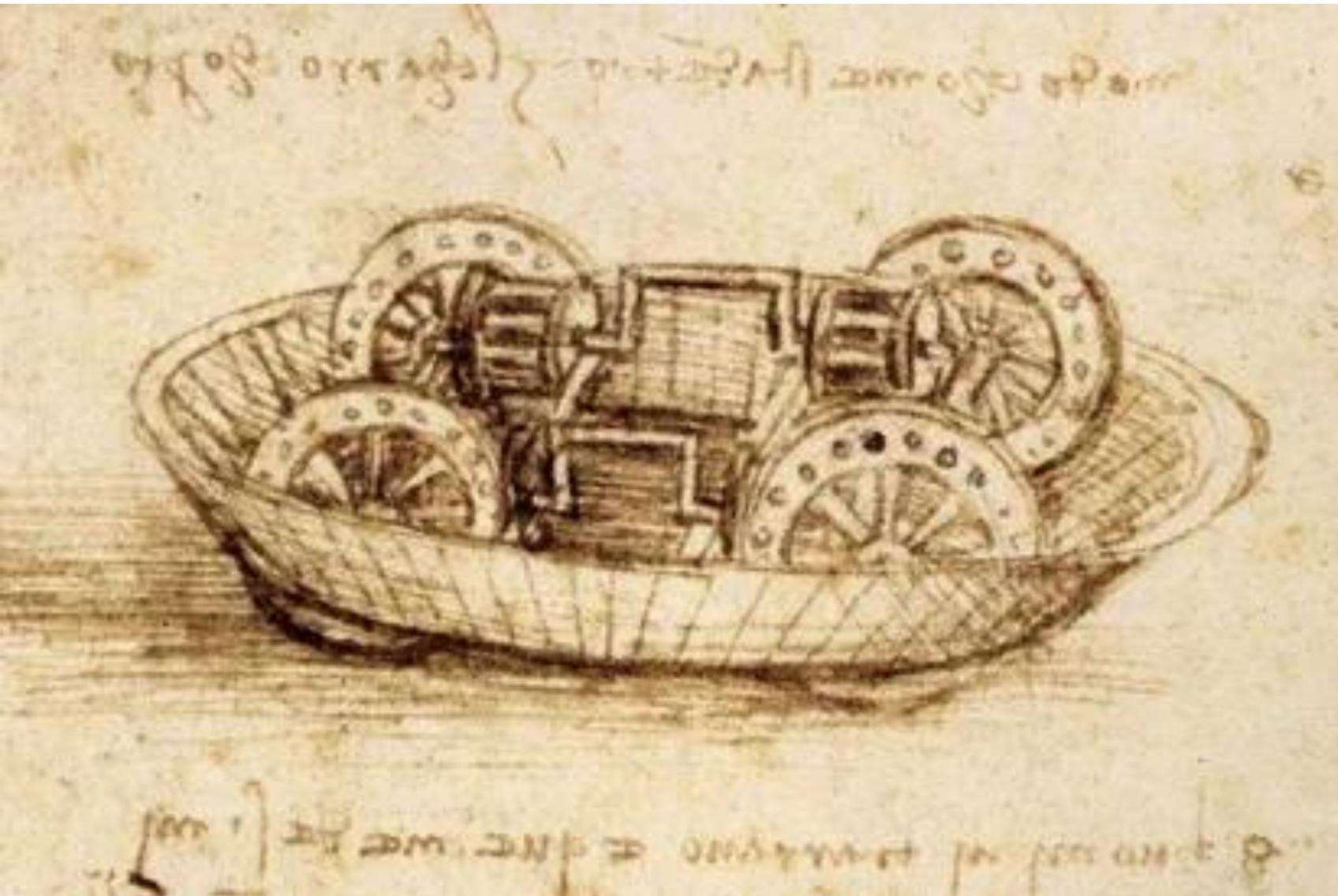
## SCUBA GEAR

Perhaps the least known of all his inventions, the scuba gear was developed when he was working on a project in Venice.

The diving gear was to be military equipment which could be used for marine-based surprise attacks on enemy vessels.

It was made from leather, and had a special mask with two tubes (tethered to the nose area) that were connected to a cork diving bell that floated above water.





## **SELF-PROPELLED CART**

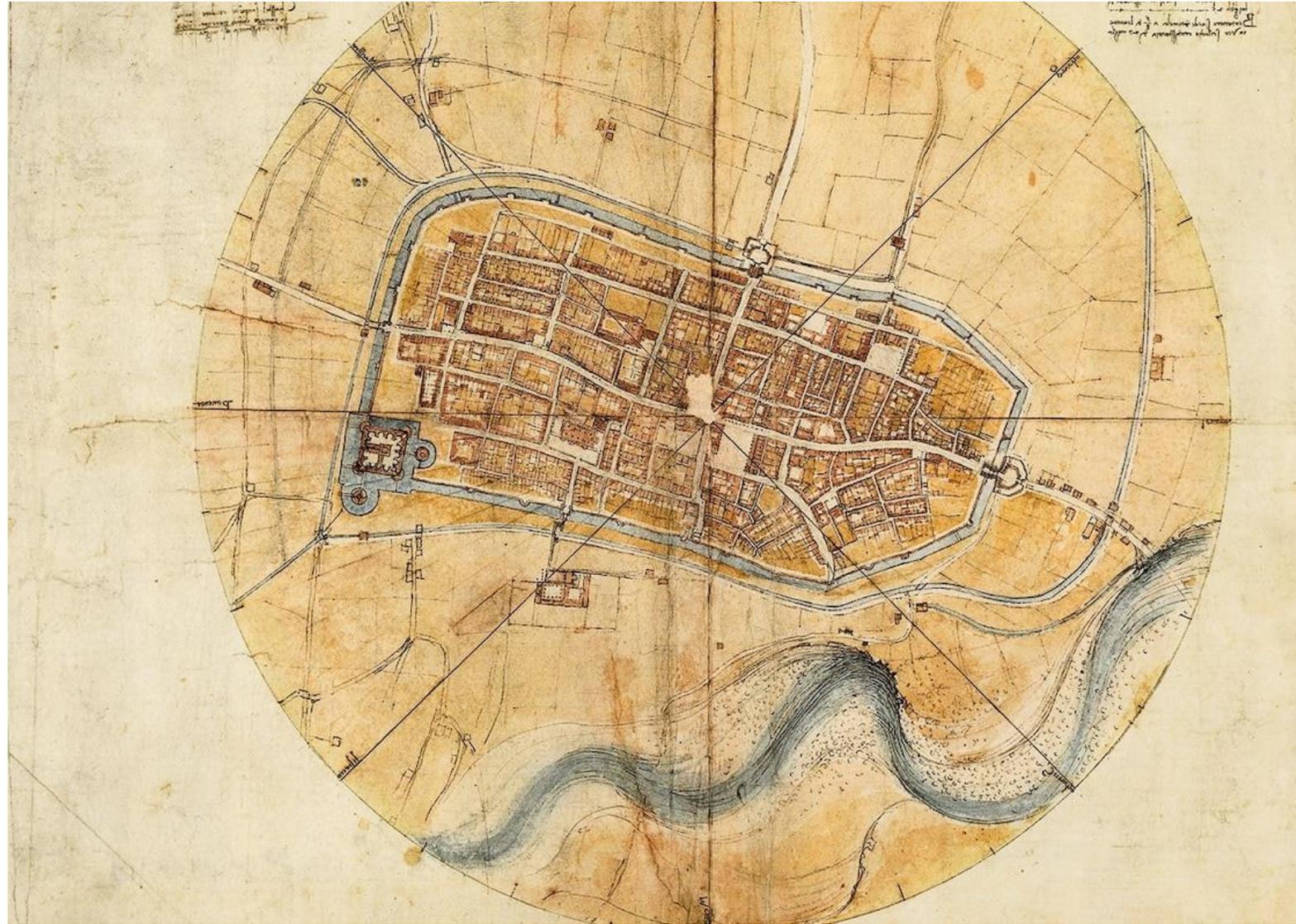
The self-propelled cart, allegedly designed for theatrical use, was designed to move without being pushed.

Powered by coiled springs, it also featured braking and pre-programmable steering systems.

In 1502, da Vinci entered into the patronage of Cesare Borgia, a general and statesman whose hunger for power served as inspiration for Machiavelli's *The Prince*.

Borgia's forces had already overtaken the city of Imola in 1499, but the Roman-born conqueror "probably did not have a very good grasp of the geography of the city he now governed and defended

Da Vinci mapped Imola in order to help Borgia get acquainted with its layout.

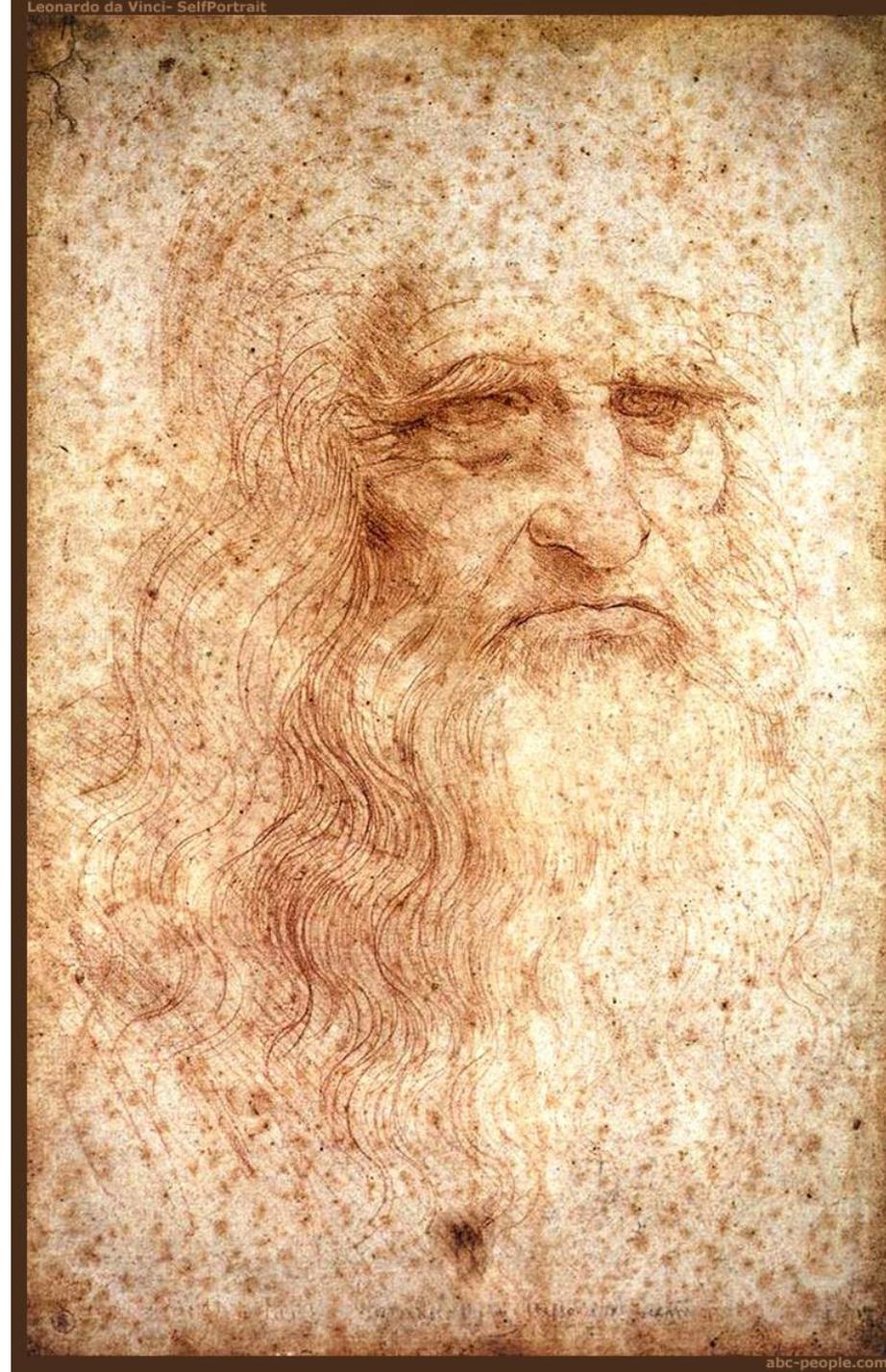


This is a self-portrait of Leonardo that was drawn when he was 60 years old, using red chalk on paper.

2019 was the 500<sup>th</sup> anniversary of his death.

Leonardo whispered his last words: "I have offended God and mankind because my work did not reach the quality it should have."

<https://www.youtube.com/watch?v=Vs-jHcrsuJk>



## HIS FINAL YEARS

At age 65, Leonardo accepted the invitation of the young King Francis I, to enter his service in France.

At the end of 1516 he left Italy forever, together with Melzi, his most devoted pupil.

Leonardo spent the last three years of his life in the small residence of Cloux (later called Clos-Lucé), near the king's summer palace at Amboise on the Loire.

He proudly bore the title "First painter, architect, and engineer to the King".



## LEONARDO'S PASSING IN 1519

He died on May 2, 1519 and it is said that when he passed, King Francis I was holding Leonardo's head to comfort him.

Leonardo left his drawings, money, paintings, tools, library and personal effects to his friend and apprentice, Francesco Melzi,, who was his main heir.

Leonardo's other long-time pupil and companion, Salai, and his servant Baptista de Vilanis, each received half of Leonardo's vineyards.

His brothers received land, and his serving woman received a fur-lined cloak.





## **CODEX ATLANTICUS (ATLANTIC CODEX)**

It is a 12-volume, bound set of drawings and writings (in Italian) by Leonardo, the largest single set.

**It holds 1,119 leaves dating from 1478 to 1519 and contains his drawings and notes about flight to weaponry to musical instruments and from mathematics to botany.**

It is now in the Biblioteca Ambrosiana in Milan.

**THE WONDERFUL THING ABOUT IT IS THAT THE WHOLE THING HAS BEEN DIGITIZED AND YOU CAN LOOK AT ANYTHING IN IT BY GOING TO**

<http://www.codex-atlanticus.it/#/>

# CODEX LEICESTER

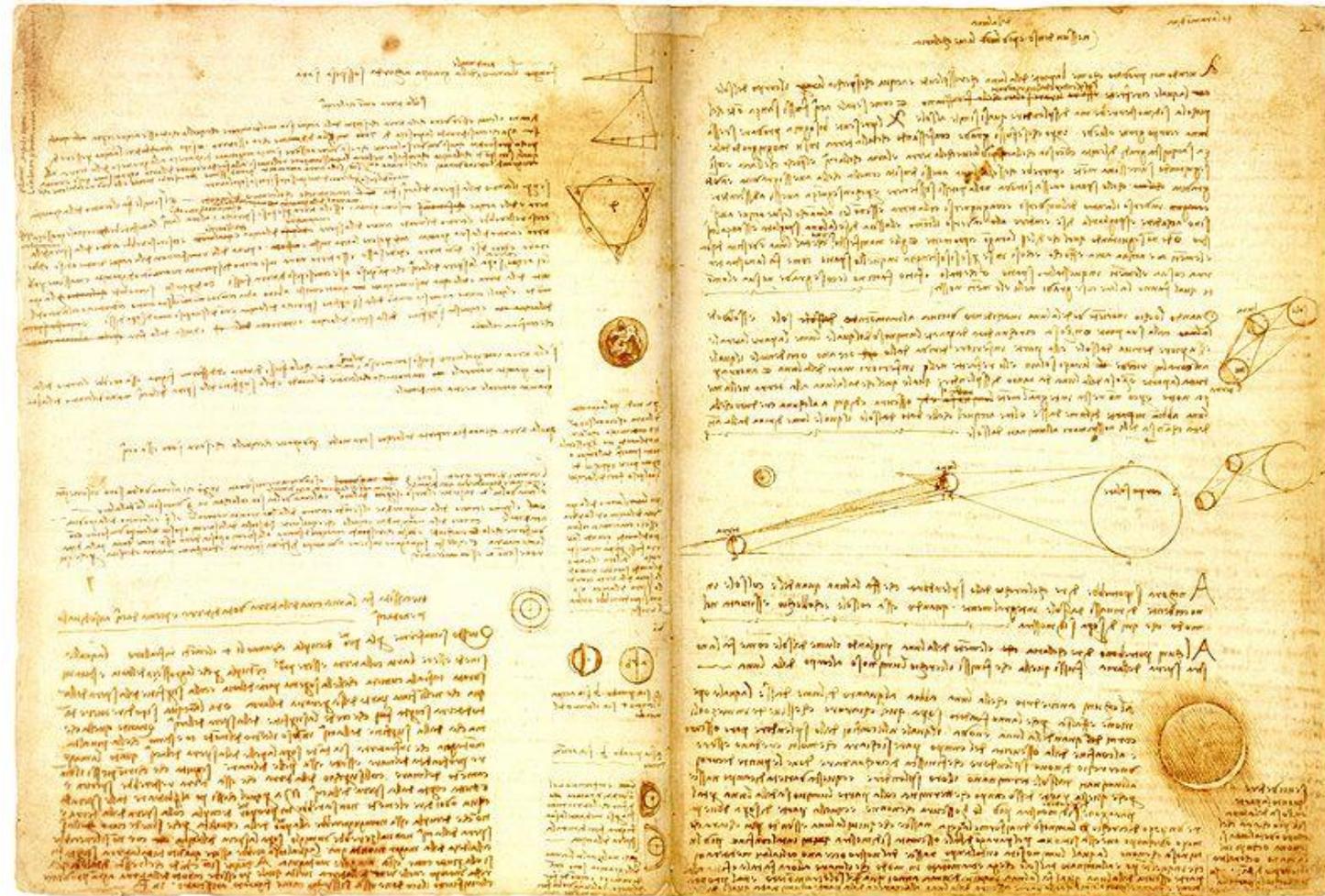
It is a collection of scientific writings by Leonardo da Vinci.

The notebook is leather-bound and consists of 36 sheets 29 × 22 cm in size.

It is rather a mixture of Leonardo's observations and theories on [astronomy](#); the properties of water, rocks, and fossils; air, and celestial light.

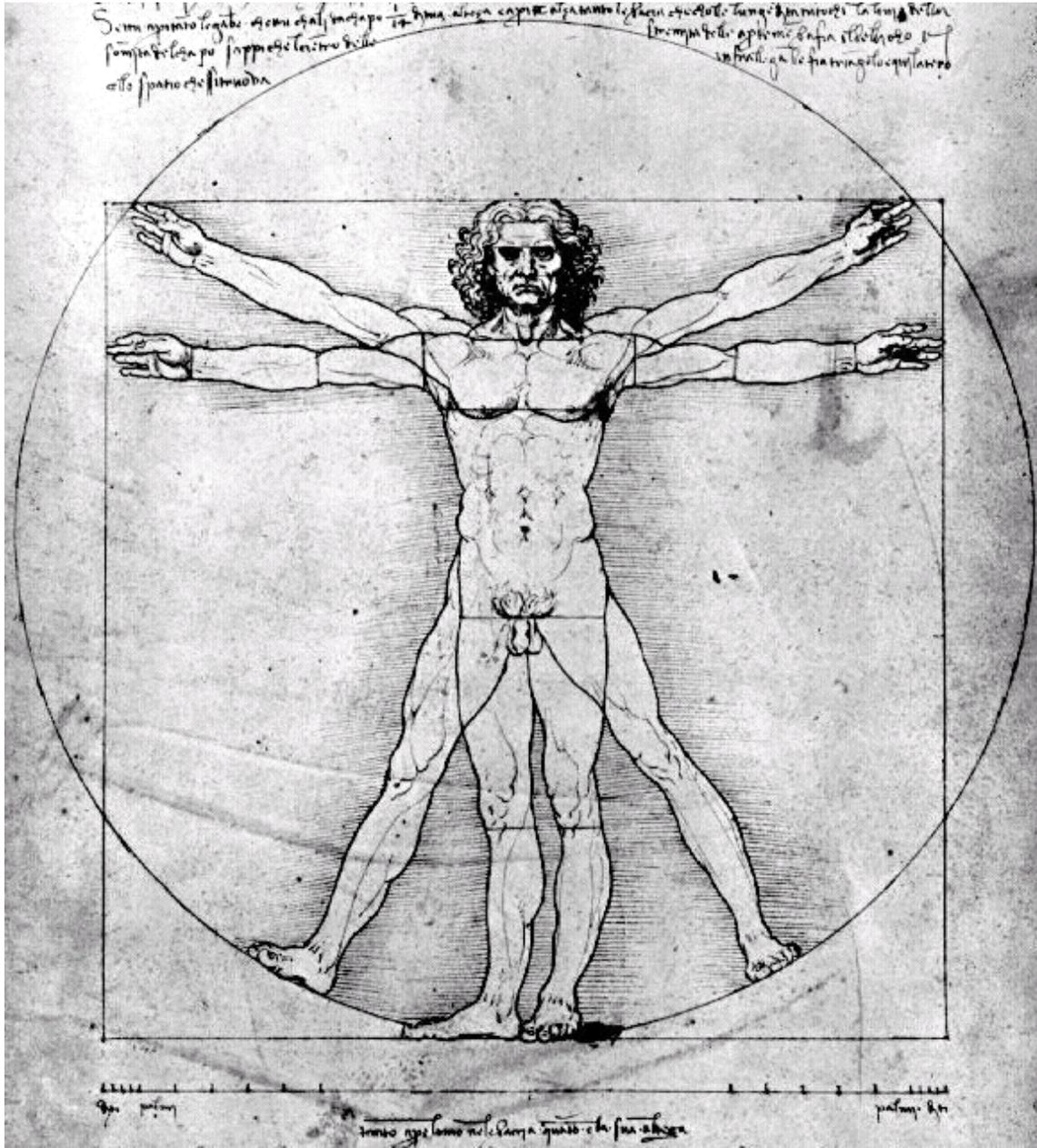
**It currently holds the record for the second highest sale price of any book:**

**It was sold to Bill Gates at Christie's auction house on 11 November 1994 in New York for US \$30,802,500 (equivalent to \$53,222,898.79 in 2019).**



A SET OF PAGES FROM IT

# Vitruvian Man – Drawn by Leonardo da Vinci



**Vitruvius** - A Roman architect.

He claimed that the human body is the model of perfection, and the drawing represents what Leonardo felt was those body proportions.

Its inscription in a square and a circle comes from a description by Vitruvius.

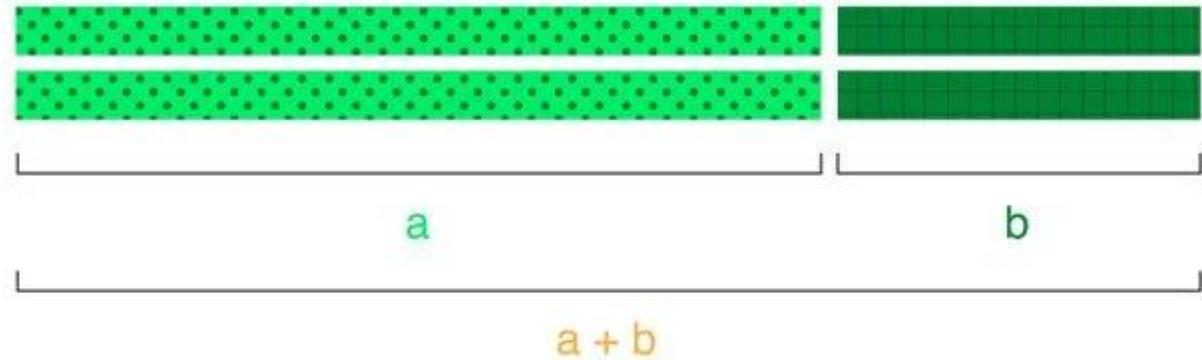
**It represented that, on average, the length of outstretched arms is the same distance as the height of a person.**



# THE GOLDEN MEAN OR RATIO

- The Golden Mean is a ratio which has fascinated generation after generation, and culture after culture.
- It can be expressed as the ratio of the number "1" to the irrational number "1.618034."

## THE GOLDEN RATIO



$$\frac{a}{b} = \frac{a+b}{a} = 1.618... = \Phi \text{ (Phi)}$$

# THE GOLDEN MEAN

**It is also known as:**

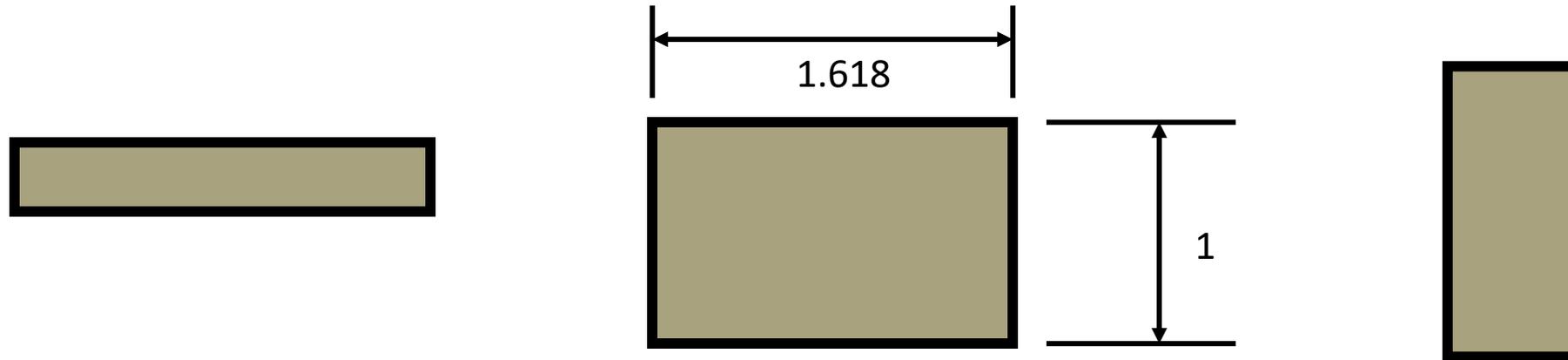
- The Golden Ratio
- The Golden Section
- The Golden Rectangle
- The Golden Number
- The Golden Spiral
- Or the Divine Proportion

# The Golden Mean

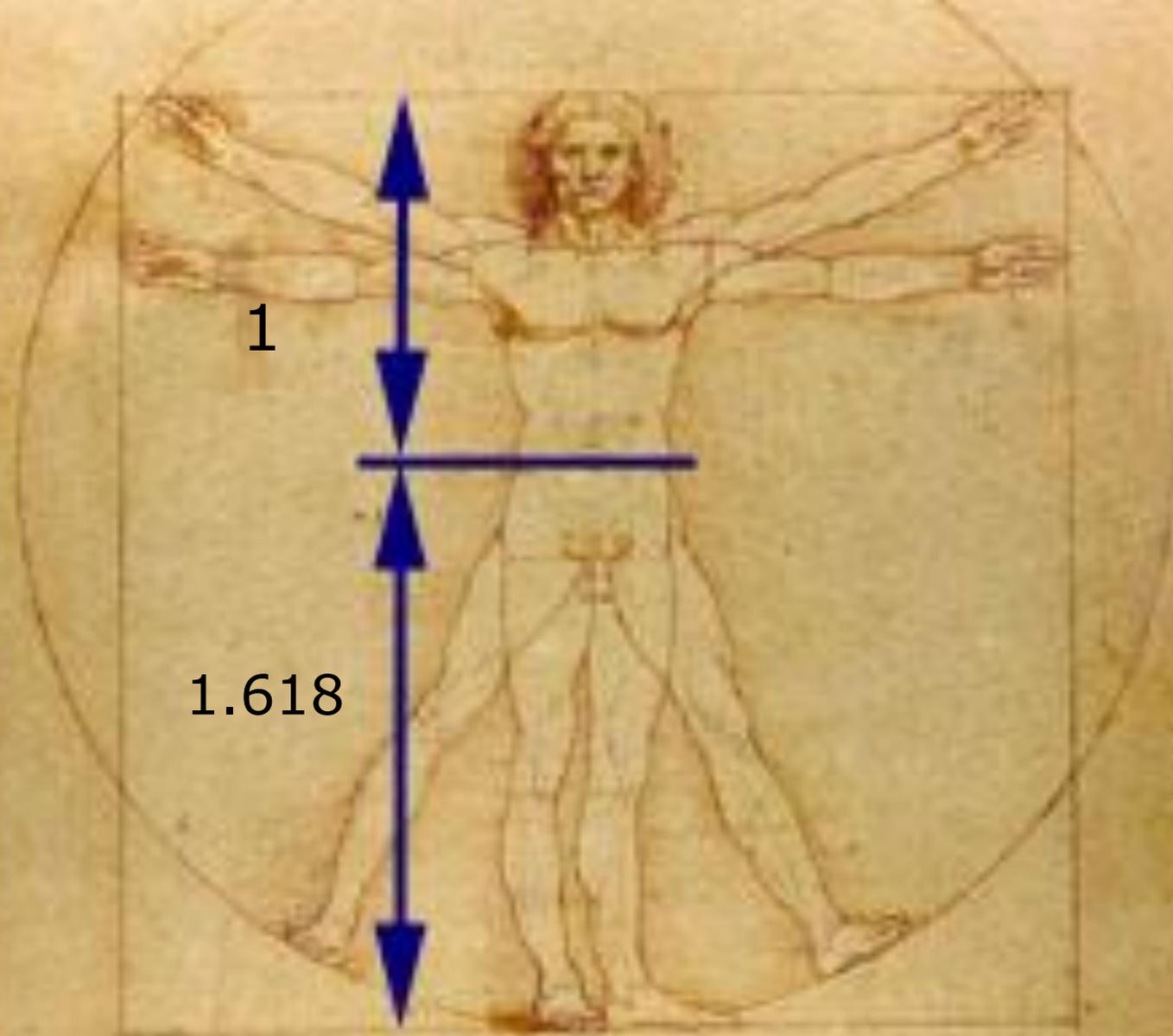
**This ratio is the same as the ratio between 1 and the number phi (1.6180339887).**

By constructing a rectangle where the sides have the golden ratio, we create a golden rectangle!

**Which rectangle appeals to you, the most ?**



Most people would select the middle one, the "golden rectangle", as most pleasing to the eye.

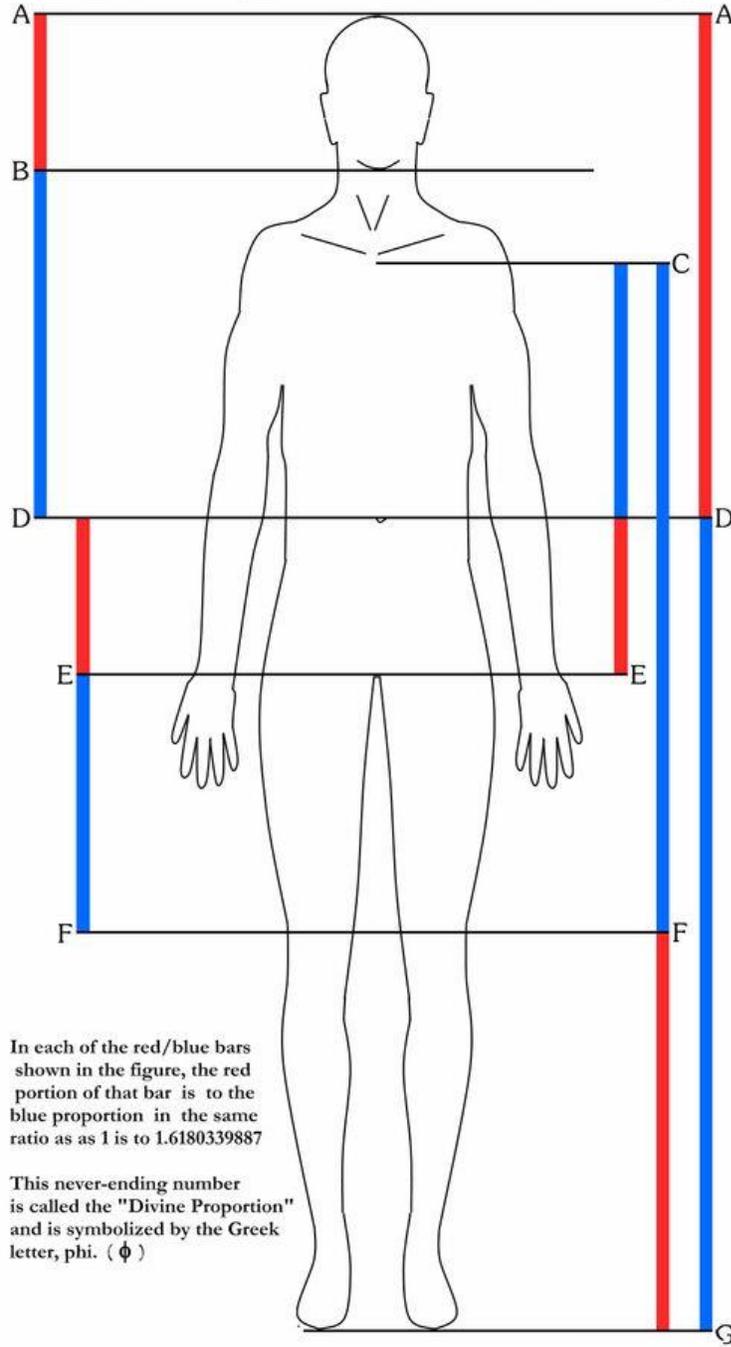


1

1.618

*[Faint handwritten text at the bottom of the page, likely a transcription of the drawing's proportions.]*

# DIVINE PROPORTIONS



In each of the red/blue bars shown in the figure, the red portion of that bar is to the blue portion in the same ratio as 1 is to 1.6180339887

This never-ending number is called the "Divine Proportion" and is symbolized by the Greek letter, phi. ( $\phi$ )

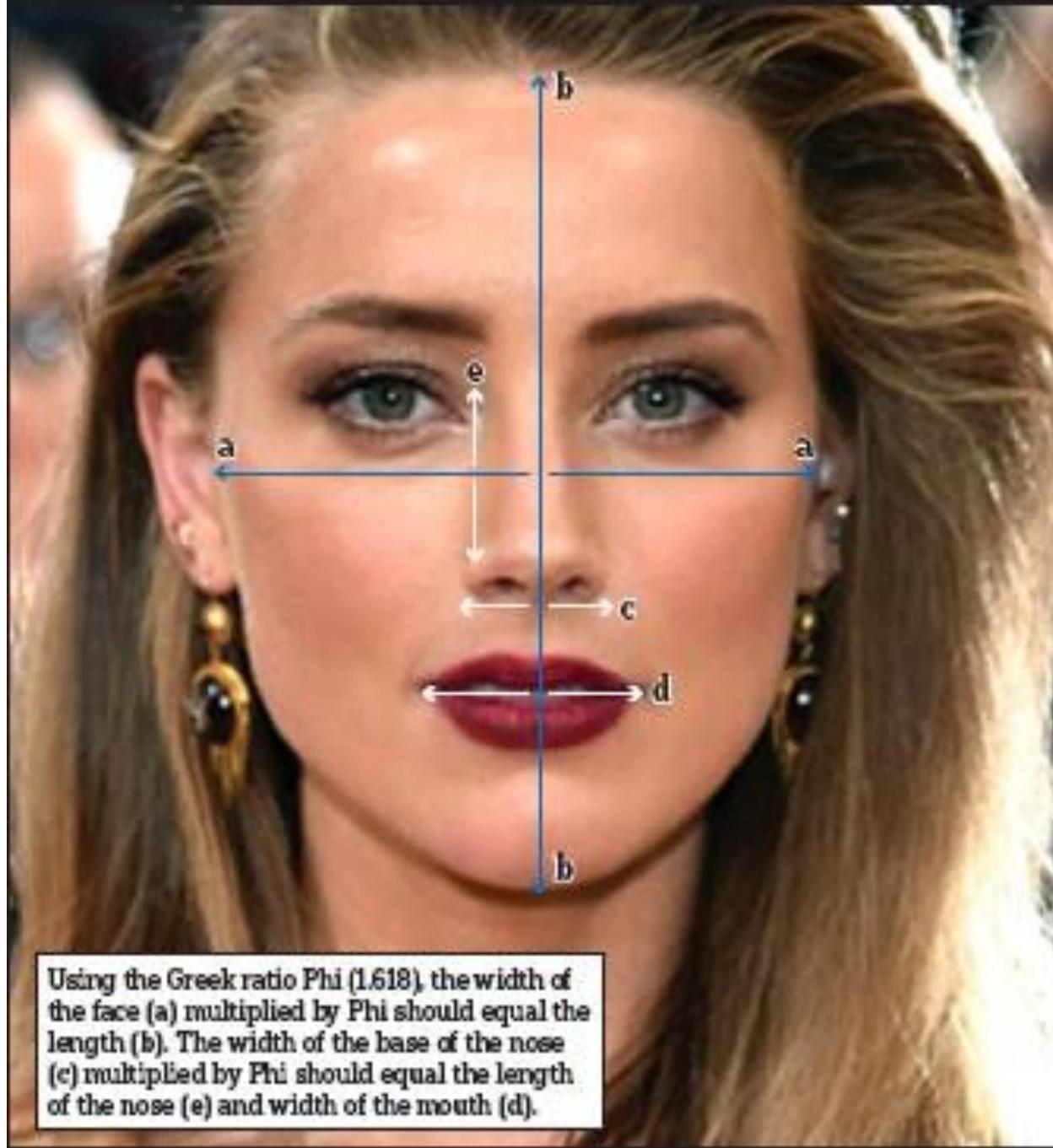
The Golden Mean or Golden Section is shown by the shorter Red lines that represent the "1" in the ratio of 1 to 1.618.

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The lines shown in blue, represents the longer section, from the ratio of 1 to 1.618.

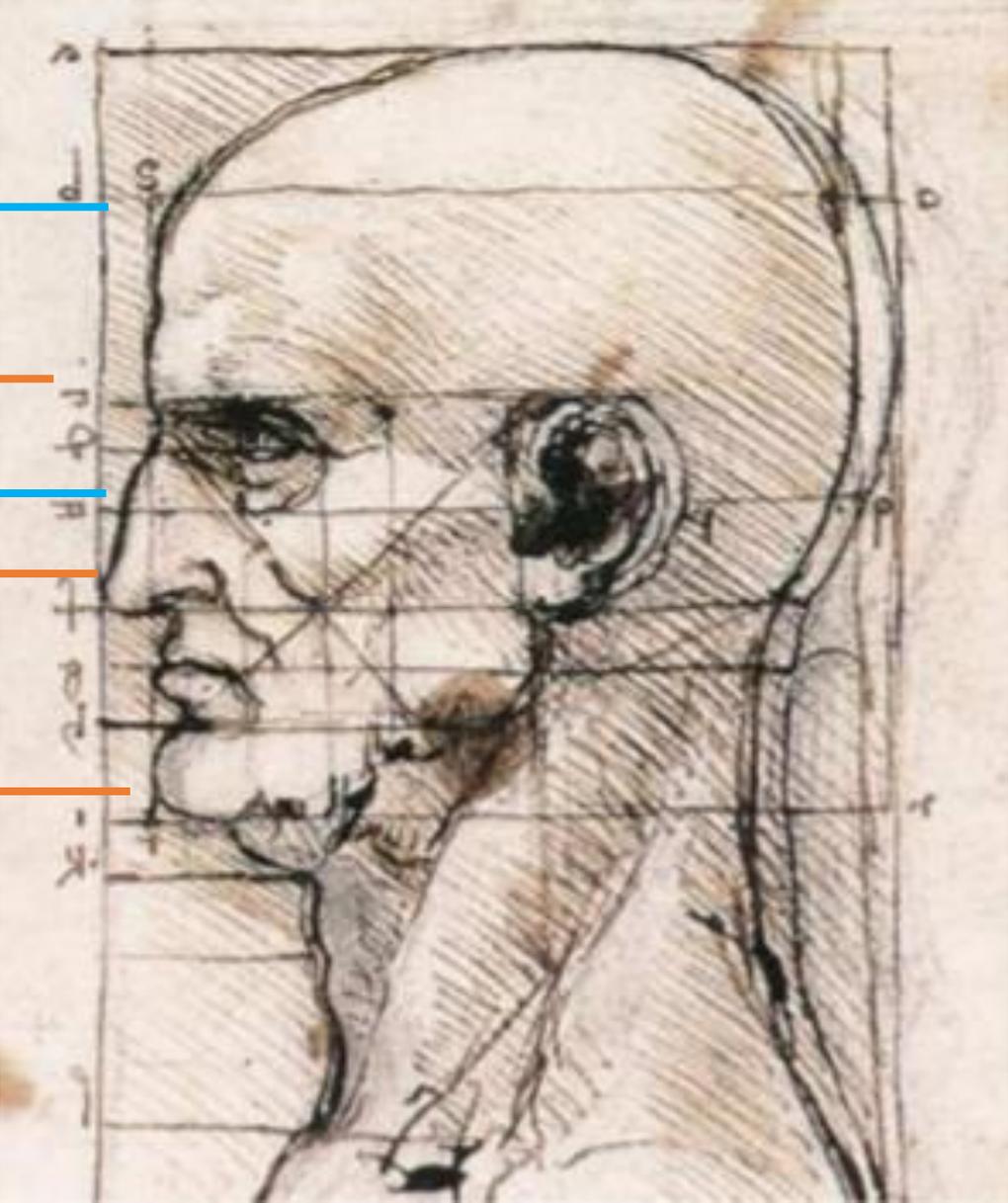
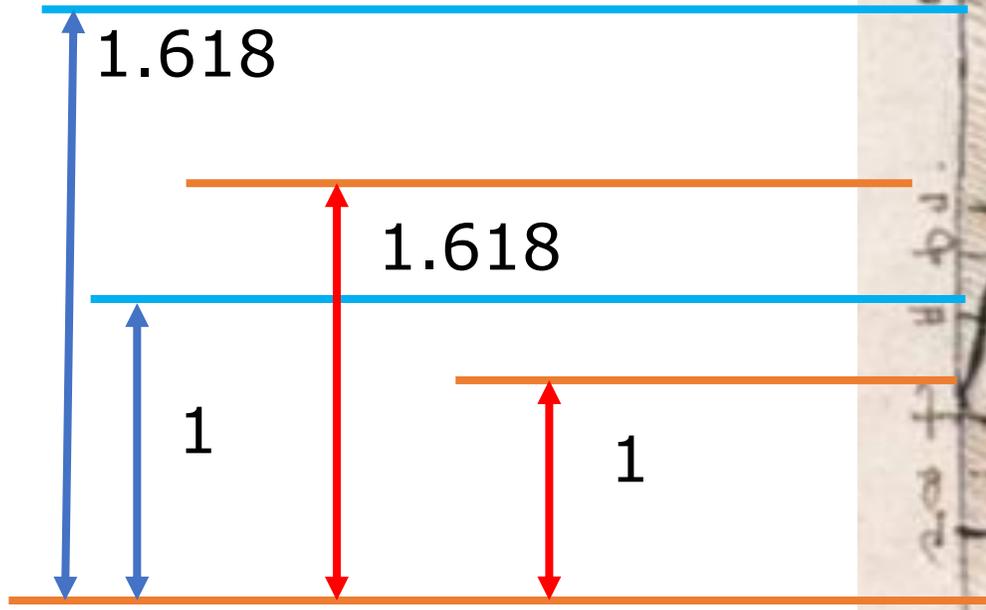
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# IT'S ALL GREEK - THE BEAUTY FORMULA



Using the Greek ratio Phi (1.618), the width of the face (a) multiplied by Phi should equal the length (b). The width of the base of the nose (c) multiplied by Phi should equal the length of the nose (e) and width of the mouth (d).

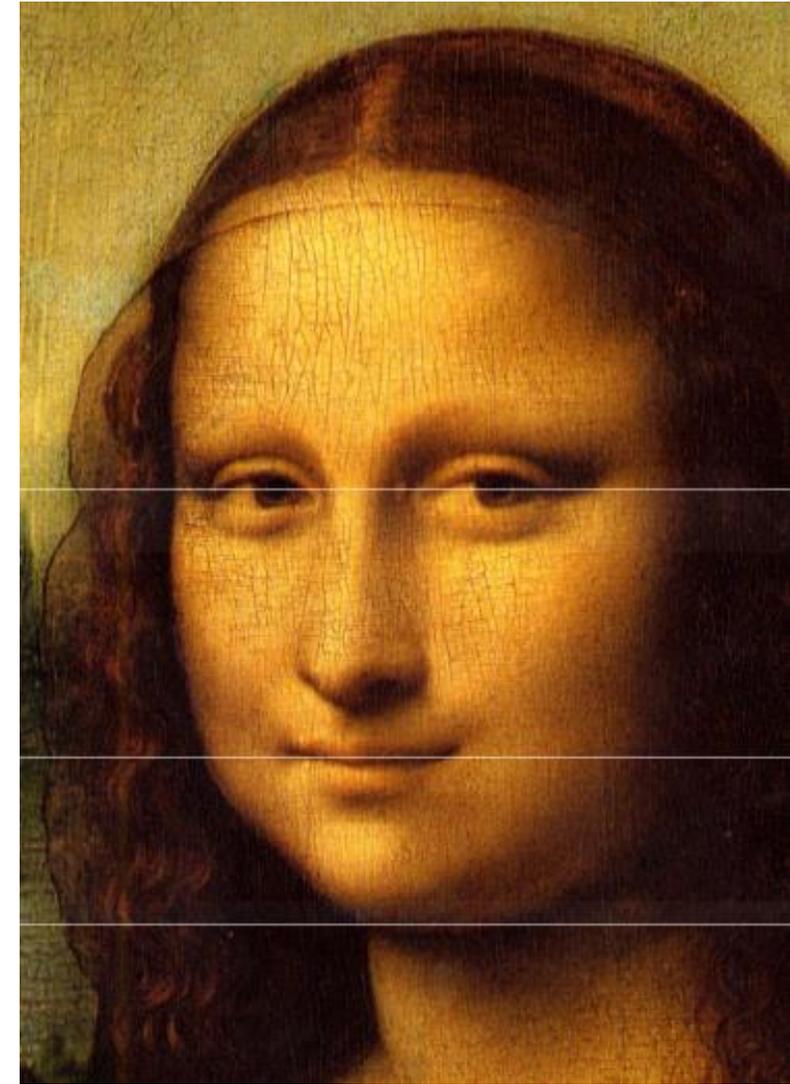
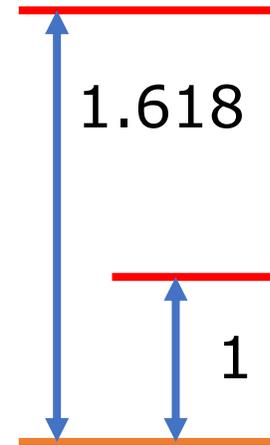
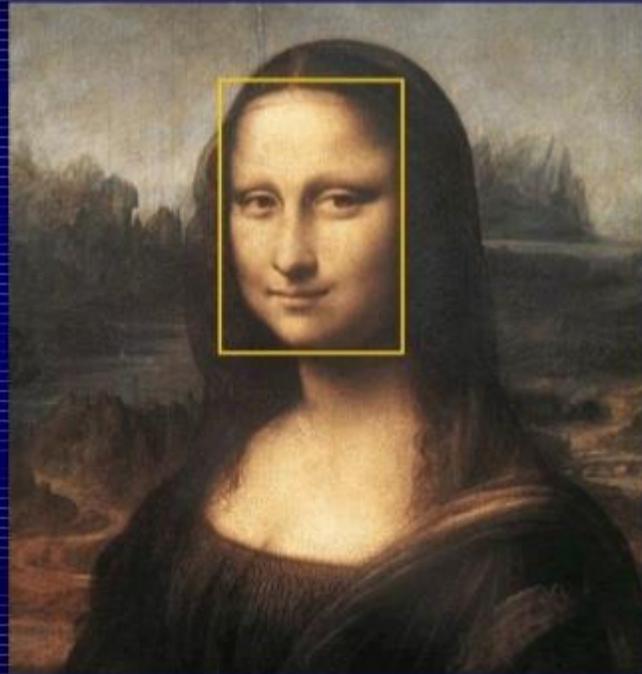
HAIRLINE

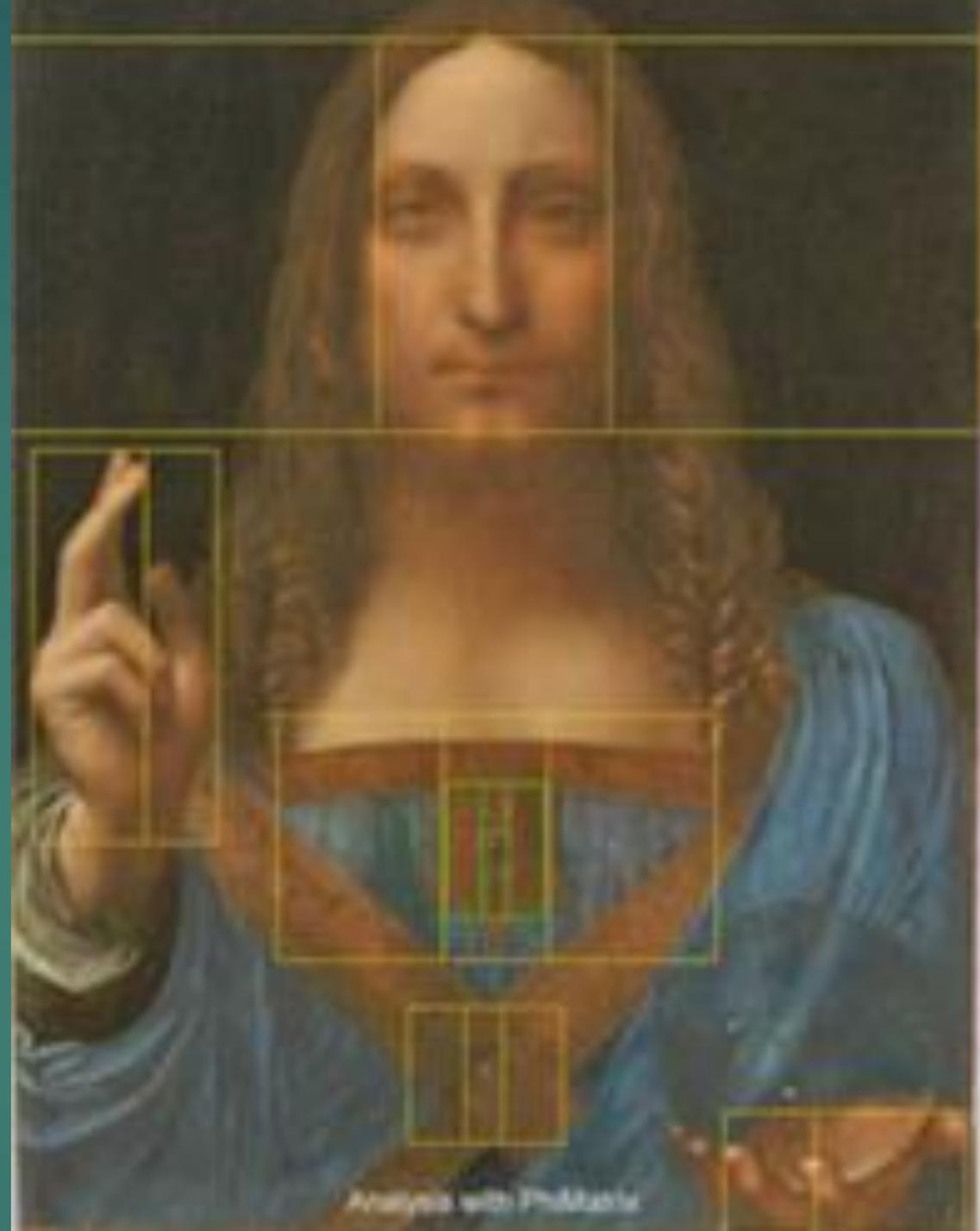


FACE PROFILE DRAWN BY  
LEONARDO

GOLDEN SECTION PROPORTIONS

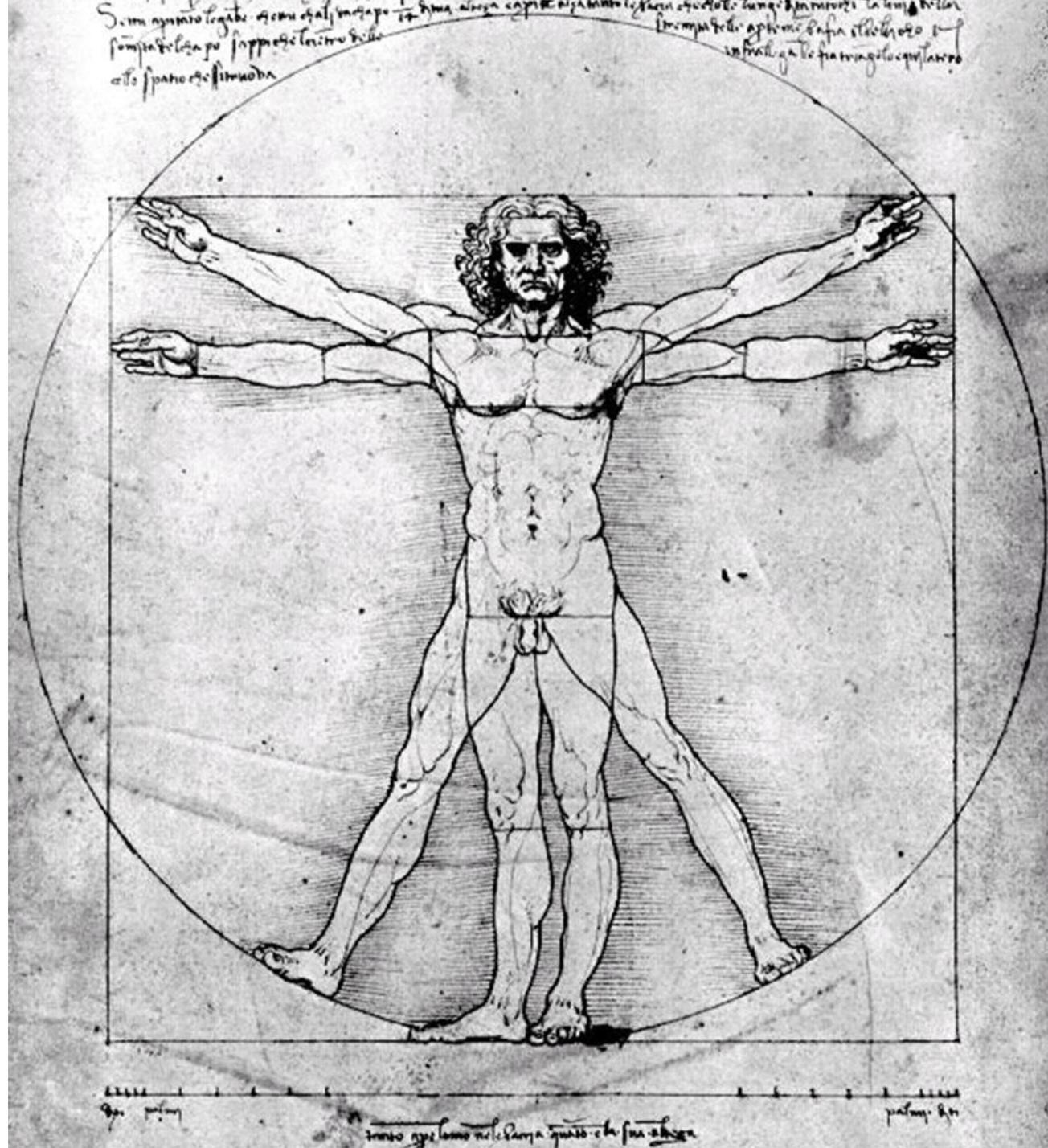
Mona Lisa's face is a perfect golden rectangle, according to the ratio of the width of her forehead compared to the length from the top of her head to her chin.

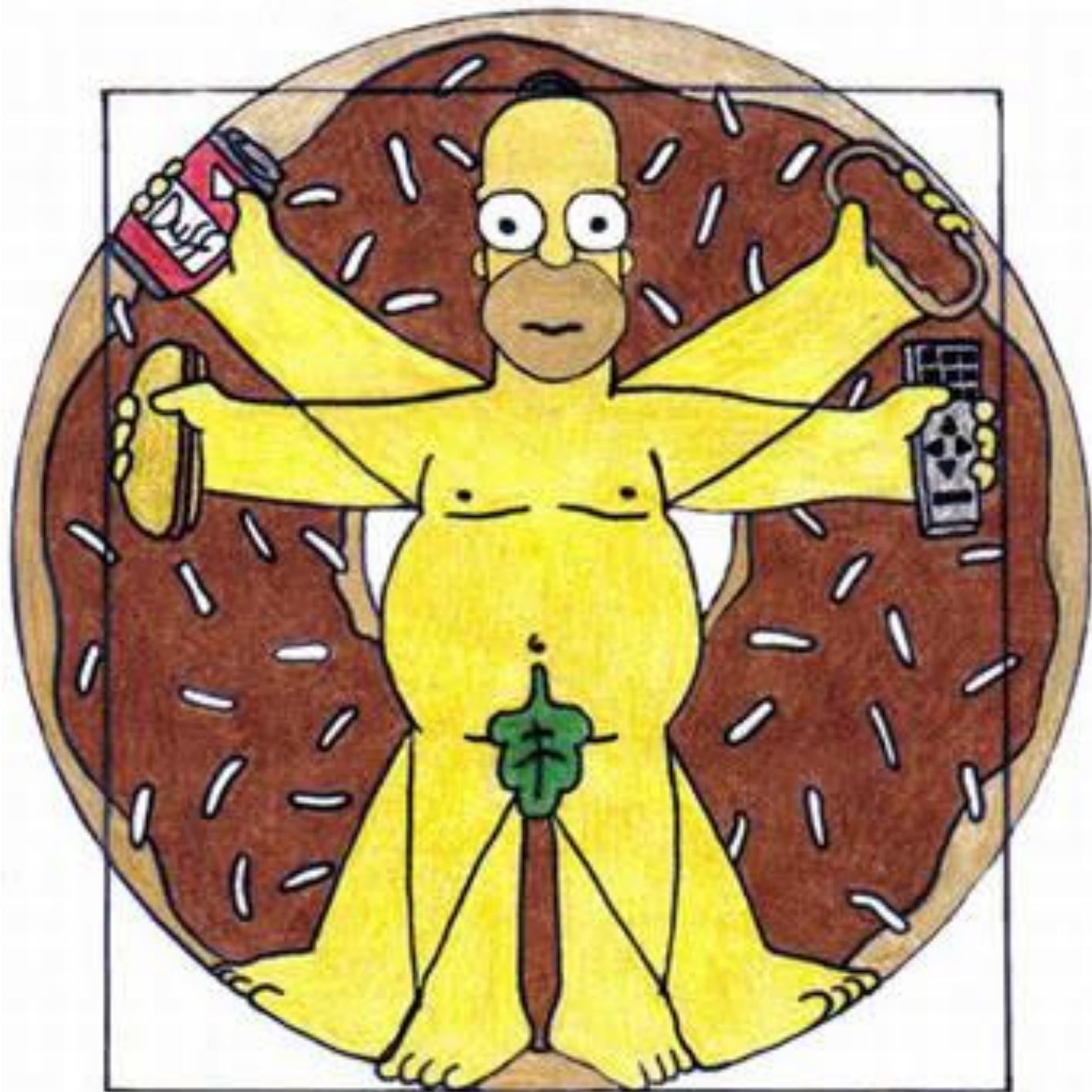


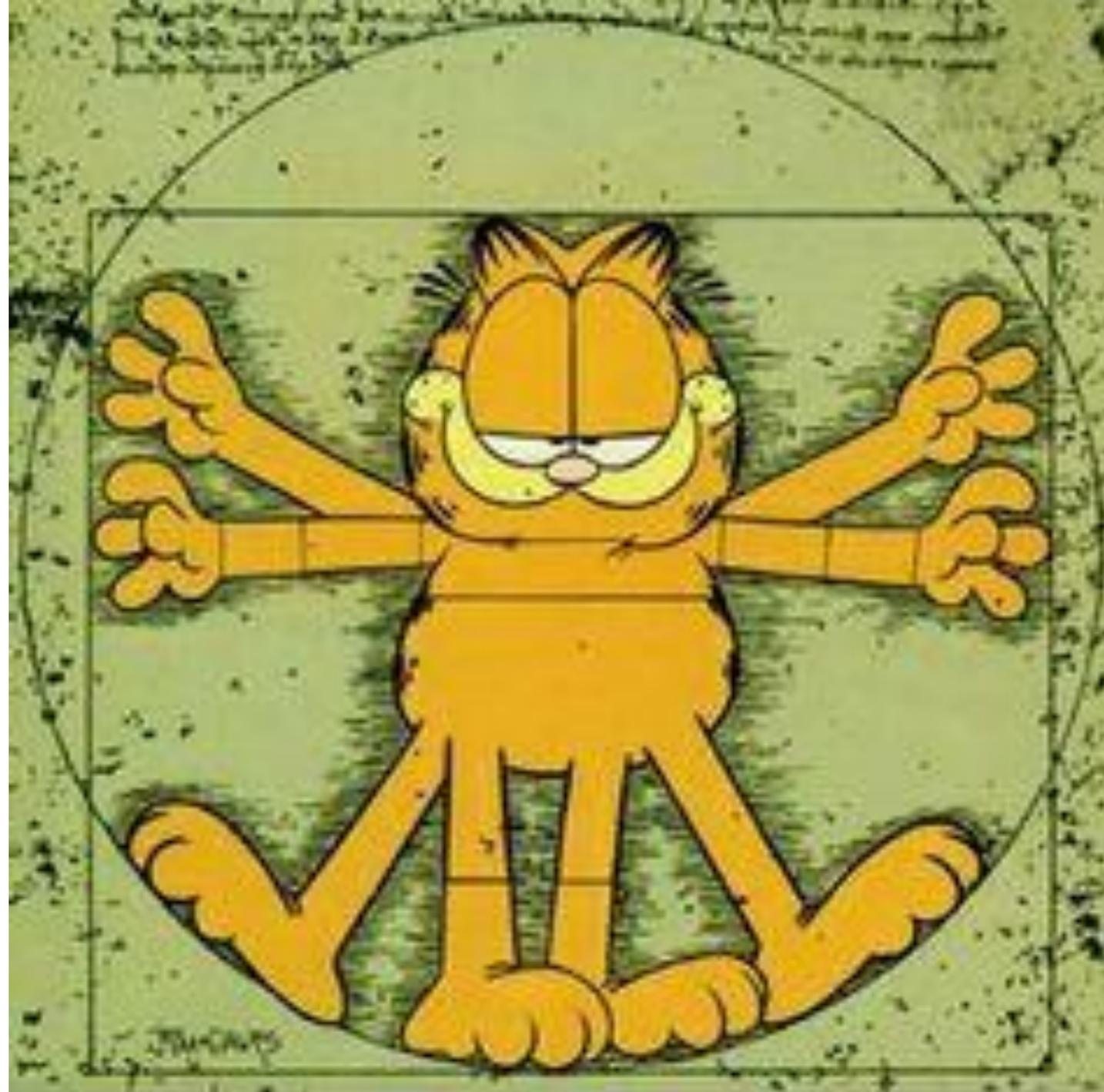


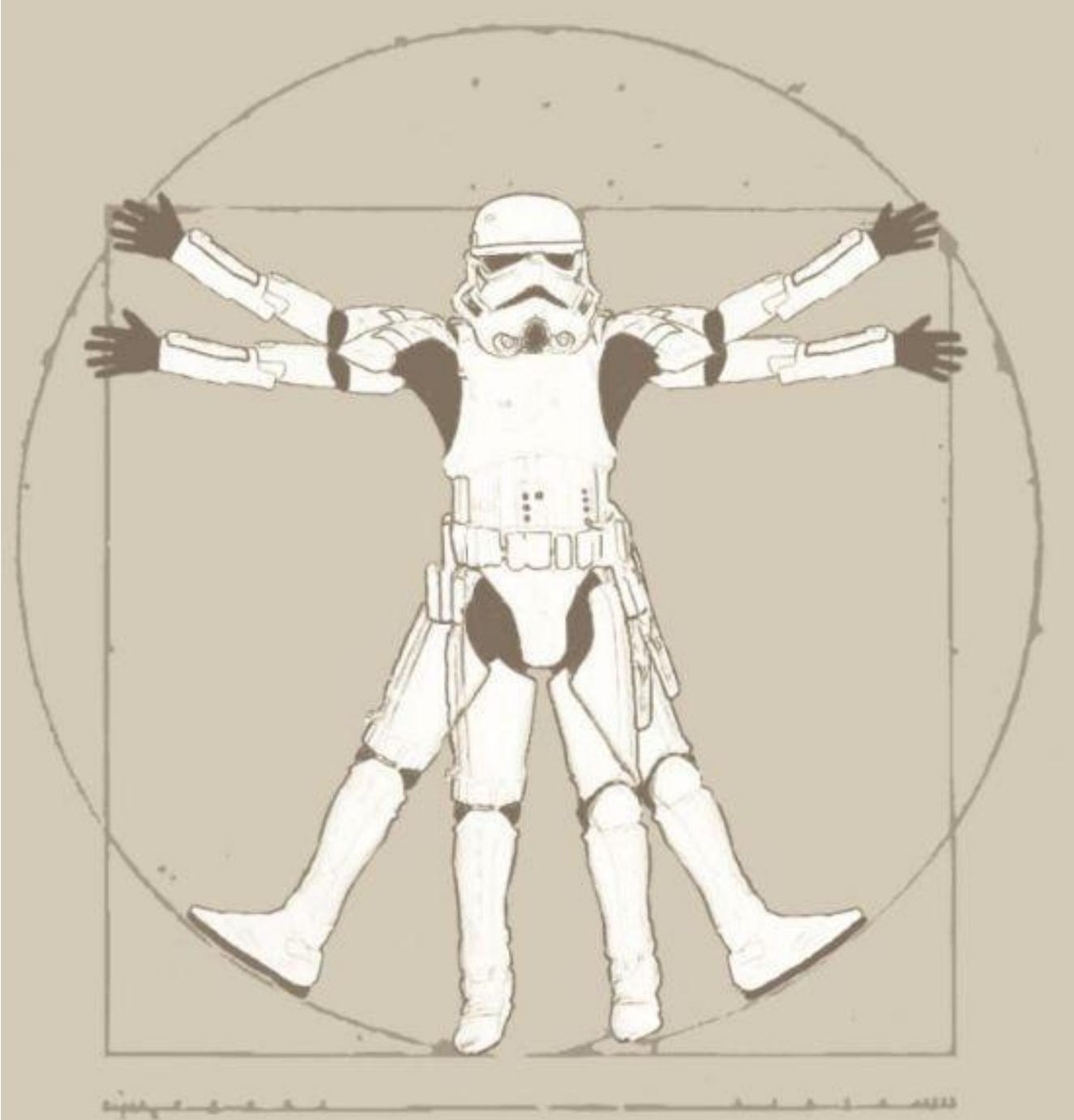
The Vertical golden Ratio

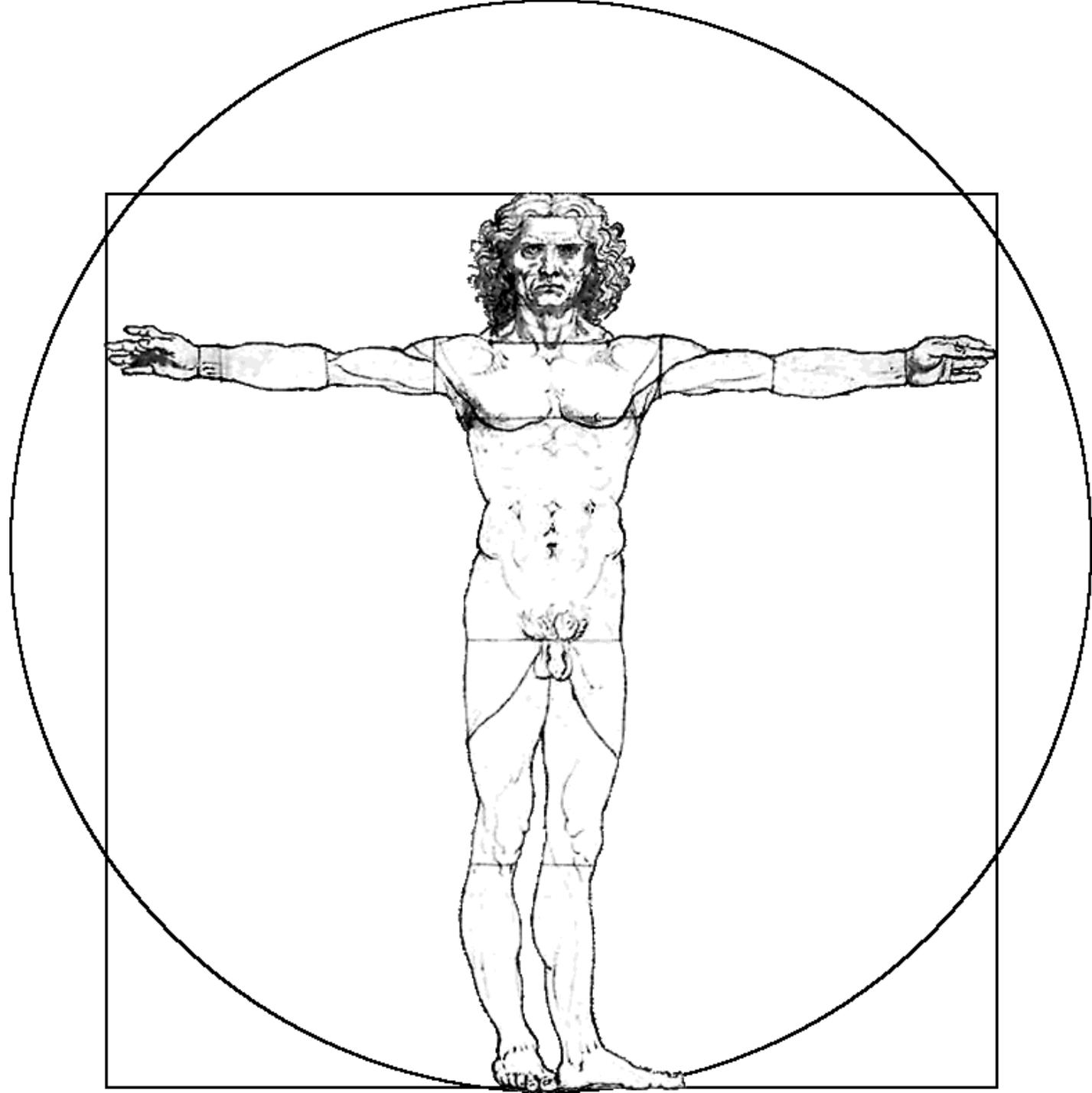
AND NOW SOME HUMOROUS  
VERSIONS OF LEONARDO'S  
WONDERFUL ART !

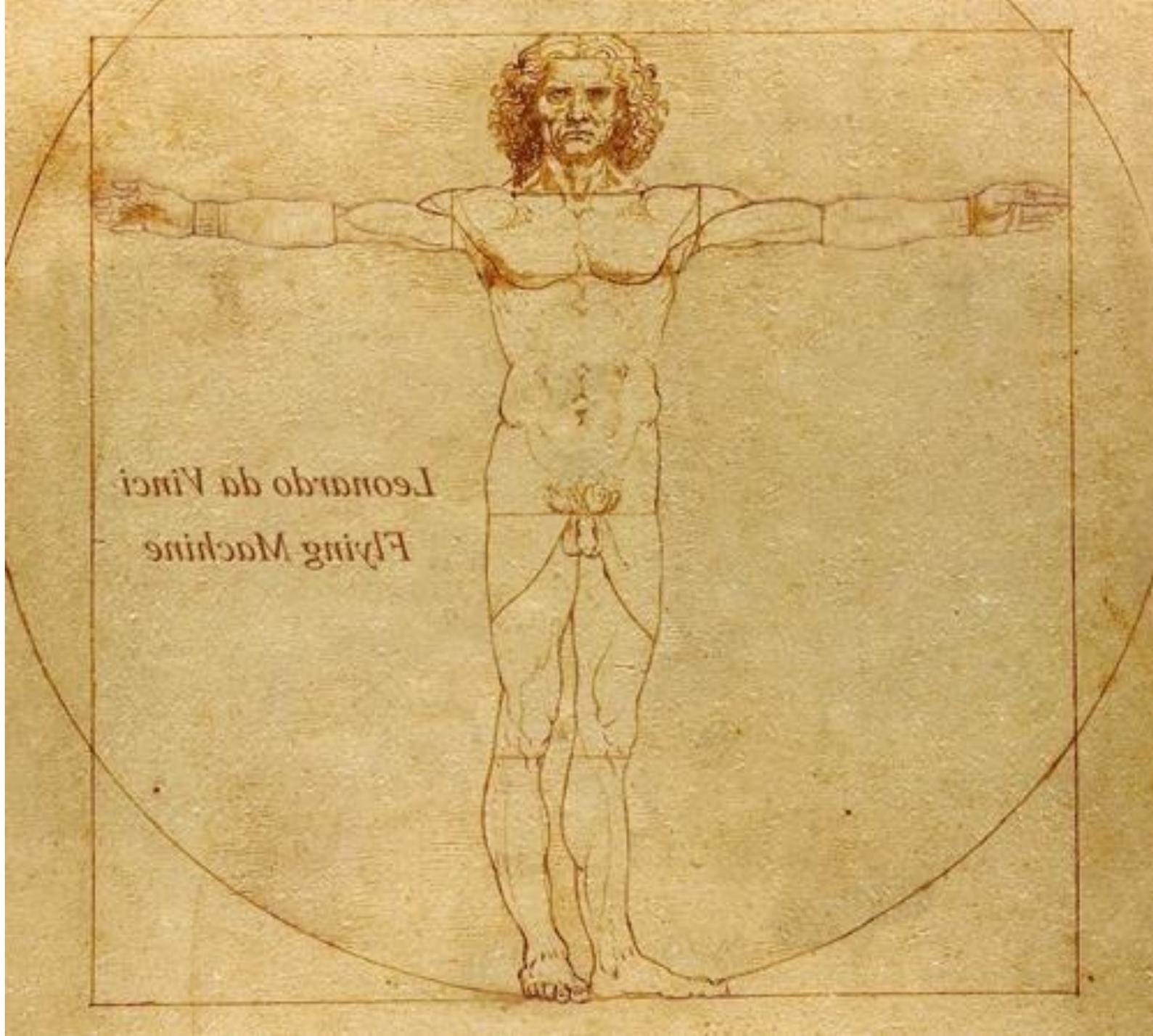






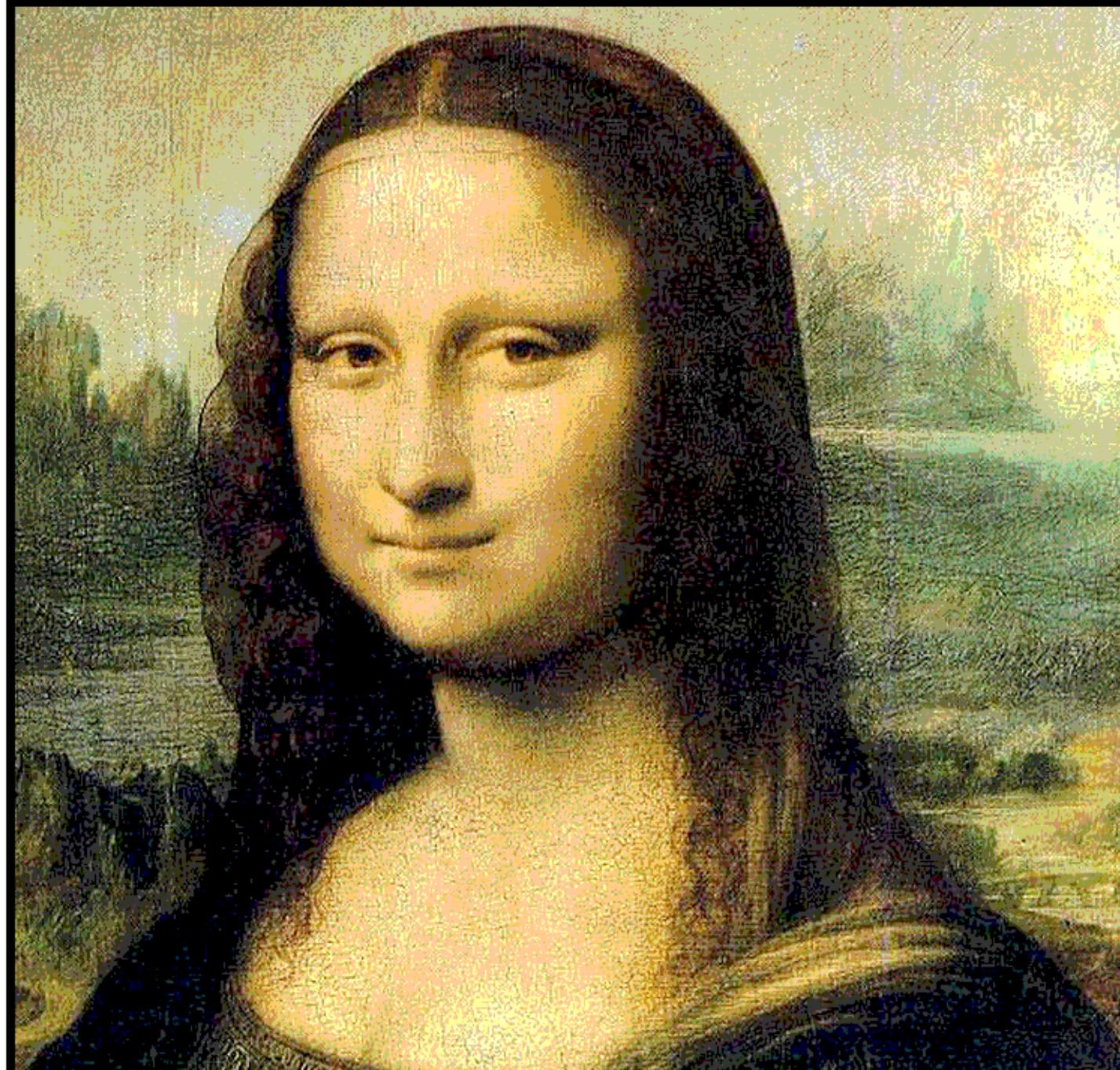






Leonardo da Vinci  
Flying Machine



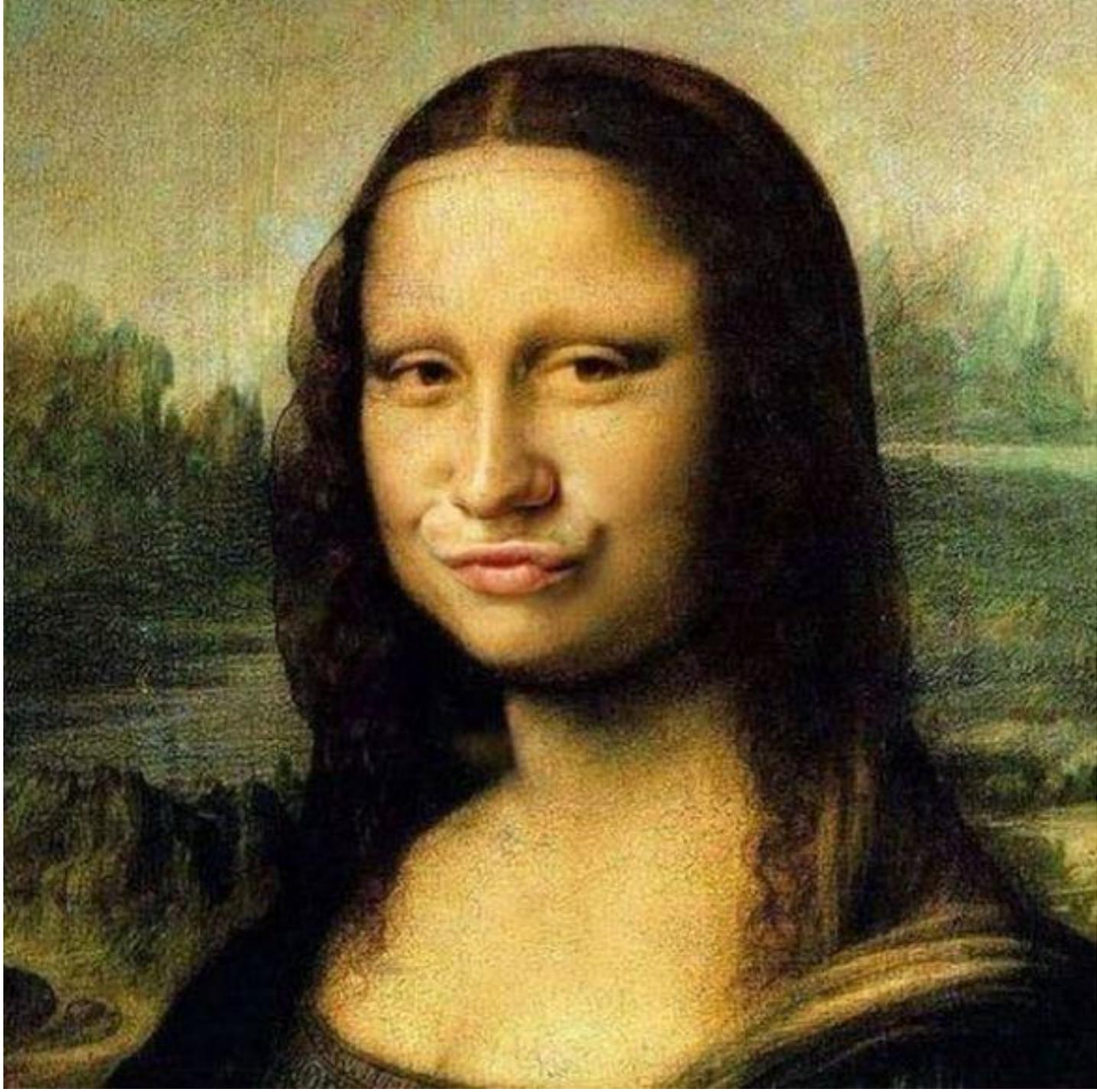


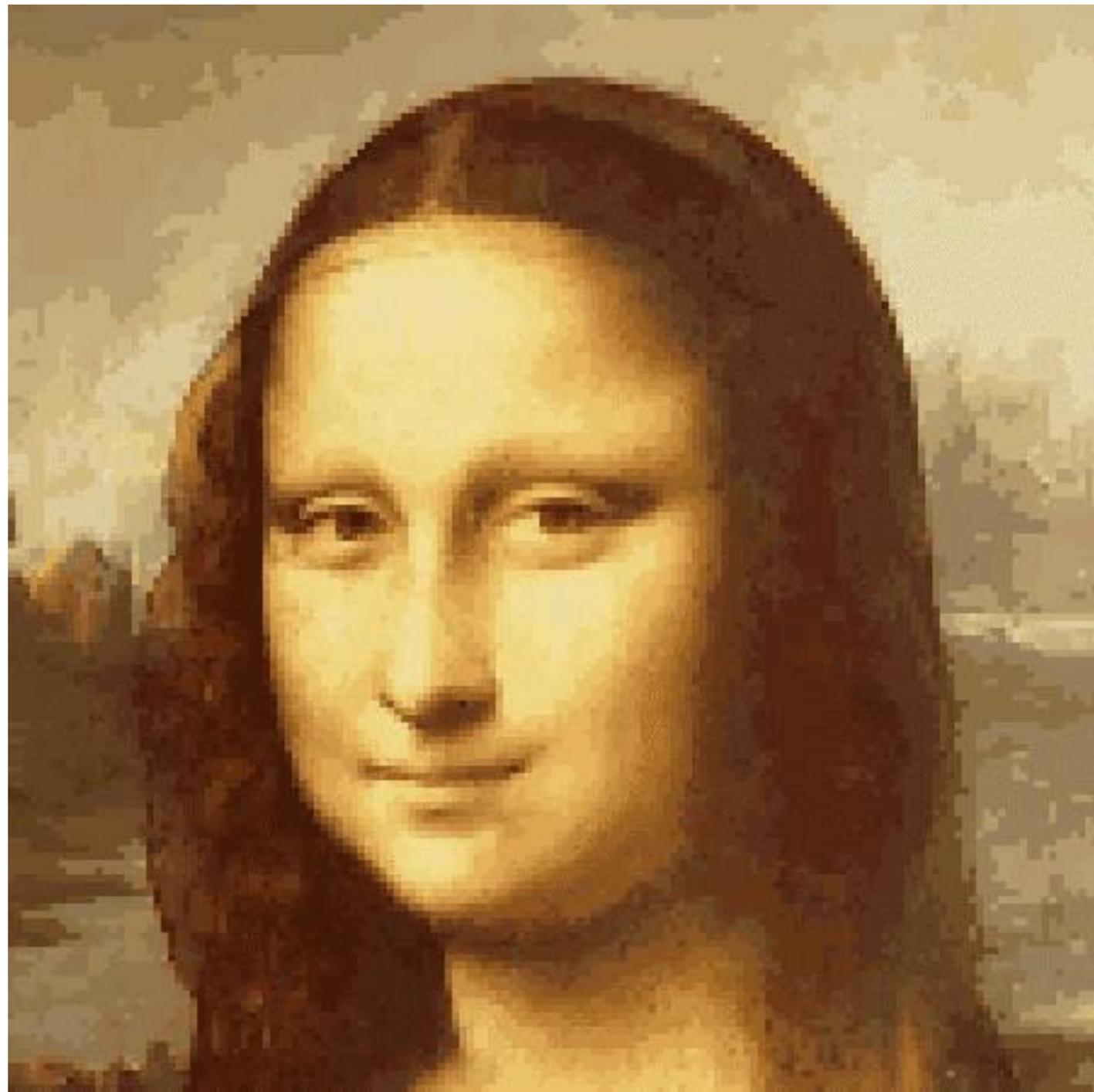


uzzle®

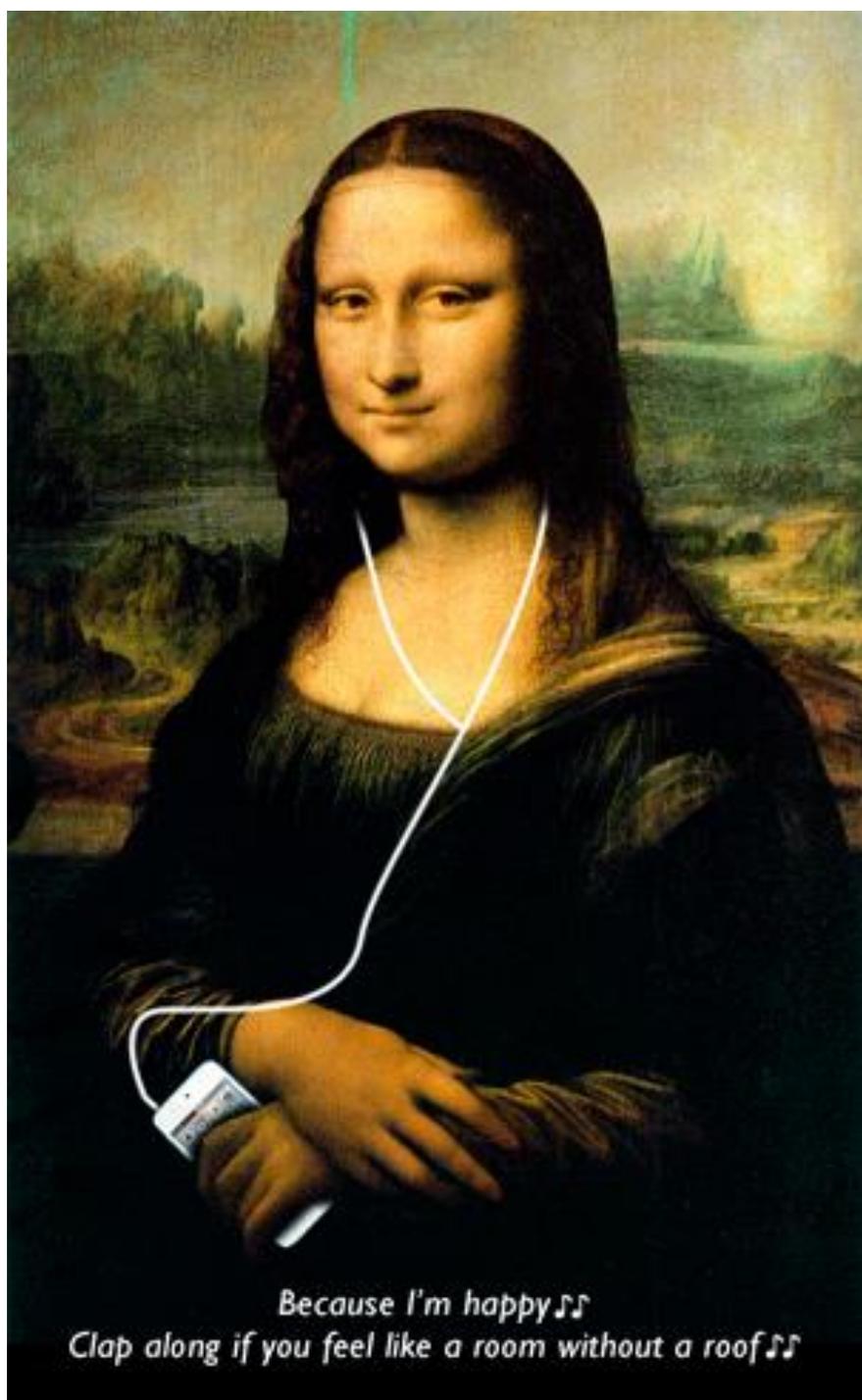












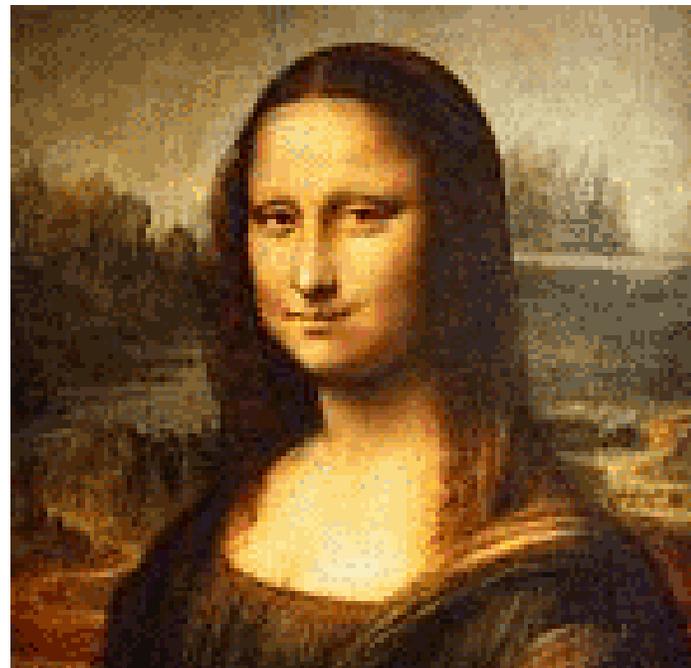
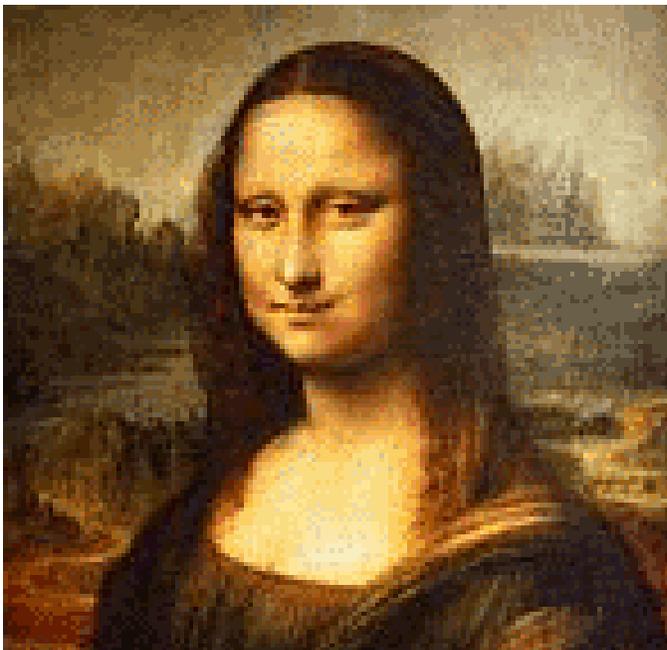
*Because I'm happy ♪♪  
Clap along if you feel like a room without a roof ♪♪*



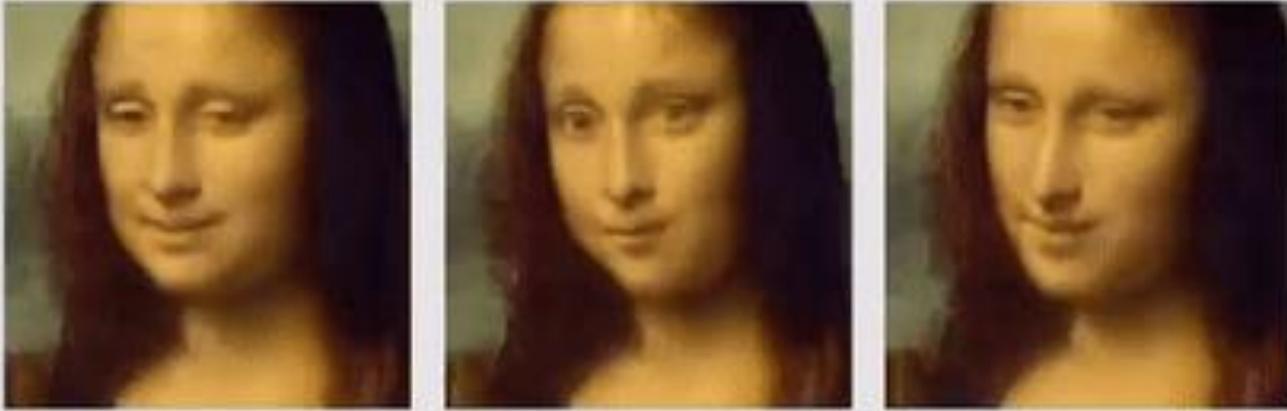
Monday Lisa



*Just another day on the job...*



# Living portraits



THE END !

# BIBLIOGRAPHY

[THE CODEX ATLANTICUS CONTAINS 1,119 of  
http://www.codex-atlanticus.it/#/](http://www.codex-atlanticus.it/#/)

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[https://en.wikipedia.org/wiki/Personal\\_life\\_of\\_Leonardo\\_da\\_Vinci](https://en.wikipedia.org/wiki/Personal_life_of_Leonardo_da_Vinci)