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November 1, 2013

First Year Seminar

The Lost Leonardo

The obsession of one of the world’s leading experts on Leonardo da Vinci, Carlo Pedretti, and Florentine engineer, Maurizio Serachini, began with two small, seemingly insignificant and obscure words—“cerca  trova”(Italian for “seek and ye shall find”) ([Ferri](http://www.nationalgeographic.com/explorers/projects/lost-da-vinci/chronicle-of-a-masterpiece/)). These two words were inscribed on a famous Giorgio Vasari mural “Battle of Marciano” in the Hall of Five Hundred in Florence’s Palazzo Vecchio. Due to the enormous size of the mural, these words were not found until the mid 1970s when Serachini “first noticed the message during an initial survey of the hall”(“Cryptic Clue to Lost Art: B Main Edition”). They immediately sparked interest, for many believed they were clues from Vasari that would lead to Leonardo da Vinci’s painting the “Battle of Anghiari,” or as many people have called it, the “Lost Leonardo.” After the words were discovered, Pedretti reached out to Maurizio Serachini again to discuss using “scientific methods to look for traces of the mural” (Ferri). After thirty years of study and research, it finally appears the team has found enough evidence behind Vasari’s mural to prove the “Lost Leonardo” in fact has not been destroyed ([ibid.](http://www.nationalgeographic.com/explorers/projects/lost-da-vinci/chronicle-of-a-masterpiece/))

Leonardo da Vinci’s commission for the “Battle of Anghiari” was issued on October 24, 1503, when Italian statesman Piero Soderini asked the famous artist to depict a battle in the 1440s between the Italian league, led by the Republic of Florence, and Milan on Tuscany’s plain of Anghiari (Mosher). Leonardo da Vinci used this commission as an opportunity to experiment with a new oil-painting technique, however, the mural was never finished ([Felch](http://search.proquest.com/docview/917134642)). There are many mysteries concerning this painting including how much was completed, its exact location, and its specific proportions. Pedretti reached out to Serachini to discuss how to solve these mysteries. For Serachini, this proposal gave him a new career; he had recently dropped out of medical school. After nearly thirty years of subsequent “ultrasound, infrared, ultraviolet, microwave and other imaging technology” testing (Felch), Serachini had a breakthrough in 2000 when he found a “a small gap of one to three centimeters between the room's original stone wall and the brick surface Vasari had added to support his frescoes” ([Felch](http://search.proquest.com/docview/917134642)). Serachini discovered the gap through the use of a ground-penetrating radar. Serachini, Pedretti, the mayor of Florence, Matteo Renzi, and a National Geographic team have been vigorously supporting the use of drilling in specific places of Vasari’s mural to determine if the painting is truly there. They have met opposition from government conservation experts and leading art historians such as Thomaso Montanari of the University of Naples. These individuals do not want to see Vasari’s masterpiece compromised in any way.

Simone del Pollaiuolo built the Hall of Five Hundred in 1494 and it remains the largest and most important room in the Palazzo Vecchio. Many marvel at the artistic and historical significance of the hall as it stores various magnificent works of art and was originally constructed as a meeting place for important political leaders. Leonardo da Vinci and Michelangelo Buonarroti were among the first artists commissioned to decorate the Hall of Five Hundred. The two artists were asked to construct murals that would depict the victories of the Republic of Florence. Leonardo painted a scene from the Battle of Anghiari and Buonarroti painted a scene from the Battle of Cascina. Both works were never completed.

A frequent procrastinator and experimenter, Leonardo da Vinci left many paintings unfinished throughout his career and there are various possible explanations as to why Leonardo never completed the “Battle of Anghiari.” According to Antonion Billi, a 16th century Florentine merchant and expert on the Florentine Renaissance, Leonardo never completed the project due to an unsuccessful new oil painting technique. Anomino Gaddiano, a writer in the 16th century, proposed that Leonardo “attempted to bring back an ancient encaustic method of coloring stucco”("Leonardo Da Vinci - Paint in the Renaissance"). However, some believe the failure to complete the mural may not have been his painting technique, but the wall preparation beneath the pigment layer. Records show that Leonardo heated the wall with a brazier that made the paint drip. According to Oxford’s Kemp, “the rawness of the linseed oil in Leonardo's painting medium caused him to dry an experimental panel by lighting a fire and thus spoiling his final effort on the wall” ("Leonardo Da Vinci - Paint in the Renaissance"). Whether due to his oil painting technique or wall preparation, Leonardo did not make an effort to repair the mural ("Leonardo Da Vinci - Paint in the Renaissance"). Michelangelo stopped work on his painting in 1505 when Pope Julius II summoned him to Rome (“Hall of the Five Hundred”).

In the year 1540, Giorgio Vasari was asked to remodel the Hall of Five Hundred for the Medici family, who hired him to decorate the hall to simultaneously praise and glorify the family while depicting victories of the Republic. Therefore, Vasari and his team richly decorated the Hall with statues and portraits of the family members as well as six battle scenes which demonstrated Italy’s military successes (“Hall of the Five Hundred”). One of Vasari’s murals was a scene from the Battle of Marciano. In this battle, the Republic of Siena suffered defeat at the hands of the Duchy of Florence (“[Battle of Marciano](http://en.wikipedia.org/wiki/Battle_of_Marciano)”). The Duchy of Florence was founded after Emperor Charles V restored the Medici Family to power in Florence in the year 1530 (“[Duchy](http://en.wikipedia.org/wiki/Duchy_of_Florence) of Florence”). The location of Vasari’s “Battle of Marciano” is directly in front of where da Vinci painted his “Battle of Anghiari.”

Giorgio Vasari was an accomplished artist, architect, and historian. He is often referred to as the “first art historian” as author of, “Lives of the Most Excellent Painters, Sculptors, and Architects.” Vasari described the great artists and masterpieces of the 16th century. Finished or not, da Vinci’s “Battle of Anghiari” was indeed a masterpiece. The scene depicted the chaotic, violent, and brutal fighting between four horses and seven soldiers. Those fortunate enough to see the painting before the remodeling of the Hall of Five Hundred claimed that it was “one of the most beautiful works of art in existence”(Noelle). The painting was so beautiful that it stayed on the wall for almost fifty years despite being incomplete. Sources claim that “as late at 1549, there are accounts of visitors admiring Leonardo's crumbling scene”(Felch). Vasari himself even praised the work to a Venetian traveler when he said, “stop and take a look at Leonardo's horses”(Ferri). Not only did he verbally express his admiration but he even praised the scene in his book *La Vite* when he wrote “it would be impossible to express the inventiveness of Leonardo's design for the soldiers' uniforms …not to mention the incredible skill he demonstrated in the shape and features of the horses, which Leonardo, better than any other master, created with their boldness, muscles and graceful beauty” ("The Battle of Anghiari (painting)").

Not only did Vasari admire Leonardo’s painting, but he also had a history of concealing paintings rather than painting over them. According to Pedretti, Vasari "would intervene but would not destroy" (Ferri). In 1568 the Duke of Florence commissioned Vasari to redecorate the chapel in the Santa Maria Novela. This meant that Vasari would have to paint over Masaccio’s fresco, the “Holy Trinity,” which was located in this Dominican church. Vasari wanted to leave this fresco intact. Therefore, he constructed a new alter and screen in front of the fresco. On the new wall, he painted a Madonna of the Rosary to decorate the new alter. This small gap protected and concealed the fresco for almost 300 years until it was rediscovered in 1860, when Vasari’s painting was dismantled for renovations ("Holy Trinity (Masaccio)"). Many believe that the “Battle of Anghiari” was not destroyed because Vasari was accustomed to concealing paintings and had great admiration for the painting. Also, two small words inscribed on Vasari’s mural make an even more convincing argument that the mural still exists.

Serachini discovered these two small words, “cerca trova” when he and his team were analyzing Vasari’s “Battle of Marciano.” Cerca Trova is taken from the New Testament in the Gospel of Luke. The complete sentence is “for everyone who asks receives; the one who seeks finds; and to the one who knocks, the door will be opened”([Luke 11:10](http://biblehub.com/luke/11-10.htm)). Cerca trova refers to “the one who seeks, finds” part of the quotation. On such an enormous canvas placed high above the ground, these two words are almost impossible to see with the naked eye. Once Serachini and his team discovered the words in the mid 1970s, the search for the lost Leonardo began. Serachini was initially limited in his efforts to find the mural because his team lacked the proper technology to safely analyze the space behind Vasari’s mural. However, the experiments began in 1975 with the use of ultrasound, infrared, ultraviolet, microwave and other imaging technologies. In 2000, the team achieved a breakthrough when they found a gap of one to three centimeters due to a ground-penetrating radar. The ground-penetrating radar "shot energy through the wall at various air lengths" until it found this "mysterious air pocket" (Felch). This gap only existed in the section of the hall where Leonardo painted the “Battle of Anghiari.”  In 2002, the team obtained further help from the use of radar and x-ray technologies. With these tools, the team proved that the words were placed directly at the “center of a cavity that lies behind the fresco”(“Cryptic Clue Lost Art: B Main Edition”).

Since this ground-breaking discovery, scientific tools have greatly increased and the team is now able to hold up tablets to Vasari’s fresco and peel away the pigment, plaster, and brick with the swipe of a finger. This new technology helps determine the safest spots to drill on the Vasari fresco. The technology uses an "augmented reality" application which overlays a thermal image to reveal a "long dark patch - cold air seeping through where the fresco has cracked and/or where the fresco needed restoration.” The tablet revealed six different places fitting this requirement and the team wanted to insert small cameras into these holes to look behind the fresco. Serachini and his team also wanted to use ionized radiation to determine the precise placement of the pigments. However, building the device was above the National Geographic's budget and the threats accompanying the use of radiation made using any type of technology using radiation "politically untenable." That's when Florence’s Mayor Matteo Renzi decided drilling holes in the Vasari fresco was the most viable course of action. Serachini said that the six possible sites “ were selected with local conservation authorities and the approval of cultural officials in Rome." With this approval, the team lifted 2.5 cm squares off the fresco and drilled with a 6 mm bit. In each hole, the team used a four mm endoscope to examine the wall behind (Felch). The results did not show the complete work of art but that the wall contained materials Leonardo used in the past. On the wall, the team found a pigment reserved for oil painting along with a black pigment. The black pigment is a combination of a “shade of umber, a brown clay pigment, and a black pigment containing iron and manganese dioxide” and the proportion of iron to manganese dioxide is exactly the same that was used in da Vinci’s “Mona Lisa” and “St John the Baptist” paintings (Follian).

Many art historians and government conservatives are vehemently fighting against Serachini, National Geographic, and Matteo Renzi because they do not want to ruin Vasari’s masterpiece on evidence they believe to be inconclusive. They have accused Serachini of "malpractice,” government conservatives have resigned, and a collection of four hundred art historians and experts has signed a protest. Franca Falletti, head of the Academia gallery, chastised Serachini as she claimed that his quest for the Lost Leonardo was only a futile "search for a scoop" (Follian). Serachini’s efforts have caused such an uproar because these individuals believe that drilling holes on Vasari’s fresco to find a painting that may not even be there is too great a risk (Felch). Therefore, Serachini and his team have discussed the possibility of using non-invasive techniques like neutron nanosecond analysis (NNA) and neutron back scattering (NBS) to analyze the wall behind Vasari’s fresco.

NNA can be used to " detect the elemental composition of materials inside the wall. Neutron back scattering is based on the slowing down of fast neutrons by hydrogen nuclei." NBS can only detect hydrogenous materials and the hydrogen in the case of the “Battle of Anghiari” would be present in the materials da Vinci used with his previous paintings which were "Greek pitch, linseed oil, walnut oil and gesso, which have been used according to original documents"(Bom). The NBS approach has been tested at the Delft University of Technology in the Netherlands. The results have shown that the NBS was successful and therefore the process would not constitute great risks to any of the frescos in the hall. Also, according to the article, “Neutron Back Scattering for the search of the Battle of Anghiari” the authors believe this method will work to penetrate Vasari’s fresco because “it has been demonstrated that the NBS device … may be applied successfully to search of the prepared sections, painted or not, because the base layers give a strong signal”(Bom).

The words “cerca trova” have initialized the hunt for the “Lost Leonardo” as well as raging political dissent. However, they have also appeared in Dan Brown’s novel, *Inferno*. The words first appeared in the novel as “CATROVACER” which the main character, Dan Brown, saw through a Faraday pointer. To use a Faraday pointer, one must shake the device for thirty seconds to make the magnet pass through the wire coil. This movement generates power that is then stored in the capacitor. This energy produces an image that will fade once the energy source has depleted (“How Faraday Pointers Work”). The Faraday pointer in *Inferno* produces Botticelli’s “La Mappa dell’Inferno” which illustrates the nine circles of Hell in Dante’s *Inferno.* However, the painting in the Faraday pointer has been altered and Langdon recognizes ten letters that are not in Botticelli’s original. The ten letters spell “CATROVACER.” At first, Langdon fails to decipher the meaning but eventually realized the words actually meant “cerca trova.” Deciphering this clue led him to the Palazzo Vecchio and the Hall of Five Hundred where he discovered that *Il Duomino* and he had stolen Dante’s death mask. This discovery would eventually lead Langdon to find the death mask and more clues leading to Zobrist’s plague. Recently, Serachini has been compared to Robert Langdon as critics have labeled him as someone more preoccupied with the thrill of solving a mystery rather than the preservation of famous artwork. While Serachini “bristles” at the comparison, his quest for the “Lost Leonardo” truly does seem to be plucked from the pages of a Dan Brown novel(Follain).

Based on the extensive research and tests completed by Serachini and his team, there seems to be enough evidence to support the fact that Leonardo da Vinci’s “Battle of Anghiari” is behind Vasari’s “Battle of Marciano.” While it is imperative that Vasari’s fresco remains intact, the possible discovery of a da Vinci masterpiece would be a very important contribution to the art community. As Oxford’s History of Art Professor Martin Kemp explained, “if it's discovered, it would be one of the most famous discoveries of a century”([Mosher](http://news.nationalgeographic.com/news/2012/03/120312-leonardo-da-vinci-mural-lost-painting-florence-science-world/)). Also, due to the new technological improvements, there is far less risk that searching for the painting will cause real damage to Vasari’s fresco. However, the “Battle of Anghiari” will remain “lost” until more people find the courage to support Serachini and his team as they attempt to follow Vasari’s advice and “seek and find.”

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