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1. Premise

The volume: “Is the Louvre Mona Lisa Leonardo’s second version?” with the corresponding subtitle “Methodological path, historical-bibliographic sources, final judgement” [1] is connected to the research I have carried out over the years regarding the attribution and authentication of artworks. For this work, various artifacts of historical-artistic, archeological and archival-bibliographic interest were examined, and the findings published in a series of papers [2-9], which also includes a previous volume on the “Mona Lisa” [10].

It is precisely with this theme that my story and history of Mona Lisa begins, together with the scientific events that led to the publication of the present volume. And the consequent question is: “What is the sequence of these events?

The first is the stylistic analysis and diagnostic-analytical investigation of a Mona Lisa painting, housed in a private museum in St. Petersburg, Russia (Figure 1) [2].

All the results showed that the St. Petersburg Mona Lisa was executed between 1590 and 1660 and is of Nordic derivation, specifically German-Flemish. It excludes the period of life and work of Leonardo from 1452-1519: it is therefore a copy of the Mona Lisa housed in the Louvre Museum, Paris, France, and whose authenticity by Leonardo is unanimously accepted (Figure 2).

Nevertheless, the St. Petersburg Mona Lisa is of good workmanship and in a good state of conservation; however, it lacks the distinctive features of Leonardo’s painting technique, such as the light subtle brushstrokes, the typical warm colors of his landscapes and his “chiaroscuro”.

This first investigation determined my keen interest in this particular subject and, consequently, led to the second phase of my research. This was directed towards an in-depth archival-bibliographic examination of the numerous copies of Mona Lisa executed over the centuries and the corresponding scientific papers by the various scholars [5].

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13 paintings were selected, from which 4 were then chosen as they were considered to be the most complete based on an evaluation not only of the stylistic, but also the technical data: the Prado Mona Lisa (Figure 3), the Reynolds Mona Lisa (Figure 4), the St. Petersburg Mona Lisa (Figure 1) and the Isleworth Mona Lisa (Figure 5), also called the Earlier Mona Lisa. It must be kept in mind, as I said before, that the St. Petersburg Mona Lisa, was the object of study and research carried out with my collaborators in the Diagnostic Laboratory of Cultural Heritage in Bologna University, Italy. Among these 4 paintings, executed at different times, particular attention was paid to the Isleworth Mona Lisa painting.

For the “Isleworth Mona Lisa” or “Earlier Mona Lisa”, unfinished and representing a young Mona Lisa – who, later, we will call Lisa del Giocondo to distinguish her from the Louvre Mona Lisa – it is opportune to specify a previous attribution made in 1922 by a group of experts who established unanimously that the Isleworth Mona Lisa was an “original” by Leonardo (I highlight the term “original” because it was a subjective evaluation, that is, a stylistic and aesthetic analysis without the use of diagnostic technologies). The same group of experts had already evaluated the Louvre Mona Lisa about 10 years earlier and expressed the same positive judgement: a fact which confirms the competence of the experts regarding Leonardo’s painting [10].
In addition to a subjective evaluation and the results of experimental investigations obtained over the years relating to the authentication of the Isleworth Mona Lisa, the following findings are reported:

- **2012**: “Regression Project”, the application of a forensic technique to art, developed by the American Joe Mullins, who demonstrated that the younger figure in the Isleworth Mona Lisa was approximately 11-12 years younger than the Louvre Mona Lisa [11].

- **2017**: “Multispectral digitization” developed by John Asmus of California University (U.S.A.) and Vadim Parfenov of St. Petersburg University (Russia), which measured the brushstrokes relating to the faces of the Louvre and Isleworth portraits and compared them with the faces of other paintings of the same subject.
results revealed that the faces of the Louvre and Isleworth portraits were painted by the same author [12].

- The linen canvas of the support has the same characteristics as the support used by Leonardo to paint his famous draperies.
- It is equally evident how Leonardo’s palette for the Isleworth Mona Lisa remains faithful to the indications and theories expressed in his “Treatise” in the part dedicated to art. In fact, the Louvre Mona Lisa has a red brown ocher imprimatur layer made up of a combination of calcite and quartz grains. This red earth imprimatur is compatible with other famous paintings by Leonardo with the same reddish brown background color which, moreover, is also observed in many of his drawings and studies. The same happens for the other pigments, especially earths, traces of enamel and azurite, present both in the Isleworth Mona Lisa and in other famous works by Leonardo [13-15].

3. Is the Louvre Mona Lisa Leonardo’s second version?

After the previous two phases of my research on the “Mona Lisa” and with the aim of confirming the previous findings of the subjective and objective evaluation of the Isleworth Mona Lisa painting, my imperative was aimed at the development of a further methodological path, thus answering the question which is the title of the book “Is the Louvre Mona Lisa Leonardo’s second version?” [1].

The answer is connected to understanding when the Louvre Mona Lisa was painted by establishing its execution date and, consequently, the date of the other painting mentioned previously, that is, the other version of the Louvre Mona Lisa by Leonardo.

So, looking at the historical-bibliographic references taken from the scientific publications of authors from fifteen hundred to today, the corresponding opinions have been considered and discussed. In relation to this, I would like to highlight that all extracts taken from the texts and examined are faithfully reproduced at the end of the book in order to be consulted in their original version.

To give an answer to the question posed previously “When did Leonardo execute the Louvre Mona Lisa?” and for an easier and clearer understanding, I have collected the various points referring to those texts in a summarized list. The points, which distinguish the two paintings on the basis of 8 respective characteristics, are: historical-bibliographic, visual-aesthetic, stylistic, structural and analytical characteristics. In particular:

**HISTORICAL-BIBLIOGRAPHIC CHARACTERISTICS**

1. Antonio de Beatis, in his diary states that in 1517 Leonardo showed Cardinal Louis of Aragon, who was visiting him in Cloux (France), the painting of “a certain Florentine woman” commissioned by Giuliano De’ Medici.
2. It is documented that Leonardo worked in Rome for Giuliano De’ Medici from 1513 to 1516, while in the early 1500s, from 1503-1506 he was in Florence, where he worked on the painting of Lisa del Giocondo.

**VISUAL-AESTHETIC CHARACTERISTICS**

3. The characteristics of the face of Lisa del Giocondo described by Vasari are very different from those of the Louvre Mona Lisa.
4. The Louvre Mona Lisa presents a figure who is visibly more advanced in age compared to the one of Lisa del Giocondo.
STYLISTIC CHARACTERISTICS
5. In particular the “velato” technique, in addition to the geological and morphological characteristics of the landscape, evidence that the Louvre Mona Lisa painting was executed after 1508.

STRUCTURAL CHARACTERISTICS
6. The background is present in the Louvre Mona Lisa painting, instead it is not present in the Lisa del Giocondo painting, as testified by Vespucci, Raffaello and Vasari.
7. The Lisa del Giocondo painting described by Vasari was unfinished, instead scholars sustain that the Louvre painting is finished.

ANALYTICAL CHARACTERISTICS
8. The Centre de Recherche et de Restauration des Musées de France (C2RMF) performed an infrared reflectography analysis on the Louvre Mona Lisa painting, revealing the order of execution of the various pictorial elements, that is, first, the background and, on top of it, the figure [15]. The Lisa del Giocondo painting, instead, does not present this order of execution, because there is only the figure, and the landscape is missing.

4. Long gestation theory

To end, I would like to mention the “long-gestation” theory, a vain attempt to provide an explanation for the existence of a single painting.

Unable to accept what is specifically and clearly described and documented in the characteristics mentioned above, supporters of this theory link them to the same Louvre Mona Lisa portrait. They point out that Leonardo began to paint the figure of Lisa del Giocondo in Florence in 1503, left it unfinished and then completed it in the following years, after 1508, by adding the background and other elements missing from the painting.

This is how the supporters of this theory justify the presence of the stylistic, morphological and geological elements as well as the “velato/glazing”, characteristic of Leonardo’s pictorial technique in later years, that is after 1508, all in one painting: that of the Louvre Mona Lisa.

This is the attempt to justify what has been highlighted by the previous characteristics in the two distinct paintings which can rightly be called vain.

In addition, the analyses carried out on the Louvre Mona Lisa by the Centre de Recherche et de Restauration des Musées
de France – in particular, the use of infrared reflectography – showed that the background was painted at the same time as the figure and not after an interval of a few years. The sequence of the compositional elements of the painting were therefore executed as follows: first the background and, on top of it, immediately after, the figure (Figure 6).

Furthermore, the continuous network of craquelure shows that the lower and upper parts of the landscape were also painted at the same time (Figure 7).

5. Conclusion

All previous characteristics have demonstrated that the Louvre Mona Lisa cannot be the portrait of Lisa del Giocondo, Leonardo’s work of 1503-1506.

The evidence has therefore shown there must be another painting, different to the Louvre version, providing important information about its style and structure.

Here then, in conclusion, is how my story-history of the case study “Mona Lisa” was born (interest), how it changed (choice), what it achieved (commitment), what it confirmed (certainty).

References

Biographical notes

Salvatore Lorusso was formerly a full Professor at the University of Bologna. He is a Foreign Member of the Russian Academy of Natural Sciences; Emeritus Professor of the Cultural Heritage Institute of Zhejiang University (China); formerly a Visiting Professor at the Academy of Social Science of Zhejiang University, China; Visiting Professor of the Faculty of Arts, Lomonosov Moscow State University, Russia; formerly vice-president of the Società Italiana per il Progresso delle Scienze (SIPS, established in 1839). He is Direttore Generale of the Accademia della Cultura Enogastronomica. His biography appears in the 2016 Marquis Edition of Who’s Who in the World. He is the author of over 445 publications in national and international journals and 25 volumes and monographs covering commodity science, cultural heritage and environmental issues. In 1997, he founded the Diagnostic Laboratory for Cultural Heritage at the Ravenna Campus of the University of Bologna and remained head of the Laboratory for eighteen years. In 2001 he founded the historical-technical Journal “Conservation Science in Cultural Heritage” of which he is Editor-in-Chief. His scientific work deals mainly with the study of the “system: artifact-environment-biota” and diagnostic, analytical, technical and economic evaluation within the context of the protection and valorization of cultural and environmental heritage.
Summary

The research carried out over the years on the theme “Attribution and authentication of artworks” and, therefore, on the case-study “Mona Lisa”, as topical as it is strongly debated, was continued with a first and then a second volume entitled: “Is the Louvre Mona Lisa Leonardo’s second version?”

500 years of historical-bibliographic references taken from publications by scholars of the humanistic and experimental sciences, relating to the question posed in the title of the volume, were examined.

It was proved, with reasonable certainty, that Leonardo executed two distinct and successive paintings of the Mona Lisa with different aesthetic-visual and structural characteristics confirmed by analytical investigations as well as historical-bibliographic examinations. More specifically, this refers to a first unfinished version of the younger Lisa del Giocondo referable to the painting, Isleworth Mona Lisa, called Earlier Mona Lisa, and to the successive version, that is the Louvre Mona Lisa, finished, as a result of a more advanced pictorial technique and different structure.