DA VINCI DUCHAMP, même

CHANGE*chance*_ The Duchamp Paradigm
Essays by L. Brandon Krall

PERPETUUM*mobile*_ Enchanted Domain
Installation by L. Brandon Krall

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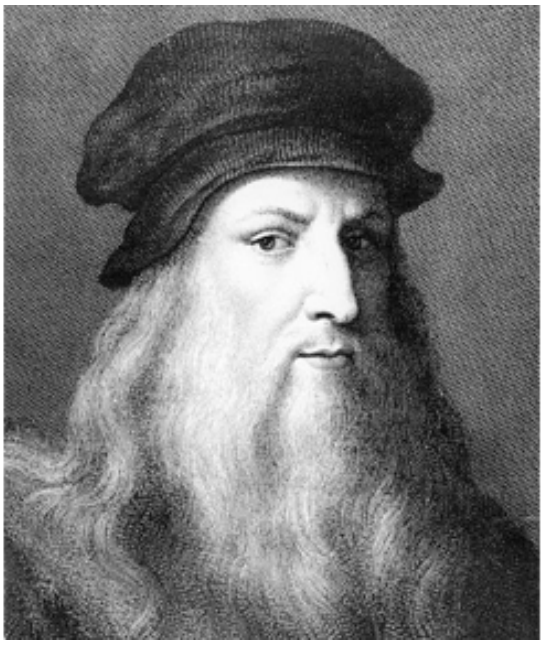
Art is never finished, only abandoned.[1]

Robert Henri Marcel Duchamp, 28 July 1887 – 2 October 1968. Photographed by Alfred Stieglitz, 1915[2]



Leonardo di ser Piero da Vinci, 15 April 1452 – 2 May 1519. Etching from the 1700s[3]

Marcel Duchamp	*Shared Characteristics*	Leonardo Da Vinci
Right handed	*Handsome // Charismatic*	*Left handed*
Tobacco smoker	*Mathematical*	*Vegetarian*
Chess player	*Musician*	*Naturalist / Cartographer*
Designed installations	*Trained in visual arts*	*Designed spectacles*
Optics // Stereoscopy	*Studied perspective*	*Study of vision // Mirrors*
Cast sculpture	*Kept notes…*	*Cast sculpture in bronze*

[1] "The Notebooks of Leonardo Da Vinci," translated by Jean Paul Richter, 1888. Online at Project Guttenberg: http://www.gutenberg.org/cache/epub/5000/pg5000.html

[2] Alfred Stieglitz, photograph of Marcel Duchamp, 2015.

[3] Antonio Francesco Gori's, *Museum Florentium*, is a 12 volume compendium of engravings made after works in Florentine collections and published in 1731-66 by Francisco Moücke. They were drawn by Giovanni Domenico Campiglia and engraved by Pietro Antonio Pazzi.

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> *Yes, I consider painting as a means of expression, not an end in itself. One means of expression among others, and not a complete end for life at all; in the same way I consider that color is only a means of expression in painting and not an end. In other words, painting should not be exclusively retinal or visual: it should have to do with the gray matter, with our urge for understanding. This is generally what I love. I didn't want to pin myself down to one little circle, and I tried at least to be as universal as I could.*[4]

Mapping the lines that run between Leonardo Da Vinci and Marcel Duchamp, it is the call to *universality* which each man addressed in their life and works that may be the deepest strata of similarity between them. Both men had notaries for fathers, whose professions in France and Italy were legal and political so that their families were prosperous and socially well respected. This financially secure background was a demonstrable influence in each man's life. It may be coincidental that both men were noted for their physical grace, personal attractiveness and wit and deserves to be noted.

Marcel Duchamp learned about Leonardo Da Vinci through his two elder brothers, his education and the cultural milieu of France, as the Belle Époque turned into the 20th century; Duchamp was thirteen years old in 1900. In the late 1800's Walter Pater in England and Paul Valéry in France were popularizing discussions about the character and accomplishments of Leonardo. Translations of his *Treatise on Painting* were widely read during that revolutionary era at the turn of the century, when social, political, medical and technological invention was rapidly evolving. These times altered definitively the quality of life throughout the world and the conditions of what constitutes human civilization. Leonardo Da Vinci had been rediscovered and he was highly regarded in Western culture in the early 20th century, a period in the arts that is widely referred to as Modernism, and his popularity continues today in the 21st century.

For the sake of accuracy historians refer to Leonardo Da Vinci as "Leonardo" saying that to call him "Da Vinci" is not using a name, but merely saying "from Vinci." It is Leonardo's notes, manuscripts, drawings and art works, those known and others lost or never realized, designs for pageants, costumes and war machines, aerial perspective maps, water, light and shadow studies, parables, sketches, advise on architecture, and a myriad of images in the considerable mass of what remain of his copious production[5] that attracts people to his history. In particular, the nature of Leonardo's character and humanity as a leading light of the Italian Renaissance, and the variety and innovative originality of many of his discoveries,

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[4] "Interview by James Johnson Sweeney," *Museum of Modern Art Bulletin* (1946) p. 135.

[5] Remarkable access in Italian and English is provided by two Italian web sites where visitors may see actual facsimiles of his notebooks and manuscripts, and read modern translations of Renaissance era texts:
Biblioteca Leonardiana http://www.bibliotecaleonardiana.it
e-Leo http://www.leonardodigitale.com/index.php?lang=ENG

as well as the quality of his actions and the philosophic intelligence these demonstrate, that continues to fascinate people today. Along similar lines, it is the nature of his creations, character and intentions that continues to draw people to contemplate the life and works of Marcel Duchamp.

This exegesis was composed to re-present a range of observations and assertions about the similarities between Leonardo Da Vinci and Marcel Duchamp. Observations about their shared interests in opticality and taking a broad approach to the arts and sciences have been assembled below. Many of the reasoned observations published by esteemed art historians, and references made by Marcel Duchamp himself in a few direct statements are examined, with the addition of new materials to expand an understanding of both artists. It is likely that Leonardo's concept of *universality,* which is reimagined and examined by Paul Valéry in his celebrated work, *Introduction à la méthode de Léonard de Vinci,*[6] was a notable influence on Duchamp and his generation in France. After considering these points one may assume, that with characteristic levity, Cartesian doubt and a sense of the importance of *originality*, Duchamp evolved his unique trajectory after specific examples left by Leonardo.

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Robert Henri Marcel Duchamp was born into a family that favored visual arts and music. His mother's father, Émile Frédéric Nicolle,[7] was a noted etcher of scenes of the city of Rouen. Marcel's two elder brothers Jacques Villon and Raymond Duchamp-Villon were established artists in the social milieu of Paris where they were living at the turn of the century, when Marcel turned thirteen years old. Ten and eleven years older than Marcel, each brother had decided to change his family name in honor of François Villon[8] a Medieval French poet whose largely autobiographical writings were much admired and have been translated into many languages. The six Duchamp brothers and sisters were supported during their adulthood with a livable stipend from their father Eugene and their mother Lucie. What was not paid to them during their parent's lifetime was deducted from their inheritance and this enabled the three brothers and Marcel's sister Suzanne, to pursue their lives as artists.

Marcel's older brothers, Jacque and Raymond with their wives had established themselves in a complex of buildings located outside of Paris in the suburb of Puteaux. An immediate

[6] This text was published in 1919 and augmented with two subsequent books. It is available online in French at this link: https://archive.org/details/introductionla00valuoft

[7] Émile Frédéric Nicolle at Wikipedia
https://fr.wikipedia.org/wiki/%C3%89mile_Fr%C3%A9d%C3%A9ric_Nicolle

[8] François Villon, wikipedia: https://en.wikipedia.org/wiki/Francois_Villon

neighbor in the complex was the exceptional Czeck artist, František Kupka,[9] who had studied at the Academie Julien, where Marcel also studied years later. Kupka was developing an abstract form of painting, and he made a living as a caricaturist. Both he and Marcel shared an interest in Leonardo Da Vinci. The elder Duchamp brothers held weekly gatherings in Puteaux that attracted Guillaume Apollinaire, Francis Picabia, Jean Metzinger, Henri Gleizes, Robert Delaunay, Alexander Archipenko, their brother and the wives and women associated with a group of mathematicians and intellectuals. Many of the painters exhibited together in the "Salon de la Section d'Or"[10] exhibition of 1912, became known as the "Puteaux Cubists." The title refers to the *golden section,*[11] an element of geometry, that Jacques Villon remarked he had chosen to reference his interest in the works of Leonardo. His eldest brother Jacques Villon, was living in Paris when Marcel moved there to attend the Academie Julien, where he says he spent most of his time playing pool. Villon had established himself with *Le Rire* and *Le Courier* as a caricaturist/cartoonist, as had Kupka, and they got Marcel engaged as a cartoonist as well. For many visual artists the ability to draw well from life comes naturally, as it did to Duchamp who by the age of fifteen was exceptional. Duchamp's pen and ink cartoons were satirical comments on social mores and women's issues.[12] In this way he was known before his abstract paintings were developed. It was the tendency among advanced artists in the early 20th century to abandon realistic rendering, perspective and modeling light and volume after the classical Renaissance models. This was one of the reasons Duchamp stated, that in 1915 chose to unlearn his skill as a draftsperson and to use a mechanical drawing kind of style when he embarked on the studies that led to the invention of *The Large Glass*.[13]

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What was known (of what remained) of Leonardo's notes, manuscripts and drawings from the mid 19th century on, were being studied, organized and presented in a number of publications with translations into modern French, Italian and English. "In Duchamp's own circle, in the years before World War I, there was a strong interest in Leonardo's art and theoretical writings; Péladan's translations in 1910 made easily available his treatises on landscape and on painting. We know that the famous *Treatise on Painting* was read at

[9] František Kupka https://en.wikipedia.org/wiki/Franti%C5%A1ek_Kupka Kupka was on closer terms with Marcel and shared an interest in Leonardo and also probably Eastern philosophy. In 1931 Kupka was a co-founder of the "Abstraction-Création" group. Margit Rowell's article, "Kupka, Duchamp and Marey" in Studio International, Jan/Feb. 1975 Vol. 189, page 48, is exceptionally good.

[10] Section d'Or Wikipedia: https://en.wikipedia.org/wiki/Section_d%27Or

[11] The Golden Ratio, Wikipedia https://en.wikipedia.org/wiki/Golden_ratio

[12] See, *Madame Cure, Female taxi driver*, and *Young Man* drawing of friend's wife, garconne style.

[13] The Bride Stripped Bare by Her Bachelors, Even (*La mariée mise à nu par ses célibataires, même*) https://www.philamuseum.org/collections/permanent/54149.html

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Puteaux, where Duchamp, his brothers and their friends gathered to discuss art and science, and our source of information is Duchamp himself.[14]

The newest biography of Leonardo by Walter Isaacson[15] places particular emphasis on lost history, that which can be gathered from circumstantial evidence like diaries and written accounts, from the Quattrocento. He underlines Leonardo's involvement in court life, where he and his studio-household were supported by wealthy and political patrons. In that context, Leonardo as a personality, designer and producer of special effects for celebrations and spectacles and his activities as a creative genius were outstanding. Of particular interest was Leonardo's design, and probable construction, of a lion automaton for a ceremony to welcome the King of France to Italy. The lion walked a few steps toward the King and then the head opened to reveal a bouquet of lilies, the symbol of France (the fleur-de-lys).[16]

Leonardo Da Vinci, Drawing of lilies for an Annunciation, late 1400s.

[14] Duchamp & Leonardo: L.H.O.O.Q.-Alikes, by Theodore Reff, Art In America, 1977, Vol. 65, January-February, which p. 82-93. Footnote 9 in support of "Duchamp himself." The source is "Raymond Duchamp-Villon," Intro. by George H. Hamilton, with notes Wm. C. Agree, M. Knoedler & Company, Inc. 1967, Walker and Company, NY. *Manuscript Notes, Part III and Manuscript Notes, Part III and V, pp. 111-112.*

[15] Isaacson, Walter, LEONARDO DA VINCI, Simon & Schuster, NY, 2018.

[16] Historian Martin Kemp provides a fuller picture of Leonardo's life and activities in the several courts where he was engaged in, *Leonardo*, 2011 (revised edition), Oxford University Press, London.

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Isaacson makes a useful observation about the effect of movement in Leonardo's drawings, and actually mentions Duchamp in one sentence, without going into depth:

> Leonardo had long been fascinated by horses, which he obsessively drew and even dissected when he worked on the equestrian monument for Ludovico Sforza in Milan. In his preparatory drawings for the *Anghiari* mural, he reengaged in the subject. His possessions at the time include "a book of horses sketched for the cartoon," and they display the same intensity of motion and emotion as the human faces he drew, Vasari was among those impressed by how Leonardo was able to make the horses as much a part of the physical and emotional battle as the humans... In one of these drawings, Leonardo used a frenzy of chalk strokes to combine two sequential instants, like a stop-action photographer or a precursor to Duchamp. The technique allowed him to convey the horse's wild lurching and lunging as it engaged in the battle with an intensity equal to that of its rider. In his best drawings Leonardo amazes us by capturing the world precisely as an observant eye would see it... "They are among the greatest evocation of movement in the entire history of art," the British art critic Jonathan Jones wrote. "Movement, something that had obsessed Leonardo ever since he had tried to catch the blur of a cat's squirming limbs in an early drawing, is here clarified as a theme with blood-red intensity.

A study for an equestrian monument. Metal point on blue prepared paper.
Verso: Pen and ink | 15.2 x 18.8 cm (sheet of paper) | RCIN 91235
Royal Collection Trust / © Her Majesty Queen Elizabeth II 2018

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This representation of movement found in many of Leonardo's drawings and compositions can easily be cited as a precursor to chronophotography.[17] This is supported by his acute observations about vision itself and it is well known that Leonardo studied optics and optical effects. Martin Kemp provides the following description (taken from Leonardo's notes) on how motion becomes visible in rapidly moving objects, like a spinning wheel.

> His increasing knowledge of the very impressive medieval writings on optical science, in the succession of Ibn al-Haytham (Alhazen), the Islamic philosopher active at the end of the tenth and the beginning of the eleventh centuries, also lead him to a greater understanding of 'visual delusions'. This branch of optics dealt with such general phenomena as our inability to see something moving too fast, and to perceive clearly anything that was overwhelmingly bright or excessively dark. It also explained such specific effects as 'persistence of vision', which occurs when we look at something moving rapidly. Leonardo described the oscillating appearance of a knife struck in a table and twanged from side to side, just like (as he said) the vibrating string of a lute. He also notes that a whirling firebrand leaves a circular trail of light in our eye, and that we can see through the spokes of a revolving wheel.[18]

The term *chronophotography* was coined in the nineteenth century by the Frenchman Étienne Jules Marey.[19] Marey began to work as a physiologist studying the human body using materials and machines available in the early 1800s and he eventually used photographic media to observe bodies in motion. Marey filmed a variety of animals in motion, including birds.[20] He made a physical model of a bird in flight (one of the best known works by Leonardo are his drawings of the flight of birds) and in 1873 Marey published a book of photographs titled, *La Machine animale*.[21] This title echoed a popular idea spawned by René Descartes[22] in the 1700s and widely entertained by people during the Industrial Revolution. To paraphrase, it was the idea that animals do not have souls but are repetitive and predictable machines. This idea which was taken up by many in the scientific community led to cruel abuses of both animals and human beings to whom this misleading interpretation was eventually applied in the industrial revolution.

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[17] Chronophotography Wikipedia: https://en.wikipedia.org/wiki/Chronophotography,

[18] Martin Kemp, *Leonardo*, 2011 (revised edition), Oxford University Press, pp.61-62.

[19] Étienne Jules Marey, Wikipedia: https://en.wikipedia.org/wiki/%C3%89tienne-Jules_Marey

[20] Leonardo Da Vinci, of course, is known for his deep involvement with the question and experimentation on the possibility of human flight; his notes and drawings of birds are well known.

[21] Étienne Jules Marey, La machine animale, 1873:
https://ia800300.us.archive.org/32/items/lamachineanimale00mare/lamachineanimale00mare_bw.pdf

[22] La Machine Animale, wikipédia https://fr.wikipedia.org/wiki/Animal-machine

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The Englishman Eadweard Muybridge was also an inventor of a form of chronophotography and of devices to produce visual animations. His best known experiments employed multiple cameras triggered in linear sequences. Working in California, it was Muybridge who took the photographs in 1872, that provided an affirmative answer to the wager of whether a horse's hooves, when at a full gallop, were all off the ground at the same time.[23]

Returning to the representation of objects in motion in visual art, consider Duchamp's abstraction of forms in the paintings, *Nude Descending a Staircase*, *Sad Young Man on a Train*, and *King and Queen Surrounded by Swift Nudes*. These and other of his works demonstrate the influence he acknowledged of chronophotography on his work at the time, but his representation of the visual is concerned with his conception of the material of reality itself; visualization of invisible forces and the passage of time. Margit Rowell's insightful article, *Kupka, Duchamp and Marey*[24] provides this important observation about the works of both Kupka and Duchamp at a critical passage in the development of their individual bodies of work.

> Kupka was drawn toward movement through his interest in science which had taught him that nothing in life is still. Kupka found Cubism colourless, lifeless, static. Duchamp, a much younger man, was intrigued by Cubism but sought to develop his own interpretation of it. Like Muybridge, the cubist painter moved around his subject. Whereas Duchamp and Kupka induced the subject to move before their eyes.

Interviewed in 1946 by James Johnson Sweeney[25] Duchamp responded to questions about the representation of multiplied limbs, and a connection to paintings by the Italian Futurists, which was a contentious issue among the Puteaux Cubists at the time:

> …The Futurists held their first exhibition at the Galerie Bernheim Jeune in January 1912. I was painting the *Nude* at the same time. The oil sketch for it, however, had already been done in 1911. It is true I knew Serverini. But I was working quite by myself at the time – or rather with my brothers. And I was not a café frequenter. Chrono-photography was at the time in vogue. Studies of horses in movement and fencers in different positions as in Muybridge's albums were well known to me. But my interest in painting the *Nude* was closer to the Cubists' interest in decomposing form than to the Futurists' interest in

[23] Muybridge, informative reference with animation: http://agilewriter.com/Biography/Muybridge.htm

[24] Margit Rowell, *Kupka, Duchamp and Marey*, Studio International, March 1978, pp. 48-51.

[25] "Eleven Europeans in America," James J. Sweeney, *The Museum of Modern Art Bulletin* 13, no. 4/5 (1946) 19-21. Special issue. Supplemented by 1956 interview, a Duchamp-Sweeney kinescope, in television archive of the Museum of Modern Art. [The interview is reprinted in *Marcel Duchamp Salt Seller: The Writings of Marcel Duchamp*, edited by Michel Sanouillet and Elmer Peterson, 1973 Oxford University Press, New York.

suggesting movement, or even to Delaunay's *Simultaneist* suggestions of it. My aim was a static representation of movement - a static composition of indications of various positions taken by a form in movement – with no attempt to give cinema effects through painting...

Futurism was an impressionism of the mechanical world. It was strictly a continuation of the Impressionist movement. I was not interested in that. I wanted to get away from the physical aspect of painting. I was much more interested in recreating ideas in painting. For me the title was very important. I was interested in making painting serve my purposes, and in getting away from the physicality of painting. For me Courbet had introduced the physical emphasis in the XIX century. I was interested in ideas, not merely in visual products. I wanted to put painting once again at the service of the mind. And my painting was, or course, at once regarded as 'intellectual' 'literary' painting. It was true I was endeavoring to establish myself as far as possible from 'pleasing' and 'attractive' physical paintings. That extreme was seen as literary…

Dada was an extreme protest against the physical side of painting. It was a metaphysical attitude. It was intimately and consciously involved with 'literature.' It was a sort of nihilism to which I am still very sympathetic. It was a way to get out of a state of mind – to avoid being influenced by one's immediate environment, or by the past: to get away from clichés – to get free. The 'blank' force of dada was very salutary. It told you 'don't forget you are not quite so "blank" as you think you are.' Usually a painter confesses he has his landmarks. He goes from landmark to landmark. Actually he is a slave to landmarks – even to contemporary ones.

Dada was very serviceable as a purgative. And I think I was thoroughly conscious of this at the time and of a desire to effect a purgation in myself. I recall certain conversations with Picabia long these lines. He had more intelligence than most of our contemporaries. The rest were either for or against Cézanne. There was no thought of anything beyond the physical side of painting. No notion of freedom was taught. No philosophical outlook was ever introduced. The Cubists, of course, were inventing a lot at the time. They had enough on their hands at the time not to be worried about a philosophical outlook; and Cubism gave me many ideas for decomposing forms. But I thought of art on a broader scale. There were discussions at the time of the fourth dimension and of Non-Euclidean geometry. But most views of it were amateurish. Metzinger was particularly attracted. And for all our misunderstandings through these new ideas we were helped to get away from the conventional way of speaking – from our café and studio platitudes…

It was fundamentally Roussel who was responsible for my glass, *La Mariée mise à nu par ses célibatires, même*. From his *Impressions d'Afrique* I got the general approach. This play of his which I saw with Apollinaire helped me greatly on one side of my expression. I saw at once I could use Roussel as an influence. I felt that as a painter it was much better to be influenced by a writer than by another painter. And Roussel showed me the way...

My ideal library would have contained all Roussel's writings – Brisset, perhaps Lautreamont and Mallarmé. Mallarmé was a great figure. This is the direction which art

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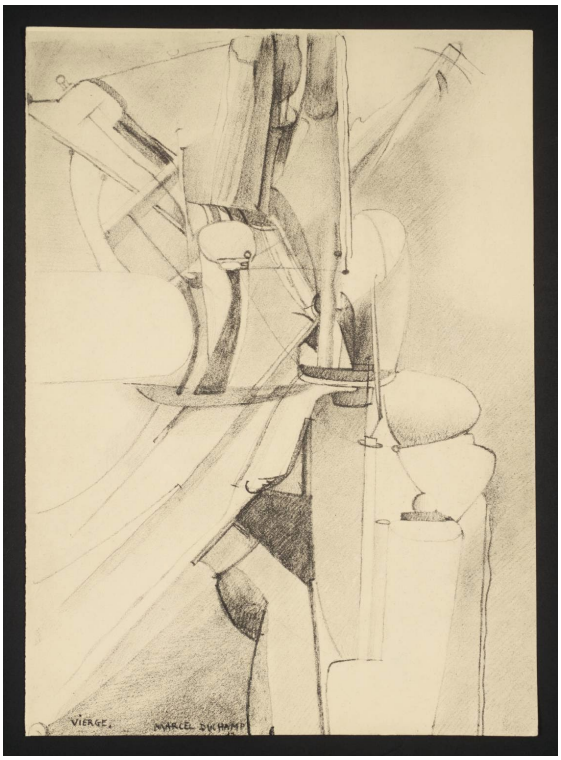
> should turn: to an intellectual expression rather than to an animal expression. I am sick of the expression '*bête comme un peintre*' – stupid as a painter."

The most important connection to make, among these classic statements, is that an unconscious influence on both Duchamp and the Italian Futurists, which neither acknowledged, was of course Leonardo Da Vinci. Leonardo developed a living quality in his *contraposto* compositions and in his drawings and sketches showing movement through rubbed out and redrawn limbs depicting successive stages of motion. Movement and the passage of time are seen in Leonardo's drawings of horses, sketches of human bodies at work or gesturing, and it is exactly these qualities of suggested movement that are noted in Leonardo's diagram for an exegesis on architecture called, "Vitruvian Man." The rendering of fluid movement is one of the most distinctive qualities admired in works of the Italian Renaissance; and it was these classical influences of past European masters that artists at the turn of the 20th century intentionally rejected, for pure ideas, abstraction and the flattening of space in their imagery.



Marcel Duchamp, Vierge, 1912.

In 1912 Marcel Duchamp was twenty-five years old and had spent the summer living and traveling in Germany; he was making drawings of virgins and brides that preceded his work on the *Large Glass*. Upon his return to France from Germany in 1912 he painted the *Nude*

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descending a staircase, which he offered for exhibition at the fall Salon des Indépendents, in which he was entitled to show because of his past record of exhibitions there. But when his brothers and other painters from the Puteaux Cubist group asked him to withdraw the painting from the exhibition or to change the title because of their antipathy to the Italian Futurist influence, Duchamp went to the venue and without speaking to anyone removed the painting, and himself, from the art world he knew and believed to be advanced, stating later that he would never again participate in groups.

Through a relative of his friend Francis Picabia, in 1913 Duchamp was offered and he took a job at one of the great libraries of the world, the Bibliothèque Sainte-Geneviève[26] in Paris. He worked and studied there for a year, until the end of 1914 after the First World War had begun. Both of his brothers and his sister Suzanne had enlisted in the war effort but Duchamp was rejected from service due to a heart condition and in 1915, without telling his family, he accepted an invitation to go to live in New York from Walter Pach, one of the curators of The Armory Show that had taken place in New York in 1913. While working at the Bibliothèque Sainte-Geneviève, Duchamp also studied perspective, which was to inform the construction of *The Large Glass*, a magnum opus that he commenced after moving to New York in 1915.

At the library, painted on the wall behind the Staircase of Honor[27] is a mural sized re-creation of Raphael's fresco, the "School of Athens."[28] The painting is an important feature of the library interior, rendered in sharp perspective to create the illusion of infinite space, and it features the central figures of Plato and Aristotle at the vanishing point. The image of Plato is considered to be a portrait of Leonardo Da Vinci, who is shown with his hand pointing to the heavens in a gesture that is a motif in Leonardo's drawings and paintings.

Related to the gesture of a pointing hand in European art, research suggests that the symbol of a hand pointing directly at an object, was first used in a known work and an invention of Leonardo. Despite the extensive use of gesture in art of the middle ages, and the codification of specific hand gestures as symbols in Christian art works dating from before Giotto, it was Leonardo, in the first version of *The Madonna of the Rocks*, who appears to have established

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[26] Bibliothèque Sainte-Geneviève http://www.bsg.univ-paris3.fr/mieux-connaitre-la-bsg/architecture/la-facade-2

[27] L'escalier d'honneur - Bibliothèque Sainte-Geneviève http://www.bsg.univ-paris3.fr/mieux-connaitre-la-bsg/architecture/lescalier-dhonneur-2 The mural in Paris: https://historyoflibraryarchitecture.wordpress.com/19th-century/bibliotheque-sainte-genevieve/

[28] *School of Athens,* Raffaello Sanzio da Urbino, fresco, Stanze delle Segnatura, Apostolic Palace, Vatican City, 1509-1511. Wikipedia https://en.wikipedia.org/wiki/The_School_of_Athens http://www.museivaticani.va/content/museivaticani/en/collezioni/musei/stanze-di-raffaello/stanza-della-segnatura/scuola-di-atene.html

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the sign of a pointing hand as a symbol, which is also found in two of his drawings.[29] The side view of a hand with extended index finger, evolved to become a ubiquitous symbol in public signage and graphic design today.

Leonardo Da Vinci, *The Virgin of the Rocks*,
1483-1486, Louvre Museum, Paris.

Art historian Moische Barach in "Giotto and the Language of Gesture" gives exacting analysis to the evolution and examples of hand gestures represented in pre-renaissance painting. In 2005 author William H. Sherman published his detailed research with many amusing elements titled, "Toward a History of the Manicle."[30] These texts provide extensive background on the question of where the "sign of the pointing hand" first arose.

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29 Presented in, "The Sign Painter's Hand," in the *CHANGEchance_ The Duchamp Paradigm* series.
30 http://www.livesandletters.ac.uk/papers/FOR_2005_04_001.pdf

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Raphael Sanzio da Urbino, *The School of Athens*, 1509-1511.

It seems likely that Duchamp would have used the spacious two-sided staircase in the Bibliothèque Sainte-Geneviève and seen the wall painting after Rafael's most famous fresco, during the period of a year that he worked at the library. Raphael Sanzio da Urbino's,[31] *School of Athens* depicts the concept of philosophy. It supposedly depicts each of the ancient Greek philosophers as contemporary men in the arts, and is the best known of four superb frescos in the Stanze delle Segnatura[32] which is located in the Apostolic Palace in Vatican City. The four subjects are, *Disputation over the Most Holy Sacrament* (Theology); *School of Athens* (Philosophy); *Cardinal and Theological Virtues and the Law* (Law); and *Parnassus* (Poetry and Music). The *School of Athens* retains considerable mystery despite much conjecture and learned attempts to identify the figures of ancient Greek philosopher-scientists represented as contemporary men of the era, but identification cannot be conclusive. Raphael left no record and no historic accounts have been found to evidence the possible identities, however, Raphael himself is considered to be in a group in the middle ground at the right, wearing a

[31] Raphael Sanzio da Urbino, wikipedia: https://en.wikipedia.org/wiki/Raphael

[32] Room of the Segnatura containing Rapahel frescos: http://www.museivaticani.va/content/museivaticani/en/collezioni/musei/stanze-di-raffaello/stanza-della-segnatura.html

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black hat, similar to that in his known self-portrait.[33] Historians feel certain that the central figure on the left is of Plato, holding his book *Timeaus,* pointing to the heavens and wearing a long beard as a representation of Leonardo. The figure on the right is of Aristotle, holding his *Nicomachean Ethics,* the person referred to is not identified so far. Duchamp would have been confronted with this image of Leonardo, and its striking demonstration of perspectival rendering while he worked at the library, and he stated that he studied perspective while he worked there.

The subject of Duchamp's interest in perspective is analyzed in depth in a fascinating article by Jean Clair, "Duchamp and the Classical Perspectivists."[34] Clair provides this basic information at the beginning of a brilliant discussion of the historical record of the development of Western perspective, generated by his enlightening analysis of Duchamp.

> Time and again, Duchamp insisted that the *Large Glass* was also (perhaps even in the first place) a consideration on perspective. When Pierre Cabanne asked him how he had arrived at the idea, he replied, "Perspective was very important. The Large Glass is actually a rehabilitation of perspective, which had been completely neglected and decried. With me, perspective became absolutely scientific. . . It was scientific mathematical perspective. . .based on calculations and measurements." To Richard Hamilton he likewise admitted: "The projection [of each part of the Glass] in perspective [on the Glass] is a perfect example of classical perspective, I mean that I imagined the various elements of the bachelor machine first of all as arranged behind the Glass, on the ground, rather than as distributed over a surface in two dimensions."

Further in the article, Clair provides this critical insight which adds more illumination to a relation between Duchamp and classical perspective using one of Leonardo's arguments about a plane of glass found in his Notes:

> An obvious fact which needs to be stressed is that by substituting a plate of glass for an opaque canvas spread on a stretcher as a support, Duchamp was doing no more than applying the analyses of the classical perspectivists to the letter in making a real *pariete di vetro* (wall of glass). Their procedure was based on the definition of the picture plane as a plane intersecting the pyramid formed by the visual rays, whose apex is the eye of the observer, and whose base is the object to be represented. As Panofsky explained:

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[33] Raphael self-portrait. Wikipedia https://en.wikipedia.org/wiki/Self-portrait_(Raphael)

[34] Jean Clair, "Duchamp and the Classical Perspectivists," Artforum International, XVI/7 March 1978, pp. 40-49. This is a revised version of an article that originally appeared as "Duchamp et la tradition des perspecteurs," Abecedaire, Catalogue Marcel Duchamp. Editions du Musée National d'Art Moderne, Centre Georges Pompidou. Paris. 1977 Veil.

Da Vinci Duchamp, même

> We shall speak of a treatment of space as "perspective" in the full sense when, and only when, there is not merely a foreshortening of single objects such as houses or pieces of furniture, but the entire picture ... is transformed into a window as it were, through which we look into the space beyond, when therefore the material surface of the paint is negated as such and becomes simply a "picture plane" on which is projected the whole of that space seen beyond it and containing within itself all separate objects.

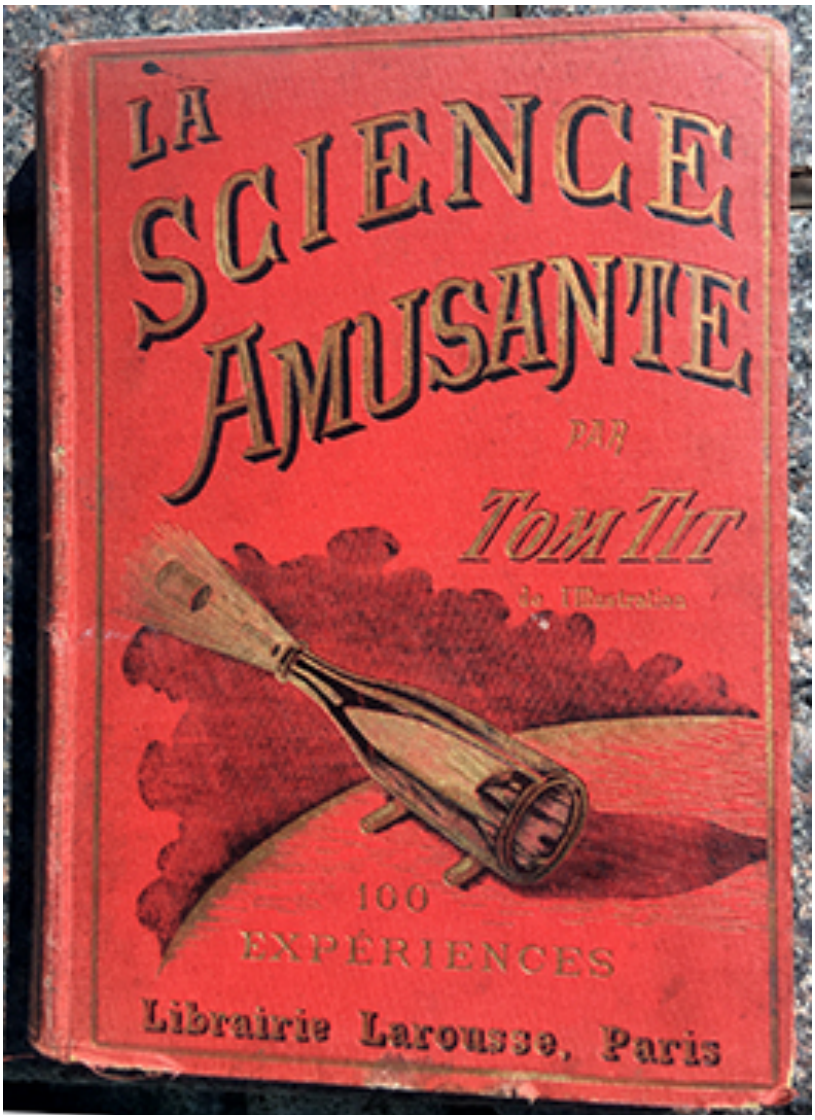
Clair discusses in detail the men and their works whom he identifies as the "classical perspectivists" including Nicéron who is named in Duchamp's White Box notes, and he analyses notable works by Duchamp in relation to the mechanics of perspective, in particular, *To Be Looked at (from the Other Side of the Glass) with One Eye, Close to, for Almost an Hour.*[35] We credit Rene Clair in his sophisticated article with the ripe suggestion of a reference to the popular children's book series, *La Science Amusante de Tom Tit*, by Arthur Good.[36] "One wonders whether Duchamp might not have had the opportunity at the *Bibliothèque Sainte-Geneviève*) to glance through this superb folio volume and other works and to find in Athanasius Kircher a person whose curiosity was akin to his own. Note Kircher's interest in optics (which led him to invent the magic lantern), his interest in acoustics and mechanical music and lastly his passion for the physical and mathematical games that made his *Ars magna sciendi* a kind of lettered ancestor of what at the turn of last century became *La Science amusante de Tom Tit* (a popular French children's book of "playful physics")."

Each of the three volumes of *La science amusante* contains "100 Experiences," and they were published in France in the late 1800s when Marcel was a young child. Perhaps these experiments, which are mind boggling to consider and marvelously illustrated with fine etchings, was a subconscious influence on the older Duchamp when he began to devise what he called "playful physics."

[35] In the collection of the Museum of Modern Art, New York https://www.moma.org/collection/works/78993

[36] *La Science Amusante par Tom Tit*, Arthur Good https://fr.wikipedia.org/wiki/Arthur_Good

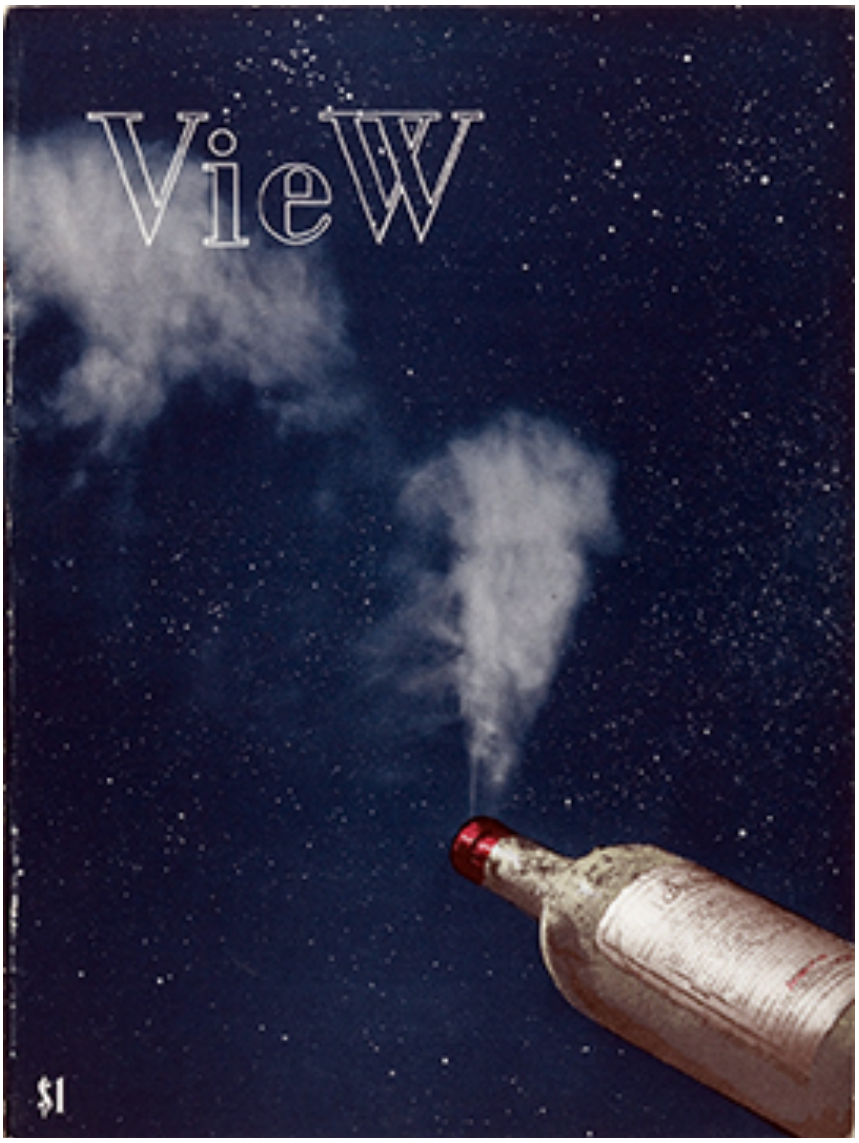
Da Vinci Duchamp, même



There is a remarkable similarity in the cover of the first volume of *La Science Amusante*, to the cover illustration of VIEW magazine, the Duchamp issue.[37]

[37] VIEW Magazine was published by Charles Henri Ford, the 1945 edition was about Marcel Duchamp https://www.guggenheim.org/blogs/findings/view-magazine-duchamp-futurists

Da Vinci Duchamp, même



In Duchamp's comments on the rejection of his painting *Nude descending a staircase*, he explains why he went to work at the library in a way that reveals his approach to art practice, and provides insight into his thinking about working on glass. Asked by Pierre Cabanne in 1967 why he abandoned painting, Duchamp replied:

> It came from several things. First, rubbing elbows with artists, the fact that one lives with artists, that one talks with artists, displeased me a lot. Here was an incident, in 1912, which "gave me a turn," so to speak; when I brought the "Nude Descending a Staircase" to the Indépendents, and they asked me to withdraw it before the opening. In the most advanced group of the period, certain people had extraordinary qualms, a sort of fear!

Da Vinci Duchamp, même

> People like Gleizes, who were, nevertheless, extremely intelligent, found that this "Nude" wasn't in the line that they had predicted. Cubism had lasted two or three years, and they already had an absolutely clear, dogmatic line on it, foreseeing everything that might happen. I found that naively foolish. So, that cooled me off so much that, as a reaction against such behavior coming from artists whom I had believed to be free, I got a job. I became a librarian at the Sainte-Geneviève Library in Paris.
>
> I made this gesture to rid myself of a certain milieu, a certain attitude, to have a clean conscience, but also to make a living. I was twenty-five. I had been told that one must make a living, and I believed it. Then the war came, which upset everything, and I left for the United States.
>
> I kept working on the "Large Glass" for eight years, working on other things in the meantime. I had already abandoned stretchers and canvas. I already had a sort of disgust for them, not because there were too many paintings or stretched canvases, but because, in my eyes, this wasn't necessarily a way of expressing myself. The "Glass" saved me, by virtue of its transparency.
>
> When you make a painting, even abstract, there is always a sort of necessary filling-in. I wondered why. I always asked myself "why" a lot, and from that questioning came doubt, doubt of everything. I came to doubt so much that in 1923 I said, "Good, that going well." I didn't abandon everything at a moment's notice, on the contrary. I returned to France from America, leaving the "Large Glass" unfinished. When I returned, a lot of things had happened. I was married in, I think, 1927; my life was looking up. I had worked eight years on this thing, which was willed, voluntarily established according to exact plan, but despite that, I didn't want it – and this is perhaps why I worked such a long time – to be the expression of a sort of inner life. Unfortunately, with time I had lost my fire in regard to its execution; it no longer interested me, no longer concerned me. So I had had enough of it, and I stopped, but with no abrupt decision; I didn't even think about it.[38]

The collection of the Bibliothèque Sainte-Geneviève also contains a copy of the facsimile edition of Leonardo's notes and manuscripts that was assembled by Charles Raviasson-Mollien and published in 1881 by the Institut de France. Given the craze at the time for all things Leonardo, it seems likely that Duchamp would at least have looked through them while at the library and learning about perspective. While modern artists were absenting perspectival rendering intentionally from their works; Duchamp's contemporaries including Kandinsky, the Russian Constructivists, Mondrian, Matisse and Picasso.

★ ★ ★

[38] "Dialogues with Marcel Duchamp," Pierre Cabanne, translated by Ron Padgett, Da Capo Press, New York, 1967-79, pp.17-18.

Da Vinci Duchamp, même

Historian Theodore Reff published, "Duchamp & Leonardo: L.H.O.O.Q.-Alikes" in Art In America in 1977.[39] It was one of the first significant efforts to delineate and to demonstrate a similarity between Leonardo and Duchamp. An engaging account of parallels which provides much relevant information, however, Reff falls into the trap of repeatedly asserting and embroidering on the idea that Duchamp had studied and intentionally used alchemical imagery in his work. Reff's article begins with a thorough summary:

> The idea of relating Duchamp to Leonardo is not new. Since the 1930s many people have sensed an affinity between his works and personality and those of the Renaissance master. The Surrealist Julien Levy remarked then that Duchamp's notes on dust-breeding resembled those in Leonardo's manuscripts, that both supposedly abandoned art to make inventions and that it was after all the *Mona Lisa* that Duchamp added his mustache to. Later Robert Lebel, author of monographs on both men, observed that "among all contemporary artists it is Marcel Duchamp who evokes Leonardo most irresistibly, even in his refusal to be simply a great painter"; and William Rubin discussed in some detail their attitudes toward the role of mathematics and science in artistic creation. Even the *New York Times* noted that, "in his own off-beat way Duchamp is beginning to look like a kind of Leonardo da Vinci," though it concluded, "the comparison, let us admit, is wildly forced." But is it really? When all the evidence is reviewed, the two artists turn out to have much more in common, both psychologically and artistically, than has been realized. And in some cases, Leonardo clearly influenced Duchamp—not in the obvious way that Cézanne or Fauvism did in his early years but in the hidden, deeply significant way characteristic of his maturity.

However useful, the article is flawed by a kind of subverted sensationalism and because Reff chose to follow the misguided lead of Arturo Schwarz, going to considerable length to present arguments as if they were plausible facts, insisting that Duchamp was pro-alchemy. Reff writes in detail how Duchamp had mirrored medieval alchemy in the *Large Glass*. He wrote, "... Sar Péladan, leader of the Rosicrucian movement, dwelled on Leonardo's alchemical practices and androgynous nature, aspects that would also interest Duchamp..." and, "Given their taste for the intellectual and the hermetic, it is not surprising that both artists were interested in, or later associated with, alchemy... there is clearly a connection between his *Young Man and Girl in Spring* and alchemical images of the hermetic androgyne (or union of the male and the female), just as there is a connection between his drawing *The Bride Stripped Bare by Her*

[39] Duchamp & Leonardo: L.H.O.O.Q.-Alikes, by Theodore Reff, Art In America, 1977, Vol. 65, January-February, pp. 82-93. All footnotes are provided in the article to the assertions made.

Da Vinci Duchamp, même

Bachelors and esoteric images of the stripping of the bride as symbolic of the purification of the "stone."[40]

Reff's assertions here are misleading and they distort the intentions of both Leonardo and Duchamp. Reff ignores Duchamp's noted characteristic inaction in response to critical commentary on his work, but with the exception of this very issue. In their recorded accounts both Leonardo and Duchamp each stated explicitly, that they did not believe in or follow alchemy; they each disassociated themselves from the field of alchemy.

In a footnote, Reff makes a reference to the extraordinary essay, "The Tortoise and the Hare"[41] by Roger Shattuck.[42] The information Reff gleaned from it and represents in his article in summary, seeks to explain Leonardo's widespread popularity. The relevant section from the Shattuck essay is given in full below:

> Which great thinkers or artists out of the past were receiving attention? Aristotle? Jesus? Dante? Montaigne? Goethe? All of them, of course; we know of no reliable method of measuring esteem so as to ascertain the culture heroes of an era. Yet one of the most elementary means of discovering about whom people were thinking, writing, and reading is to inventory the titles of books published. My investigations have yielded this hard result: between 1869 and 1919, an average of one full-length book per year was published in Europe on the subject of Leonardo Da Vinci. (The number excludes the numerous editions of Leonardo's own writings, and also excludes translations and the flood of articles in reviews.) The list of some fifty items includes the following names: Bernard Berenson, Jakob Burckhardt, Pierre Duhem, Sigmund Freud, Arsene Houssaye, Edward MacCurdy, Dmitri Merejkowski, Walter Pater, Péladan, Smiraglia-Scognamiglio, Gabriel Sealiles, Edmondo Solmi, Paul Valéry, and Lionello Venturi. If we set aside the institutionalized figure of Jesus, no other human being, historical or imaginary, appears to have received so much systematic and widely disseminated attention from Western culture during the fifty years under scrutiny. [43]

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[40] The footnote given here is to Schwarz's text.

[41] Online at: CHANGEchance_ The Duchamp Paradigm http://www.changechance.info/Shattuck-TortoiseHare.pdf

[42] Roger Shattuck was an extraordinary art historian and at some time president of the Pataphysical Society of which Marcel Duchamp was a member. Shattuck's classic work is, *The Banquet Years,* New York, Harcourt, 1958.

[43] Shattuck, Roger, "The Tortoise and the Hare" pp.13-114, Higham, John, and John Weiss. 1965. *The origins of modern consciousness: essays*. Detroit, Mich: Wayne State University Press.

Da Vinci Duchamp, même

Shattuck wrote the essay for a collection published in a book titled, *The Origins of Modern Consciousness: Essays,*[44] and it offers quite revelatory ideas. Shattuck compares the contributions of Paul Valéry and Sigmund Freud, each of whom examined the intellectual processes of Leonardo independently, in order to propose their approaches to mental acuity itself. Shattuck dives into what constitutes the artist-scientist's methods and his results, citing advanced 20th century physics. His advanced thinking in this essay, seeks to elucidate Leonardo's thought processes at a metaphysical level. He exposes Freud's misrepresentations (based on inaccurate translation of the Notes) of the nature of Leonardo's homosexuality, but Shattuck focuses on presenting the essence of Valéry's and Freud's conjectures on Leonardo's mental and intellectual development, and gives his own assessment of consciousness *per se*.

★ ★ ★

Historian Robert Golding in his collected essays, *Visions of the Modern*,[45] devotes Chapter 15 to Marcel Duchamp. He gives considerable thought and intelligent exegesis to possible connections between Duchamp's work and medieval alchemy, but Golding does not make false assertions. He acknowledges Duchamp's denial of any intentional connection with alchemy, despite the critical wave asserting it that was generated by Arturo Schwarz. Golding concludes his analysis with the following:

> A man of extraordinary honesty, Duchamp once denied that there was any conscious use of the imagery and symbolism of alchemy in his art, and it is possible that the parallels that exist are fortuitous or due to an unconscious attraction towards forms and images that are atavistic or archetypal in nature... On the other hand it is possible that Duchamp's denial arose from the fact that he was reluctant to have too much read into his art; quite obviously it was an art of extraordinary depth and subtlety, but he was anxious that each spectator should extract from it what he wished and he knew that any hard and fast explanation of the *Large Glass* was not only impossible but that an attempt to produce one could only serve to kill any true contact between himself and his viewer. [46]

Golding also discusses Duchamp's use of multiplied imagery:

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[44] *Op cit.*

[45] Visions of the Modern, 1994, John Golding, University of California Press, Berkeley and Los Angeles, California. pp. 265-310, footnotes 362-363.

[46] The reference is to page 73 in Robert Lebel's monograph of 1959. "When we asked him Duchamp merely replied: 'If I have practiced alchemy, it was in the only way it can be done now, that is to say without knowing it'." On the same page a paragraph above, is another a reference to Duchamp's denial of his interest in alchemy, "Yet since he has insisted, so far as he is concerned, on the 'absence of investigations of this sort', it should not be thought that Duchamp believes, were it only unconsciously, in the immortality of the soul."

Da Vinci Duchamp, même

The Cubist multiple viewpoint perspective, so wittily mocked in the *Coffee Mill*, has been replaced in *The Chocolate Grinder* by an extraordinarily skillful and lucid reversion to a traditional single viewpoint system, applied with a rigour and seriousness that recalls the art of the Quattrocento; and indeed Duchamp later came to consider that one of his most important innovations in art was the reintroduction of traditional Classical and Renaissance perspective into Post-Cubist art…

It must be borne in mind when looking at *The Large Glass* that just as the notes in the *Green Box* had been assembled in a deliberately random fashion, so Duchamp insisted that the elements in the *Glass* (and presumably those of the Bachelor Apparatus in particular) were conceived originally as being to a large extent interchangeable in their position and function. Inevitably, however, as work progressed each element achieved a more particularized role within the mechanism as a whole. When asked why he had never finished the work Duchamp pleaded boredom, but he probably also felt reluctant to freeze it into completion and felt that some of the mystery and vitality of the piece would disappear (for him at least) if he realized his plans through to the letter. Towards the end of his life Duchamp was persuaded, however, to execute an etching of *The Large Glass* as it would have been completed, and with the knowledge of how these elements would have fitted into the visual scheme, it is possible, always with the help of the notes, to describe the workings (or the non-workings) of *The Large Glass* as it exists in its present incarnation. Any description, no matter how lengthy, could, however, only be partial, given the complexity of the notes and the interchangeability of ideas and imagery.

...The lower half of *The Large Glass* was laid face downwards on the floor, dust was allowed to accumulate for several months, and was fixed on to the Sieves with mastic varnish (one is reminded of Leonardo's projects for using dust as a measure of time). The forms of the Oculist Witnesses, the only part of *The Large Glass* which doesn't figure in the original plans, and which relate closely to an important work of 1918, *To Be Looked at (from the Other Side of the Glass) with One Eye, Close to, for Almost an Hour* (Museum of Modem Art, New York), were taken from charts used by opticians (called in French *temoins oculistes*) and put into perspective: a drawing was done on carbon paper, transferred on to a silvered area, while the silver was subsequently scraped away from between the lines to leave behind the images; originally a magnifying glass was to have been embedded in the plate glass nearby to focus the 'splashes' (invisible). The Oculist Witnesses serves to involve the spectator in the mechanics of *The Large Glass*, we feel ourselves placed at the central axis of the ascending circular forms which are just below the level of our heads and shoulders - so that as in Alberti's ideal perspective both the beholder and the painted things he sees will appear to be on the same plane. [47]

[47] Robert Golding, Chapter 15, Duchamp: The Large Glass, pp. 297-298, 304.

Da Vinci Duchamp, même

★ ★ ★

Marcel Duchamp had a mathematical mind and over the turn of the century he followed with acute interest the rapidly evolving theatre of the sciences, as is admirably demonstrated in Linda Henderson's, *Duchamp in context: science and technology in the Large glass and related work,*[48] published in 2005. Henderson wrote extensively on the parallels and influences that exist between Leonardo and Duchamp in her informative and assiduously realized book, and she refers to the Ravaisson-Mollien edition of Leonardo's notes and manuscripts owned by the Institut de France, a copy of which was in fact in the collection of the Bibliothèque Sainte-Geneviève. The Ravaisson-Mollien edition is a magnificent large-scale set of six volumes containing facsimiles of Leonardo's notes and drawings. The pages are arranged so that on the left side of an open book one sees the facsimile image and across from it on the right is a translation of the texts from old Italian mirror script into modern French. Henderson wrote:

> Although he had explored mathematically related ideas more seriously than any other early twentieth-century artist, Duchamp by mid-century was aware that his personal and creative use of geometry was far removed from contemporary mathematics, and he hardly wished to claim prowess in the area. The contrast between science past and present was even more apparent. Although Duchamp had also been actively involved with contemporary science and technology, albeit transformed into a humorous Playful Physics, the issues of that early period—considered so "modern" at the time—had been almost completely displaced. Relativity theory and quantum physics had replaced classical ether physics and Rutherford's atom; television and radio had supplanted the wireless telegraphy that had served as a central theme of the *Large Glass*. It is little wonder, then, that in the 1960s Duchamp had "changed his tune."
>
> If Duchamp cited Seurat as an exemplar of a recent painter-scientist, Leonardo da Vinci, whom Duchamp did not name publicly at the time, served as a closer prototype for him in the prewar and wartime years. The figure of Leonardo loomed large in the early twentieth century, following publication of the first collected volumes of his manuscripts, which revealed an intellect equally at home in the realms of science and art. Between 1881 and 1891, Charles Ravaisson-Mollien had published a six-volume edition of Leonardo's manuscripts in facsimile with translations; that collection was followed by translations by Sâr Péladan, the *Textes choisis*: *Pensées, théories, préceptes, fables et fac*éties (1908) and the *traité de la peinture* (1910). It was against this backdrop

[48] Henderson, Linda Dalrymple, *Duchamp in context: science and technology in the Large glass and related works*. Princeton, N.J.: Princeton University Press, 2005.

Da Vinci Duchamp, même

> that Duchamp began to produce his own manuscript notes in 1912 and that he published his *Box of 1914*, a group of sixteen notes and one drawing reproduced in a photographic edition of about five examples. Significantly, whenever Duchamp published collections of his notes during his life, they, like the great Ravaisson-Mollien edition of Leonardo's manuscripts, were reproduced in facsimile.

In a chapter titled, "The *Box of 1914* and the Model of Leonardo's Science" Henderson outlines this connection in greater depth:

> Several authors have discussed the striking parallels between Duchamp and Leonardo, who was actually the subject of an oral examination Duchamp took as part of his certification as an art worker in 1905. Among the most prominent is each man's commitment to painting as a "mental thing," as Leonardo termed it, and to the process of intellectual exploration in extensive notes for works of art and scientific machines that might never be realized. Beyond their interest in science and technology, they also shared a number of other traits that have been noted by scholars: a precise, engineerlike drawing style and an interest in designing machines, a concern with optics and perspective, a desire to experiment with new materials and techniques (including dust), a belief in the validity of chance and accident in the creative process, a view of the human body in terms of its mechanical functioning, and personality traits such as secretiveness and a fascination with androgynous sexuality. The latter was manifested in Duchamp's irreverent Dadaist comment on Leonardo's *Mona Lisa* in his 1919 *L.H.O.O.Q.* (Private Collection, Paris) a "rectified" Readymade created by the addition of a mustache and goatee to a reproduction of Leonardo's painting, and in the vulgar pun produced when the letters of the title are pronounced in French.
>
> The iconoclastic attitude manifested in *L.H.O.O.Q.*, however, was not typical of Duchamp's thinking in the prewar years. In the face of the Puteaux Cubists' Bergsonian focus on intuitive, emotive artistic creation, Leonardo as artist-scientist would have offered Duchamp crucial validation for his belief in art as an intellectual activity. Indeed, in the context of the *Large Glass* project, Duchamp was to carry out a number of activities suggested by Leonardo. These ranged from his playful exploration of the laws of mechanics to his gathering of dust on the *Glass* itself, an idea likely rooted in Leonardo's comments on dust as a measure of the passage of time and on collections of dust as miniature landscapes. "My landscapes begin where Da Vinci's end," Duchamp told an interviewer in the 1960s.
>
> Duchamp was not alone among artists in prewar Paris in his admiration for Leonardo. His close colleague Frantisek Kupka shared his respect for the mind and works of the artist-scientist. Among the Cubists, Villon, Duchamp's brother, later recalled his own reading of Leonardo's *Treatise on Painting* and asserted that the name "Section d'Or," adopted by the Puteaux circle for their fall 1912 exhibition, was an

homage to Leonardo's concern with the Golden Section. In contrast to the Cubist painters, however, Duchamp's interest in Leonardo was not a retrospective one: he was not simply concerned with earlier ideas that bore Leonardo's imprimatur. Instead, he sought to act as the new Leonardo, responding actively to contemporary science and technology as Leonardo had done in the Renaissance.

Given Duchamp's far greater involvement in early twentieth century science than has previously been thought, the case for Leonardo as a seminal precursor can be made even more convincingly than in the past. For a young artist interested in science, Leonardo's written record of his scientific pursuits, as presented and analyzed in a variety of early twentieth-century sources, offered a compelling example of a great mind at work. For example, Péladan's introduction to *Textes choisis* argued that the manuscripts revealed a new Leonardo, different from the "sphinx-like painter of the *Joconde*," a Leonardo who "possessed the highest consciousness and the most lucid mind of any artist." Reviewing Péladan's collection of texts, Remy de Gourmont in the February 1908 issue of *La Revue des Idées*, concluded of Leonardo: "What is impossible to ignore is the force of his intellect. Whether he invents or he chooses [from past science], it is the same critical sense carried to the highest point... He was a fanatic of experimentation and he is, before Bacon and since Aristotle, the best theorist."

In his *Introduction à la methode de Leonard de Vinci*, published initially in 1895, Paul Valéry had also focused on Leonardo's thought processes, celebrating a mind able to grasp "relations… between things whose principles of continuity escape the rest of us," an approach Duchamp would cultivate in his work on the *Large Glass*. Although Valéry's text has been noted previously in the Duchamp scholarship, no consideration has been given to the three-volume *Études sur Léonard de Vinci* (1906,1909, and 1913), written by Pierre Duhem, a prominent French scientist and chronicler of the history of science. Duhem's study informally added the sanction of the French scientific establishment to Leonardo's growing reputation. In his effort to clarify Leonardo's relationship to medieval scientists and philosophers Duhem devoted considerable attention to the work of Jean Buridan,[49]whose name appears in Duchamp's notes in the context of "Buridan's Ass." In addition, Duhem's treatment of Leonardo's interest in the problems of mechanics, such as equilibrium and the center of gravity, touched on issues central to the operation of parts of the *Large Glass*.

In his preface, Duhem marveled at Leonardo's writings as rare revelations of the workings of a scientific mind:

Among those who have initiated the human intellect to the comprehension of new truths, he is the one who has left a meticulous description of the progress of his thoughts, who has written up, so to speak, the log-book of the voyage of discoveries that was his

[49] Jean Buridan Wikipedia https://en.wikipedia.org/wiki/Buridan%27s_ass

Da Vinci Duchamp, même

> life… These precious rough copies permit us to follow, from the first sketch to the completed, detailed design, the diverse forms that an invention has taken in the inspired judgment of Leonardo da Vinci.
>
> The manuscripts of Leonardo are documents of inestimable value, because they are unique in their genre; none of those who have enriched science has given us such numerous, detailed, and immediate records of the development of their thoughts.
>
> According to Leonardo's example, to be an intelligent artist required intellectual invention on scientific themes, which would be documented in individual notes on various subjects. The powerful example of Leonardo's note making cannot be overlooked in considering Duchamp's inauguration of his own career as a prolific recorder of ideas and his preference for randomness in ordering the notes. Writers on Leonardo, from Jean Paul Richter, who compiled the first English edition of the notebooks in 1883, to Duhem himself, emphasized the lack of sequence from one manuscript page to another, even when the sheets were from notebooks whose pages were only subsequently dispersed. Duhem referred to the "chaos" of the pages, while Richter suggested that "even in the volumes, the pages of which were numbered by Leonardo himself, their order, so far as the connection of the texts was concerned, was obviously a matter of indifference to him.
>
> Duchamp ensured the absence of any clear sequence among his notes by recording them on separate pieces of paper, many of which were irregularly sized scraps (sometimes torn from larger sheets) or the backs of such things as gas bills.[50]

Henderson also directs the reader to Craig Adcock's article, "Duchamp's Eroticism: A Mathematical Analysis"[51] in which he also discusses parallels to Leonardo:

> Duchamp and Leonardo share artistic characteristics and their work is similar, particularly in terms of the scientific cast of their perspective studies and notes. In transforming *La Joconde*, Duchamp was no doubt aware of the Freudian echoes her masculinization would set in motion. He once explained that his "landscapes begin where Da Vinci's end." In terms of the geometry, he may have meant by this statement that Leonardo's studies of scientific perspective, some of which are very much like his own, deal only with ordinary landscapes – with the observable three-dimensional world – while his own go beyond this world into the fourth dimension. Perspective projections from the fourth dimension, as Duchamp has seen in the complex diagrams of Jouffret, require numerous rotations and involutions in relation to the coordinates of normal three-dimensional space. One must look at four-dimensional objects again and again

[50] There are two notes on gas bills that are particularly interesting; they relate to *Eau et Gas a Tous Etages*.

[51] Published in Dada/Surrealism, Number 16, Number 1 (1987) *Duchamp Centennial*, pp. 149-167.

> from multiple points of view. Some of these projections and rotations turn things inside out. In order to discuss such peculiar geometrical events, Duchamp apparently invented his radically altered alter ego. The sexual transformation involved in his becoming Rrose *Sélavy* can be taken as a metaphorical reference to the convexity-into-concavity transformation involved in taking a *demi-tour* through the *étendue*.[52] And of course, in just these terms, the *Mona Lisa*'s mustache indexes what would happen if Leonardo's "perspective" were rotated through the fourth dimension. The "look" – the perspective – of Duchamp's rectified *Mona Lisa* suggests the potential consequences of his *n*-dimensional modification of Leonardo's *vetro piano*.
>
> For Duchamp, a "plane of glass" was more than a Renaissance window opening onto the perspective of ordinary space. It was an "infra-thin slice" that contained projections not only from the three-dimensional world but also from the four-dimensional world that lies beyond it. From this point of view, the Bride in the *Large Glass* is "four-dimensional." She is a *retard en verre*, a "delay in glass." The pun here may be on *envers*, [fn26] as in the expression, or "inside out," implying that she is a frozen projection from the fourth-dimension, rotated around a stationery plane like the tetrahedron in Jouffret's diagram. The transparency of the *Large Glass* makes the four-dimensional rotation at least theoretically visible…

★ ★ ★

Duchamp's direct references to Leonardo Da Vinci are few, but they point directly to the connection. In "Dialogues with Marcel Duchamp,"[53] Pierre Cabanne had discovered that as a young man in 1905, Duchamp decided to use an option of fulfilling only one year of military service rather than two if he became a skilled craftsman. To pass the requirements he mastered printing and trained in an establishment in Rouen where he learned to strike etchings using his maternal grandfather Emile Nicole's copper plates. It is a fascinating account of the experience and he stated, "…The jury was composed of master craftsmen, who asked me a few things about Leonardo Da Vinci, as the written part, so to speak."[54] Duchamp had to have studied Leonardo Da Vinci at that time; he was eighteen years old.

Many years later in 1966 at age 79, Duchamp was interviewed by Francis Roberts[55] and made the following remark:

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[52] Etendue or étendue (/etändu/) is a property of light in an optical system, which characterizes how "spread out" the light is in area and angle. http://en.wikipedia.org/wiki/Etendue

[53] 1993 Interview by Jean Antoine, The Art Newspaper No. 27, April, translation by Sue Rose.

[54] Dialogues with Marcel Duchamp, Pierre Cabanne, trans. by Ron Padgett, Da Capo Press, New York, 1987 pp. 19-20. French first edition, 1967.

[55] Interview with Marcel Duchamp (1887-1968), by Francis Roberts 1966, pp. 46-64.

Da Vinci Duchamp, même

> Roberts: Your experiments in mechanical drawing, then, are not based on any physical laws as, say, Leonardo's were.
>
> Duchamp*:* No, no, it was a reaction against the easy, splashing way. I was fighting against the hand, so to speak. Mechanical drawing was the closest thing I could use. This was a way to get a new idea without changing the means. From the bottom up. My approach to the machine was completely ironic. I made only the hood. It was a symbolic way of explaining. What was really beneath the hood, how it really worked, did not interest me. I had my own system quite tight as a system, but not organized logically. My landscapes begin where Da Vinci's end. The difficulty is to get away from logic.

In an interview conducted by Jean Antoine[56] also in 1966, Duchamp was asked about belonging to a 'school' of art and he said:

> No. I belonged to them in the sense that when I was interested in something I tried to understand it as far as possible and, of course, even tried to make use of it. But the word "school" only leads to the word "group" and, ultimately, only individual works are produced, such as the works of a certain Leonardo da Vinci. It's down to the individual to emerge from any school or so-called school. The idea of a school in itself is basically of no interest to me at all.

In *Leonardo's Brain: Understanding Da Vinci's Creative Genius*,[57] former surgeon and accomplished art historian Leonard Schlain delves into the life, thought, and he discusses the *brain function* of Leonardo. His observations on socio-historical progressions are fascinating:

> The fourteenth century had been one of the most dreadful centuries of Western civilization. Europe was marred by the Hundred Years War and pummeled by three successive waves of the bubonic plague that decimated the population by over a third. Very few significant social, political, religious, or scientific advances had the opportunity to make their mark.
>
> An aura of pessimism hung like the pall of smoke rising from pillaged villages dotting the European landscape. Reading how contemporary writers assessed the future, one thing becomes clear: Not a single chronicler, historian, courtier, nobleman, philosopher, or artist understood that the Renaissance was just beginning to blossom. Or that it would transform society.
>
> Similarly, in the 1790s, Europe was facing its first energy crises. The main fuel at the

[56] 1993 Interview by Jean Antoine, The Art Newspaper No. 27, April, translation by Sue Rose.

[57] Schlain, Leonard, "Leonardo's Brain: Understanding Da Vinci's Creative Genius," 2014 Lyons Press.

time was firewood, but the readily accessible great stands of trees had been felled, and axmen had to venture farther away from the population centers into the forests to locate adequate supplies. This made the cost increasingly expensive.

Not one of the Enlightenment's great thinkers anticipated that the most revolutionary social transformation of human society since the crossover from the hunter-gatherer lifestyle to agriculture thousands of years earlier was about to begin. Coal was about to fuel Bessemer furnaces and fire the factories that would reconfigure the landscape of Europe. Mass migration of populations from farms to cities began. No one alive in the 1790s anticipated that the Industrial Revolution was beginning.

Schlain devotes a short chapter to a fruitful comparison between Leonardo and Marcel excerpted below:

Of the many modern artists whose work was adumbrated by Leonardo, Marcel Duchamp resembled his predecessor the most in temperament and character. Like Leonardo, Duchamp's outsized reputation stood in contrast to the small number of pieces in his completed oeuvre. He frequently left works unfinished, was continually experimenting with new means to express himself, initiated many radical ideas that completely challenged the artistic conventions of his day, and even wrote copious notes concerning his ideas about science that he secreted away from the eyes of the public.

Although both were capable of technical mastery, both expended considerable time and effort on other endeavors. For Duchamp, it was his abiding interest in chess; for Leonardo, it was his interest in scientific pursuits. Both started major works and left them unfinished for years. And both loved practical jokes and riddles. Leonardo drew the first caricatures, and Duchamp was a founding member of the 1915 Society of Cartoonists. Duchamp, like Leonardo, emerged as one of the most influential artists of his age, and the works of both have withstood the judgment of time… In *Nude No. 2*, Duchamp allows the viewer to see where the woman was, where she is, and where she is going to be. In a single gestalt, the past, present and future of her motion are on display… There is one exceptional drawing finished five hundred years earlier by Leonardo, "The Vitruvian Man." Here we see the figure as a double exposure. Is not the Vitruvian Man a prelude to Duchamp's *Nude No. 2*? Are not these two images a chance to see more than one duration of time simultaneously?

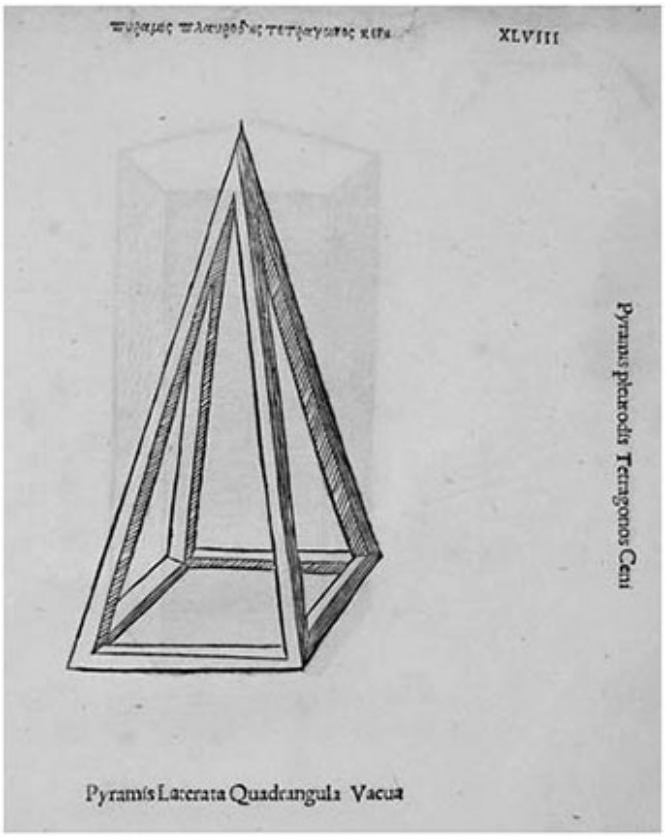
…Duchamp fought for nothing less than a great rethinking concerning what exactly constitutes art.[58]

★ ★ ★

[58] Shlain, Leonard, "Leonardo's Brain: Understanding Da Vinci's Creative Genius," 2014 Lyons Press, p. 67-69.

Da Vinci Duchamp, même

Leonardo studied geometry and mathematics with his colleague the Franciscan friar, Luca Pacioli[59] while they were both living as guests of the court in the palace of Ludovico Sforza in Milan. Leonardo executed illustrations of geometric figures for Pacioli's book, *De divina proportione*,[60] that was printed in 1509. The images are noted for the skeletal method of depicting the structures. Illustrated below is a pyramid which has five sides, four triangles on a square base.



Leonardo Da Vinci, *De divina proportione,* 1509

[59] Wikipedia: https://en.wikipedia.org/wiki/Luca_Pacioli

[60] Wikipedia: https://en.wikipedia.org/wiki/De_divina_proportione

Da Vinci Duchamp, même

Portrait of Luca Pacioli, attrib. Jacopo de Barbari, 1495-1500.

One of the cultural undertakings of the principal rulers and educated people, which included skilled artisans who became known as *artists* on a par with those educated in Latin during the Quattrocento in Italy was the rediscovery and examination of almost lost works by ancient Greek and Roman philosopher-scientists. The discovery of rare volumes, their translation into Latin and sometimes vernacular Italian was an industry at the time. It was a process of recovering the theories, thoughts and methods of analyzing and defining reality, astronomy, mathematics, philosophy, the universe no less, that occupied their cultural concerns. In Europe from the 14th through 16th centuries, the sciences were markedly influenced by the revival and the study of works by Archimedes, Pythagoras, Euclid, Pliny the Elder, Aristotle, Plato and others. Evidence suggests that Leonardo was particularly interested in the works of Roman lawyer-scientist, Pliny the Elder[61] based on several references to "Pliny" in his notes and manuscripts. In *De Rerum Natura*, Pliny applied intensive methods of observation and wrote assiduous accounts, in a broad overview of what constitutes the world and the universe, and he recorded his experiments as proofs. Pliny the Elder, like Leonardo, was said to have worked constantly.

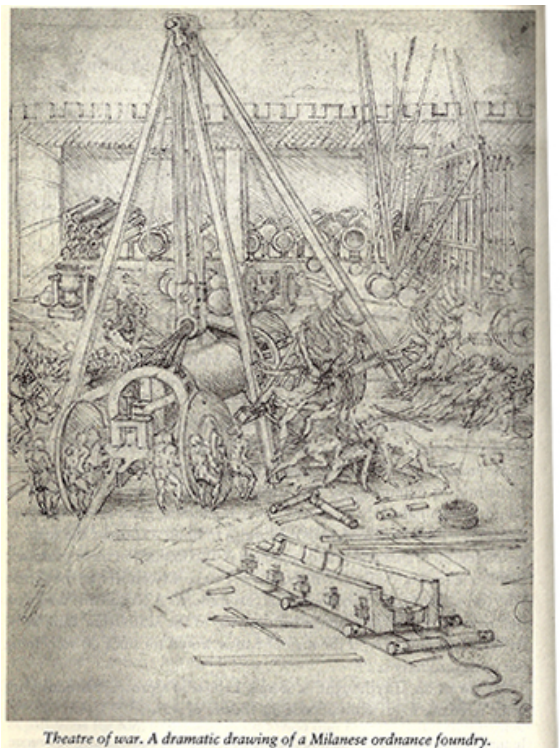
In "#63, "On linear perspective," one of many of Leonardo's notes on the nature of vision, translated by Jean-Paul Richter, Leonardo wrote:

[61] Wikipedia: https://en.wikipedia.org/wiki/Pliny_the_Elder

Da Vinci Duchamp, même

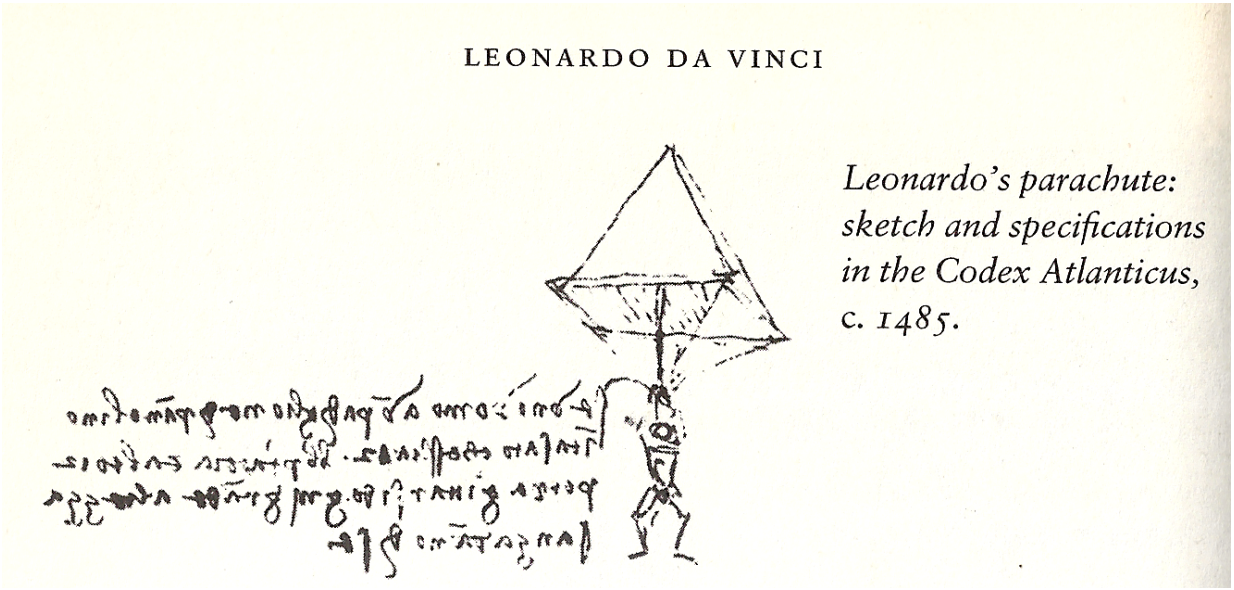
> Every body in light and shade fills the surrounding air with infinite images of itself; and these, by infinite pyramids diffused in the air, represent this body throughout space and on every side. Each pyramid that is composed of a long assemblage of rays includes within itself an infinite number of pyramids and each has the same power as all, and all as each. A circle of equidistant pyramids of vision will give to their object angles of equal size; and an eye at each point will see the object of the same size. The body of the atmosphere is full of infinite pyramids composed of radiating straight lines, which are produced from the surface of the bodies in light and shade, existing in air; and the farther they are from the object which produces them the more acute they become and although in their distribution the intersect and cross they never mingle together, but pass through all the surrounding air, independently converging, spreading, and diffused. And they are all of equal power [and value]; all equal to each. And each equal to all. By these images of objects are transmitted through all space and in every direction, and each pyramid, in itself, includes, in each minutest part, the whole form of the body causing it.

Of interest in comparing individual works by Leonardo and Duchamp, one finds the presence of pyramidal, or tetrahedral forms. Leonardo's skeletal illustration in Pacioli's *Platonic Solids* of the pyramid, is joined in Leonardo's notebooks and drawings by designs and structures of pyramids for a variety of practical uses, evidencing his belief that vision itself is composed in pyramids.



Theatre of war. A dramatic drawing of a Milanese ordnance foundry.

Da Vinci Duchamp, même



In the illustration of work going on in a foundry one sees Leonardo using this structure which proves to be practical for numerous purposes and which leads to modern engineering uses of tetrahedral structures.[62] Leonardo's design for a parachute is also pyramidal.

Duchamp used a pyramid structure in his work of 1918, *To Be Looked at (from the Other Side of the Glass) with One Eye, Close to, for Almost an Hour* which has been written about by both Jean Clair in his article on classical perspective and observed to refer to other dimensional vision by Craig Adcock. One sees the pyramid made of intersecting lines creating a moire optical effect and the gnomon standing in the middle ground at the center of the *optical witnesses* was used in the *Large Glass*. The radiating lines of the circular *temoin oculiste* centers the standing gnomon and offers a central lens through which to experience the vision presented by the work. A work on glass which was also shattered, it was originally designed to hang.

[62] Tetrahedral structures is extraordinarily functional. Research is presented here: http://www.changechance/ TETRAHEDRON.pdf

Da Vinci Duchamp, même

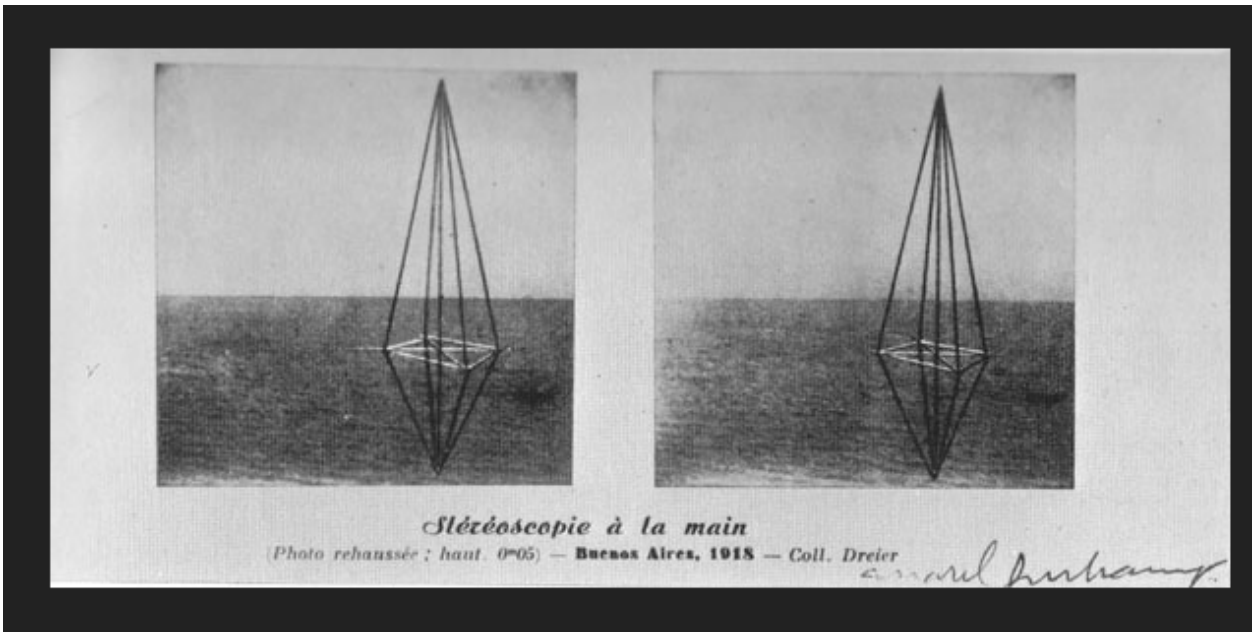
Marcel Duchamp, *To Be Looked at (from the Other Side of the Glass with One Eye, Close to, for Almost an Hour*, 1918.[63]

It was in 1918-19 the same period when Duchamp, with Yvonne Lambert (who was still married to Jean Crotti and later to receive the *Belle Haleine* sculpture from Duchamp as a gift), traveled to Buenos Aires. They left to get away from the war fervor caused by when the United States joined the World War I effort in 1917. Yvonne returned to Paris and Duchamp stayed longer in Buenos Aeries where he began to seriously train as a chess player. Duchamp created the work, *Stéréoscopie à la Main,* or "Handmade Stereoscopy." A less well known work among Duchamp's optical pieces, he made the three dimensional object to be viewed

[63] Collection of the Museum of Modern Art, NY https://www.moma.org/collection/works/78993

Da Vinci Duchamp, même

through a stereopticon viewer. The stereopticon slide is hand-drawn of a skeletal pyramid over the a parallax image of calm water stretching to the horizon.



"Stéréoscopie à la Main", 1918-1919, rectified readymade,
pencil over photographic stereopticon slide, Museum of Modern Art, NY.

★ ★ ★

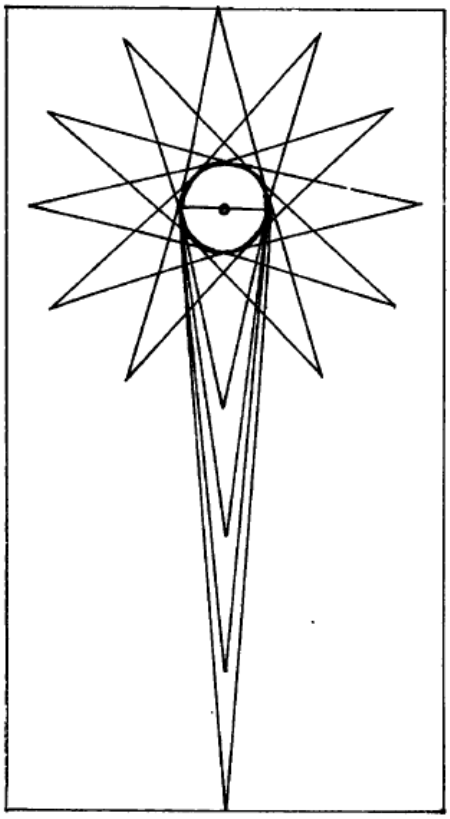
In the *Treatise on painting* Leonardo describes a simple approach to drawing perspective:

> "Of the Pane of Glass.[64]
> Perspective is nothing else than seeing a place [or objects] behind a plane of glass, quite transparent, on the surface of which the objects behind that glass are to be drawn. These can be traced in pyramids to the point in the eye, and these pyramids are intersected on the glass plane."

Now, consider again Duchamp's decision to work on glass panes. He stated that he was attracted to the medium of glass after using a glass palette, and also for the potential of glass to preserve oil colors from oxidation. Duchamp also commented that the painter does not have to make up a background for his or her subject as the glass provides whatever is seen

[64] Notebooks p. 53 # 83. Richier, get cit.

through it. Still, the Renaissance idea of using a pane of glass on which to render a scene, reverberates and is consummated in Duchamp's works that use glass panes as supports.



Based on Leonardo, *Radiant Pyramids emanating from a circular object*, Paris, Institute de France, Ms Ashburham II, 6v

Da Vinci Duchamp, même

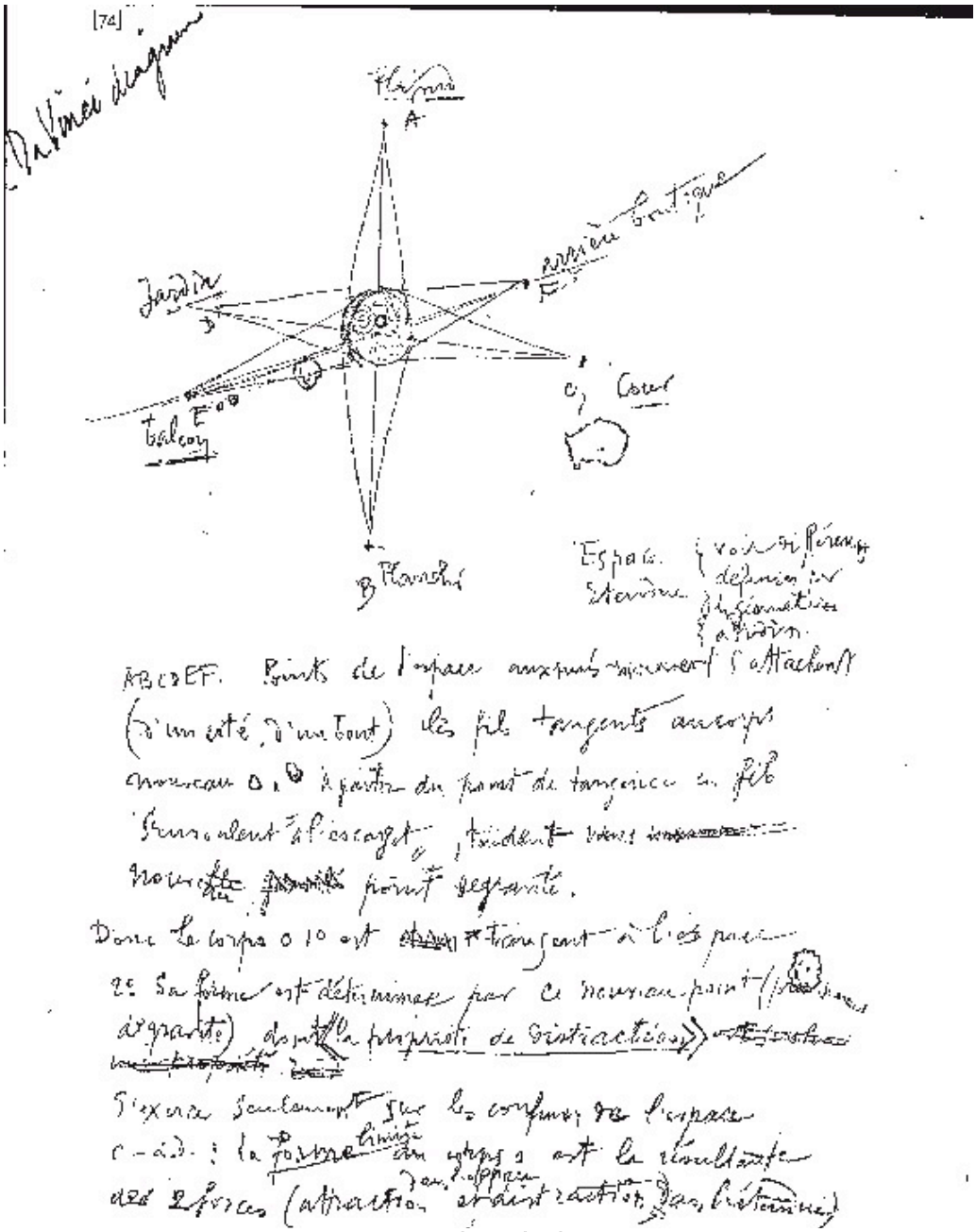


image credit – Abrahms…

This drawing from the *Green Box* is hilariously inscribed. It is presented here for the way it has a resemblance to Leonardo's diagram above showing "radiant pyramids."

★ ★ ★

Da Vinci Duchamp, même

Georgio Vasari in "Lives of the Most Eminent Painters, Sculptors, and Architects"[65] published Leonardo's portrait in writing, "Life of Leonardo Da Vinci."[66] It was composed from anecdotes and accounts of people who had known him. Vasari was born in Italy 1511 and Leonardo died in France in 1519. The text is effusive and complementary and while the details have been studied by scholars to ascertain their truthfulness, the parallels to remark on here include the assertion of Da Vinci's physical beauty, charm in conversation, and his dexterity and skill with materials all of which have been reported about Duchamp. Vasari wrote "…not only in his lifetime was he held in esteem, but his reputation became even greater among posterity after his death… He was so pleasing in conversation, that he attracted to himself the hearts of men…. he possessed, one might say, nothing, and worked little…" The perception today is that Da Vinci worked a great deal and he kept a notebook with him at all times in which to draw, sketch and keep a record of his ideas. Remarking on the matter of a dispute about his work ethic Vasari recounts, "… Leonardo, knowing that the intellect of that Prince was acute and discerning, was pleased to discourse at large with the Duke on the subject, a thing which he had never done with the Prior; and he reasoned much with him about art, and made him understand that men of lofty genius sometimes accomplish the most when they work the least, seeking out inventions with the mind, and forming those perfect ideas which the hands afterwards express and reproduce from the images already conceived in the brain…"

Perhaps the most insightful living expert on Leonardo Da Vinci is Martin Kemp, a professor at Oxford University whose books, on optics in the history of the European Renaissance, animals and caricature, and patterns in science and art, are presented to a degree of exacting depth that reflects Leonardo's own approach to the phenomena of nature. Kemp's biography "Leonardo"[67] is exceptionally good because he composed it by category to illuminate the ways in which Leonardo seemed to think and how he worked. In his biography Martin Kemp provides two additional sources after Vasari, to corroborate claims of Leonardo's attractiveness and talents:

> According to an anonymous early source, called the *Anonimo Gaddiano*, his appearance was striking. 'He was of a fine person, well proportioned, full of grace and of a beautiful aspect. He wore a rose coloured tunic, short to the knee, although long garments were then in fashion. He had, reaching down to the middle of his breast, a fine beard, curled and well kept.'
>
> This is the Leonardo we encounter in the profile drawing at Windsor, of very high

[65] The full text is online at the Minnesota State University, Moorehead. http://web.mnstate.edu/gracyk/courses/web%20publishing/Vasari_daVinci.htm

[66] LEONARDO DA VINCI (1452-1519), PAINTER AND SCULPTOR OF FLORENCE, from "Vasari's Lives of the Artists." Online source: http://members.efn.org/~acd/vite/VasariLeo.html

[67] **Kemp, Martin, Leonardo** This biography is subtle and the product of limpid thinking for those with an interest in understanding the artist at greater depth.

quality and probably by Francesco Melzi (Plate i). The bone structure in the portrait exhibits a fineness in sharp contrast to the lumpier features of the image in Turin, which is generally but incorrectly taken to be a self-portrait. Members of his entourage appear to have been encouraged to maintain high sartorial standards, as reflected in his notes recording purchases of fine clothes for them.

It is difficult to imagine Leonardo neglecting his person in the way that Michelangelo appears to have done when painting the Sistine ceiling. He does not seem to have shared Michelangelo's reclusive habits. I suspect that he was an ever-enquiring presence and lively discussant with the kinds of people he lists as sources of information. He is reputed to have played the *lira da braccia* (a relative of the violin) with skill, and some of his jests and fables may have been presented in verbal displays at court. We know that he took part in at least one set piece debate on the arts at the Sforza court. He clearly cut an impressive and cultivated figure.

Given the obvious frustrations that Leonardo caused many of his patrons, it is nice to find moving confirmations of what Leonardo had to offer as a man. The two most effective records of the impact he made both date from the last years of his life.

When the sculptor Benvenuto Cellini was in France he reported that:

King Francis, being enamoured to such an extraordinary degree of Leonardo's great talents, took such pleasure in hearing him talk that he would only on a few days deprive himself of his company. ... I cannot resist repeating the words I heard the King say about him, in the presence of the Cardinal of Lorraine and the King of Navarre; he said that he did not believe that a man had ever been born who knew as much as Leonardo, not only in the spheres of painting, sculpture, and architecture, but in that he was a very great philosopher.[68]

In his *Souvenirs of Marcel Duchamp*,[69] author and longtime friend Henri Pierre-Roche wrote:

When I met Marcel Duchamp in New York in 1916 he was twenty-nine years old and wore a halo. I still see him that way.

What was that at halo made up of? It was his outward calm, his easygoing nature, his keenness of intellect, his lack of selfishness, his receptiveness to whatever was new, his spontaneity and audacity.

Just being with him was a pleasure and a privilege that he seemed unaware of, even while his circle of disciples was constantly growing.

I see him—young, alert and inspired. From 1911 to 1923 my memories of him as

[68] Martin Kemp, *Leonardo*, pp. 44-46.

[69] Souvenirs of Marcel Duchamp, by Henri Pierre Roché in "Marcel Duchamp," 1959, edited by Robert Lebel, Grove Press, NY, pages 79-87.

a person are even more alive than my recollections of his work, of which so little exists, though enough to last us forever. He never repeated himself in has paintings.

He was creating his own legend, a young prophet who wrote scarcely a line, but whose words would be repeated from mouth to mouth and from whose daily life anecdotes and miracles would be construed.

He enjoyed life and knew how it should be lived. His own example was to 'Do unto others as they would wish, but with imagination.'

Chance meetings provided lifelong friendships for him, but a tactless word, and the door was closed.

It was forty years ago and I had just landed in New York. The first thing he did was to lead me off to a fancy dress hall, borrowing a costume for me from a friend. I was concerned because I didn't know any girls, but he assured me I had nothing to worry about. The ball was in the old Vanderbilt Hotel. It was cold in those rooms and Duchamp and I were sitting with our backs to the radiators like the two shivering Frenchmen that we were. I was resigned to spending a lonely evening but as the couples began arriving, the girls would break away from their escorts to gather around Marcel Duchamp. It wasn't long before there were a dozen quickly followed by several men. Duchamp delegated two of the girls to attend to me. Soon I was hearing all about him: that he had painted a picture for the famous Armory Show three years before entitled Nude Descending a Staircase. This painting was considered by one half of America as the work of the devil, and by the other half as the revolutionary masterpiece. At that time Marcel Duchamp's reputation in New York as a Frenchman was equaled only by Napoleon and Sarah Bernhardt.

He could have had his choice of heiresses, but he preferred to play chess and live on the proceeds of the exclusive French lessons he gave for two dollars an hour. He was an enigma, contrary to all traditions, and he won everybody's heart.

The painter Georgia O'Keeffe was also one of the chroniclers of Duchamp's attractiveness:

There was Steiglitz's circle, and there was also the circle around the Stettheimer sisters – Florine, the painter, and Ettie, the writer, and Carrie, who built the doll house that they and their friends decorated. Whenever Florine finished a painting, she would invite everybody in for a tea. Nothing in her house looked as though it had ever been used. Once, I made this comment about a red cushion, and Florine said very indignantly, 'I sit on it every day!' Anther time, I was sitting there just behind the new painting, and Marcel Duchamp was in the chair facing me. I finished my tea, and Duchamp got up from his chair and took my teacup from me with the most extraordinary grace – with a gesture that was so elegant that I've never forgotten it...[70]

[70] Calvin Tomkins, PROFILES, "The Rose in the Eye Looked Pretty Fine," of Georgia O'Keefe," The New Yorker, March 4, 1974.

Da Vinci Duchamp, même

★ ★ ★

Robert Lebel's first book was "Leonard Da Vinci,"[71] in which he studied the artist in depth. It was Lebel who published "Marcel Duchamp,"[72] in 1959 in French and English, the first important monograph on Duchamp. Lebel was one of Duchamp's favorite people according to Walter Hopps[73] who curated the Duchamp retrospective for the Pasadena Museum of Art in 1963. That remarkable assembly of works had a tremendous influence on Andy Warhol, Ed Ruscha and Jasper Johns in the 60s and effectively reintroduced Duchamp's contributions to contemporary artists and the cultural community. But Duchamp was not invisible to the cultural world as has been claimed by detractors who overlooked his variety of activities. In 1952 LIFE magazine published a rather weird and inaccurate five-page article with full color illustrations titled, "Dada's Daddy," where some of the *Rotoreliefs* are reproduced, but with entirely off-color made up title. After 1923 when he supposedly stopped producing "art," Duchamp continued to work at a number of projects, with the French Relief Society in 1945,[74] on publications, designing a door for Breton's bookstore, in secret on his installation *Étant donnés: 1° la chute d'eau / 2° le gaz d'éclairage* and he continued his practice as a *respirateur*.

Many artists knew and were influenced by Duchamp. John Cage, Robert Rauschenberg, Shusaku Arakawa and Jasper Johns among those who are on the record as having taken Duchamp for an important influence. Rebecca Horn[75] mentions both Leonardo and Duchamp talking with Germano Celant in *The Bastille Interviews I*:

> Germano Celant: Have you been influenced by historical sources in making your machines?
>
> Rebecca Horn: Not that I'm aware of.
>
> GC: But you know, people sometimes write about the influence on you of Jean Tinguley or of bachelor machines, and so on.
>
> RH: Well, I do love the drawings of Leonardo Da Vinci. His flying machines are beautiful. But I'm interested in the soul of a thing, not the machine itself. I work closely with my

[71] Lebel, Robert, "Leonard Da Vinci," 18__. In French, no English translation is known.

[72] Marcel Duchamp, by Robert Lebel, 1959.

[73] Walter Hopps reference in his autobiography... Robert Lebel

[74] Duchamp was asked by Elsa Schiaparelli to curate an exhibition for art relief and he got Andre Breton to do the project, himself inventing the 16 miles of string installation and the catalog.

[75] The Bastille Interviews I, Paris, 1993, Rebecca Horn with Germano Celant, pp.18-21, Guggenheim Museum, New York.

Da Vinci Duchamp, même

technician, who actually builds the machines, but I know how they will look and function. It's the story between the machine and its audience that interests me...

GC: How do you see the relation between your work and the history if art? Do you have some visual point of reference or some image that stays in your mind?

RH: Do you mean images made in this century?

GC: Yes, images from the twentieth century, Surrealism, even from today. Something that is personal to you, or personal and impersonal at the same time. Or don't you care at all about influences. That is, does everything come from your own inspiration?

RH: No, I think that there are a lot of things that influence you as an artist – art or images or performance.

GC: Performances?

RH: Or films, or even literature. There are images from the Renaissance or the School of Fontainbleau. There are Surrealist texts, paintings, and collages. There is Marcel Duchamp. There are performances by Joseph Beuys, which were very important for me to see. And also his speeches and talks.

Horn discusses her involvement with film in a second interview in this series; speaking with Stuart Morgan:

Stuart Morgan: Have you been criticized for deserting art for film?

Rebecca Horn: More and more I hate this word "art," this limitation on what art is. Duchamp already exploded it. I can't constantly paint or make machines. I get to a limit and want to do something else. Because I'm not constantly working in cinema, I love cinema. I love the precision. It's almost the same as constructing a machine. There are steps to go through to articulate every single function. You have a story, and you have the privilege of working with actors. Then you go through this whole technical process of shooting and editing, and, finally after a year, you might have five reels of film. The good thing is that you can show the film everywhere, whereas when there is an exhibition or installation, only a few people get to see it before it disappears.

★ ★ ★

Da Vinci Duchamp, même

A fundamental issue for both Leonardo Da Vinci and Marcel Duchamp is that of the artist as an intellect, not just as an artisan or producer of images and things. At the Sforza court events with presentations were held where people gave speeches to entertain the assembled guests. Leonardo is known to have presented his *paragone*[76] in which he claims a superior ability of painting and images to convey meaning over sculpture or the expression of ideas using language. Duchamp also commented on the failure of words to convey meaning, as did Andre Breton in his essay "Words without Wrinkles." Duchamp claimed the importance of literature among his influences and particularly the poets Jules LaForge, and Stephane Mallarmé.

Both Leonardo, in the form of complex rebuses and invented fables, and Duchamp[77] in his many word plays and in complex letter-objects reproduced in *Notes,*[78] had sensibilities that created with language. Word play was a national pastime to Duchamp's generation. They were both poetically inclined, and artists who had integrated the two hemispheres of their brains into the fabric of their art practices. An integral relation of words to images in human history has been addressed though common expressions like *A picture is worth 1000 words* and the maxim *Ut Pictura Poesis*. Thought things in verbal forms and experiential-visual phenomena are essential to appreciation of Duchamp's notes, the *Green Box* and the *Large Glass,* which are intended as one work, an integrated expressions of the human brain; of consciousness itself.

Leonardo considered that a painting must render the intentions and actions of its subjects and that painting is, *una cosa mentale*[79] expressing a whole process of thought and inquiry on the part of the creator. Duchamp through his discovery of the ready-made, engaged "the beauty of indifference" effectively creating the zero degree in aesthetics. By declaring, "good, bad or indifferent, it is still art just as a bad emotion is still an emotion"[80] Duchamp freed art production from taste, or judgment as a determining criterion, allowing art to operate "in the service of the mind" and opening avenues to revolutions like conceptualism and object relational works.

Near the end of his life Jean Antoine asked Duchamp, "What would you say was your greatest achievement?" to which he answered, "Using painting, using art, to create a modus vivendi, a way of understanding life; that is, for the time being, of trying to make my life into a work of art itself, instead of spending my life creating works of art in the form of

[76] Leonardo Da Vinci, *paragone*: https://arthistoryproject.com/artists/leonardo-da-vinci/paragone-of-poetry-and-painting/

[77] (He made one rebus print. Source…

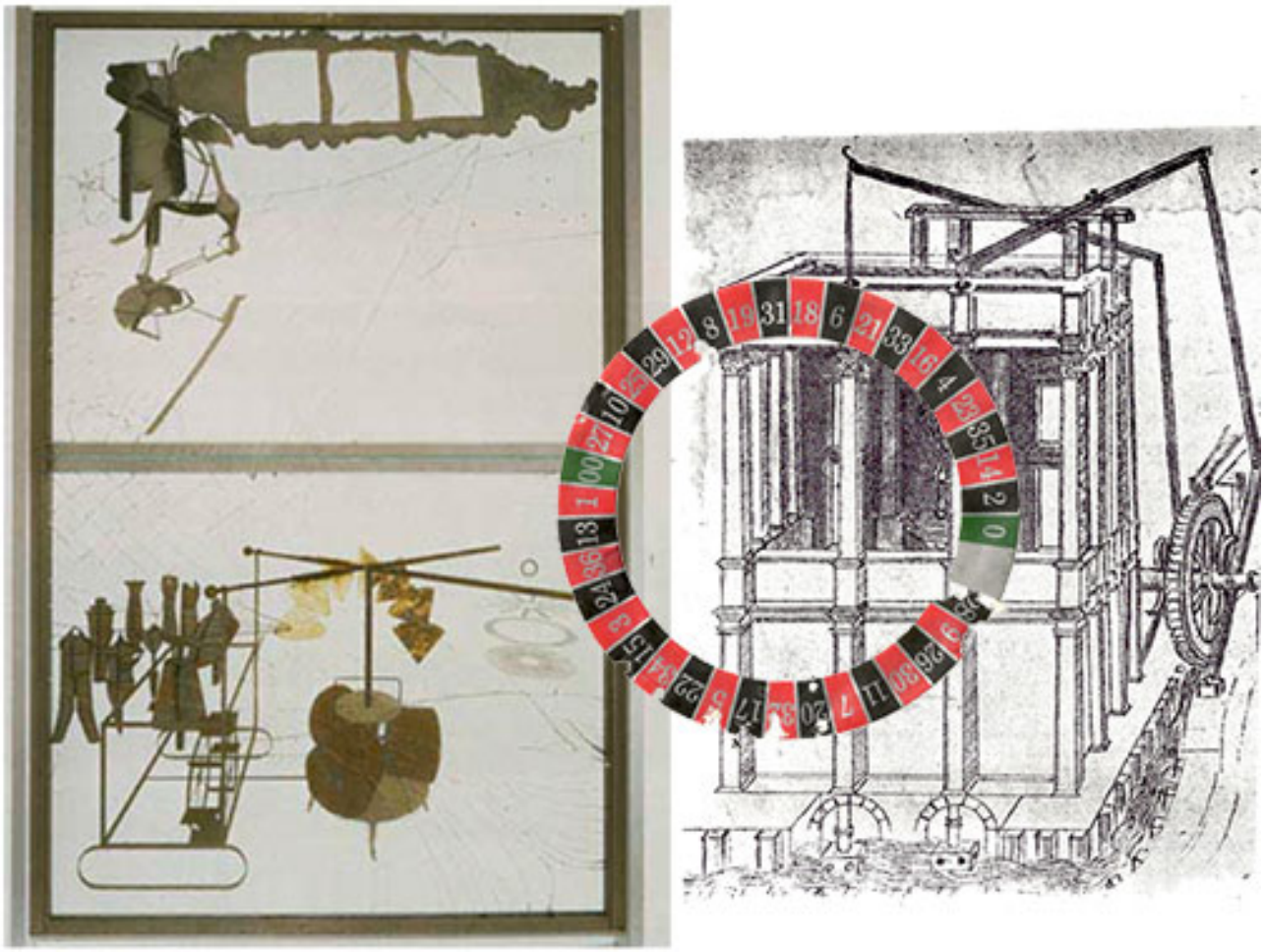
[78] Marcel Duchamp, *Notes*, edited by Paul Matisse, Pompidou edition __

[79] *Una cosa mentale*, source in notes.

[80] Source is… Creative Roundtable?

Da Vinci Duchamp, même

paintings or sculptures. I now believe that you can quite readily treat your life, the way you breathe, act, interact with other people, as a picture, a tableau vivant or a film scene, so to speak. These are my conclusions now: I never set out to do this when I was 20 or 15, but I realize, after many years, that this was fundamentally what I was aiming to do."



Motion of water, the force of weights and chance... digital collage, 2010, L. Brandon Krall

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