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On Ars Geminis. Fakes, Forgeries and Copies of Medieval and Renaissance Paintings: Scientific Diagnostics for Art History

1. Introduction: copies, fakes and forgeries … a matter of technical study?[1]

Traditionally, art history has many times been constructed in the quest of uniqueness and originality; searching for germs, seeds and genesis of what is original and new. But uniqueness as a concept is partially questioned by copies and strengthened with forgeries and fakes. So, it could be considered that forgeries, copies, and fake pieces constitute the external siege of what is allegedly original. Thus, in a certain way, it is necessary to study more these categories that allow us to know much more in depth the originals. The reasons are clear: not only is there a market infested by fakes and forgeries, but there is also much controversy about the supposed originality of some artworks. It's also obvious that there is much to say on attribution, but even considering that it rarely proves to be an objective discipline, attribution problems affect directly the advances on some subjects of art history, meaning has collateral effects.

But letting aside those questions – which are out of the focus of this paper –, one must acknowledge, firstly, that art history as we know it is a novel discipline, not older than a couple of centuries, which in terms of time means nothing. Scientific diagnostics for art study have been applied for the first time less than a century ago, but it has not been until the last three decades that they have progressively become a tool for art historians. It must even be considered that, during the first years, only some of the masterpieces were susceptible of being examined, because such exams meant high economical investments.

Forgeries and fakes have scarcely been considered a matter of research; they have also barely reached the range to be worthwhile for scientific examination. At best they have been studied from an iconographic, stylistic or formal point of view. In fact, in most of the 20th century literature about forgeries and fakes the consideration of such terms appears to be much more relevant than any physical or chemical fact.

Fortunately, this has actually started to change. Now the frequent implementation of methodologies for the diagnostic study of artworks and heritage items is a growing phenomenon that begins to return interesting results for the traditional study of art history,[2] specially nowadays that a whole range of scientific techniques, devices and methodologies increasingly less invasive are within reach. The democratization of this type of non-invasive analysis techniques spreads and becomes cheaper day by day. Also the constant improvement of the devices is encouraging an increase of the scientific production of the literature dedicated to the study of the artistic techniques and the materials.[3] Such references allow more and more a systematization of originals and their copies,[4] making even possible an early detection of fakes and forgeries.[5]

As a result of that, forgeries and fakes have also become a matter of study from a technical point of view. Beyond a traditionally styli-

stic approach, the techniques of optical analysis and other non-invasive methodologies are contributing to obtaining results that become useful in order to reaffirm or denial attributions, helping thus to construct more precise catalogues.

More than 1000km away, two university centres share their working methodologies on copies, forgeries and fakes: the LANIAC *(Laboratorio di analisi non invasive su opere d'arte antica, moderna e contemporanea)* of the University of Verona (Italy) and the CAEM (*Centre d'Art d'Època Moderna*) of the University of Lleida (Spain). Despite the fact that these two scientific and technical services are mainly focused on research in the diagnosis of works of art, they also have frequently to deal with copies, fakes and forgeries, usually in collaboration with other research institutions, such as museums or universities, as well as with academics and art professionals, and even with the security agencies.

The aim of this paper is to present several case studies recently examined by both centres through very close methodologies and similar devices and techniques, in order to show some of the most interesting Medieval and Renaissance fakes and forgeries examples, recently discovered and still unpublished. Some of the results described here are technical insights and output data, either collected by one or the other institution. Some of them are, in addition, fruit of their collaboration on research initiatives about such topics. To facilitate the task of the reader, case studies have been classified by categories. It must be kept in mind, as a premise to this paper, that the consideration of forgery is just a matter of criteria.[6] Many of the cases that will be exposed here would be recognized by professionals as not susceptible of confusion with original artworks. For the trained eye it is easy to understand that they are just copies, reproductions, imitations as much. But they are in the market. They make part of it, and they are sold, frequently, as what they pretend to be, but not as what they actually are. Such artworks are in collections and in possession of individuals or institutions who won't be satisfied with an es-

teem based on simply stylistic observation to accept or refuse that something is false. Instead, they would rather request proofs to sustain a verdict. The same thing happens often in trials, since when these artworks are wrongly sold, those affected claim their money back when they notice that they have been deceived. The judges, prosecutors or lawyers can ask for empirical proofs to determine if it has been offence. For all these cases diagnostics, technical and scientific evidences, become useful as forensic sciences.

Finally, the case studies reported here are just a tiny tip of a huge deeper iceberg concerning, in fact, the whole market of art objects and antiques. But Medieval and Renaissance forgeries are not among the most frequent ones. In fact, statistically, they just represent very scarce average of a business which shows much more interest in contemporary forgeries, rather than medieval or modern ages ones.

2. Doubles, duplications and twins: a whole universe of copies

How to talk about art history without talking about copies? Copies of the greatest paintings have been constantly made, since the Renaissance, by authorized or unauthorized ways, feeding back their own fortune and promoting their dissemination.[7] But not only the best masterpieces have been in the spotlight of the copyist. It is difficult to obtain a comprehensive view of the real magnitude and scale of the copy phenomenon until the 20th century since the copy has multiple purposes. Copies of paintings have proliferated with a didactic use, for teaching and specially for learning; they have bred also as duplicates of appreciated artworks, like substitutes of originals, for conservation reasons or even for research. There are also spurious copies, born with the clear intention of deceiving. Others were created for one of the aforementioned reasons and were later used to deceive others misleading the attribution. In short, copies of paintings

are a whole universe themselves. Many times they are close to forgeries and fakes, sometimes even related with them.

Hence, before starting to address other categories of false artworks it is necessary to clarify some aspects on copies. Copies are always relatively faithful duplicates, sometimes so perfectly executed and so close to the originals that they can be considered 'almost originals'. A copy of a painting can be executed as a commission in the same workshop where the original has been created, even carried out by the same hands. Then the concept of 'multiple original' can be applied. A copy can also be painted by a follower, although sometimes the best disciples overcome the masters and become even more notorious figures, and obviously some copies can be thus more appreciated than their respective originals. There are also the copies that become interesting from a historical point of view: for example, a copy of a Renaissance subject done in the 17th century will not only have a great historical relevance but also can have a notorious economical value. A 19th century copy of a Leonardo painting sold as a 17th century copy will constitute a fake. Obviously nobody will believe it is painted by Leonardo's hand, but the price can be very different for both cases with a difference of less than two hundred years. Once more it becomes clear that the definition of fake is a question of judgement.

2.1 Baldassarre Castiglione; a 'courtesan' example of academic copying

Among the portraits that had greater fortune from an iconographic point of view in the modern age, there is undoubtedly that of Baldassarre Castiglione painted by Raphael and now kept in the Musée du Louvre.[8] The painting, of particular beauty and intensity, is probably dated between 1514–1515, when the Mantuan humanist was ambassador of the Duke of Urbino in Rome, and is mentioned in a letter sent to Castiglione by Pietro Bembo (19 April 1516).[9]

The painting has had a great historical fortune. [10] The copies include a painting by Rubens, today at the Courtauld Institute,[11] and the sketch by Rembrandt (Vienna, Albertina), significant because it is a matrix for the portraits of van Rijn and, in particular, for the self-portrait of the National Gallery in London (1640).[12] The presence of the Raphael prototype at the Louvre Museum since 1793 guaranteed an extraordinary visibility to the painting, which became one of the references for the experiences of academic copyists. To understand how important this painting was, it must be kept in mind that when the *Mona Lisa* was stolen in 1911, the portrait of Castiglione was exhibited in its place.

In the list of the numerous copies there are other more or less famous alter egos. A partial copy, limited to the bust, is documented in the Zeri Photo Library as an anonymous work; [13]; a probably ancient copy is preserved in the Sala di Pallade of the Palazzo d'Arco Museum in Mantua,[14] and still in Mantua another is in the series of portraits of the Teresiana Library.[15] It is also documented a *Settecento* copy made by Giuseppe Turchi.[16]

Some of these paintings were taken not from the original but from further copies. Since the original by Raphael is in the gallery of the Italians at the Louvre, it must be said that especially in the 19th century many copies were made by the artists who frequented the great museum to practice and to improve their technical ability. For example, Delacroix created a pencil study of the portrait, today preserved in an album in the Département des Arts graphiques of the Louvre;[17] Edgar Degas, just after the middle of the century, drew the outline of Castiglione in his notebook;[18] Matisse made a copy in the late 19th century,[19] as well as Maurice Denis,[20] and a curious copy made by Salvator Fiume in 1983 depicts Raphael while portraying Baldassarre Castiglione. The list could be even more full-bodied: in this essay we will focus on two unpublished copies of high quality, recently studied by the LANIAC Center.

Fig. 1: Walery Płauszewski, after Raffaello; *Copy of the Portrait of Baldassarre Castiglione*; 1874; oil on canvas; 73 × 60 cm; Complesso Museale Palazzo Ducale di Mantova (Verona, Laniac, Università di Verona / Museum Complex Palazzo Ducale di Mantova). Left: visible image. Right: IRR images (2700nm).

The first case of study is a painting which was auctioned in October 2017 in Lille and was purchased for the Ducale Palace in Mantua[21] (Fig. 1).

By observing the visible and the infrared (IR) images it can be deducted that the execution technique is quite direct and quick; probably because the copy was painted in front of the original. But, while formally it is very close to the image produced by Raphael, technically it is painted in a very diverse way. Nothing is similar to an early *Cinquecento* school. There is a lack of glazes over the painting layers, as it would be expected. Instead, there is a nice work of imitation of such glazes by a formal synthesis, using much more matter. The type of brush strokes reveals a wet-on-wet technique, very common in the 19th century and typically found in all the academic copies of this period. In fact, the

author is the Polish painter Walery Płauszewski (1833, Vesoul – 1908, Clichy-Levallois), active in Paris and known for his copies of the Louvre's works. The picture is signed and dated in the lower right angle, so no misleading is possible here.

We have chosen this example to introduce the second one and to compare both case studies (Fig. 2). It is a painting that comes from the French antique market.[22] It was studied to determine its antiquity and formal characteristics, since there were doubts on its antiquity, and it was wrongly considered as a late *Cinquecento* copy. There were neither signs nor signatures, nor was there a date. The original canvas had been lined on its back and the picture had several varnish layers, so a technical examination was carried out to clarify if it could be, or not, an ancient copy.

At first glance it is clearly a great quality copy. A closer examination with diverse technical photography methodologies reveals interesting details on how it is painted. The expressiveness of the face is provided by a good inter-

Fig. 2: French painter, after Raffaello; *Copy of the Portrait of Baldassarre Castiglione*; late 19th century; oil on canvas; 81 × 64,7 cm; Mantua, Private Collection. (Verona, Laniac, Università di Verona). Left: visible image. Right: IRR image (2700nm).

pretation of the lights of the eyes. The hat and the dress are painted with nuances of umber earths and blacks, unfortunately blurred by a thick layer of varnish. The original pictorial film is subtle and stands out in its refinement in the detail of the hands, which are made with a reddish profile and the colour of the nuanced complexion; it has almost faded out completely. The fur parts of the dress were made by removing the upper part of the pictorial film with quick and light touches of the brush handle, making this detail particularly soft to the eye, almost with a velvety tactile sensation.

The ultraviolet fluorescence showed that there were several varnish layers, and little or almost none retouching, but it also evidenced that the canvas had in fact undergone a selective cleaning on the face and the hands. The infrared imaging (IR-IRT) discovered some special characteristics related to the way the copy was created. There is not much preparation over the

canvas, which shows a traditional loom crafting and the cloth becomes easily visible in the IR, specially in transmitted infrared (IRT). The paint has been applied quite directly, although some profiles had been delineated with soft touches of the brush. Many parts are done with very diluted paint, just like an initial turpentine painting, while in other parts the painting is a thicker matter.

There are glazes and coloured varnishes over the paint layer, but in many of them a subtle alligator crackling has been formed.[23] This is a characteristic of the 19th century painting, and is a very typical pathology of academic copies, since great amounts of siccative mediums were frequently used, like it also happens in some parts of the aforementioned Płauszewski's example. The infrared transmitted photograph (IRT) shows the first brushstrokes, and the way the first staining was executed, which actually do not differ much from the way reported in the first case.

In conclusion, this second case study is another academic 19th century copy. It is probably a bit older than the other one, but painted, in any case, after 1800, as all the proofs seem to

suggest. The falsity is not in the object but in the wrong criterion of having considered it as a *Cinquecento* copy.

2.2 The perverse twin, or the dark side of the mirror

But copies are not always recognised as copies. Sometimes spurious twins appear in the market, or among the works of art of private and even public collections as pretended originals.

An interesting example of this case recently occurred in Catalonia in 2016 when the MD'A (*Museu d'Art de Girona*)[24] started to suspect the authenticity of three exhibited panels that were part of a polyptych attributed to Pere Matas and dated around 1536. Although the curators and restorers had had doubts about their presumed originality from the beginning, the alarm bells ranged in 2016. A well-known Spanish auction house was offering for sale a lot of six paintings with this same attribution and date, two of which were exactly identical to those exhibited in the MD'A. In fact, those of the museum had been acquired in 2010, and after the suspicions the need for an analysis became obvious in order to clarify their antiquity. Several diagnostic exams were carried out by the University of Barcelona and specially by the CRB-MC (*Centre de Restauració de Bens Mobles de la Generalitat de Catalunya*).[25] Although the panels had an antique appearance, displaying common pathologies (as splits, cracks, yellowing or wormholes), and despite the fact they were painted on what seemed to be, at first sight, Spanish Renaissance dovetailed pinewood supports, nothing was authentic. X-Rays imaging showed no contrast due to the lack of white lead, and anachronistic pigments like Prussian blue of barium and titanium white were identified. They all obviously turned out to be 20th century forgeries.[26]

Such kind of recreations are even more frequent of what one would expect, and the problem is that since they are copies they cannot be identified – neither by iconographic nor by formal or stylistic mistakes. If they are properly painted, they only can be recognised as copies/forgeries by materials or procedures identification, which results even difficult when we talk about good quality ancient copies, especially if they are contemporary or almost coetaneous to the originals.

3. Clumsy hands hold the brush of the masters: reusing, pastiches and stylistic recreations

Sometimes forgeries smell like what they are to a trained nose, and a simple glance at them induces the observer to doubt their authenticity. Usually, it is the way in which they are painted that is enough to reveal their falsity, even when depicting a historical issue, and even when they have a consequent and credible aging. Sometimes iconographic mistakes or weird aspects on their composition become proofs of their deceit. But once more such mistrusts must be properly demonstrated before a verdict is stated, in order not to advance unfounded suspicions.

Some forgers reuse motifs of a determinate master, repeating partially characters or elements of their compositions, sometimes by isolating them, and other times by picking a bunch of elements from diverse artworks and mixing them to create an *ex nuovo,* which is known as pastiche. Others prefer to observe and imitate the most recognizable master's stylistic characteristics without copying any actual piece, fragment or element, but trying to recreate what they consider is the pictorial language of a master, which in fact could be considered a stylistic recreation. Some others go further trying to deepen into what they believe is the manner or a period or a school, without realising that such considerations are in fact the fruit of modern aesthetic appreciations.[27] Nevertheless, all these categories of recreations become very interesting since they are the harvest of time and taste, and technically they report the artistic knowledge of the society of a period about other periods, showing how far away or close they are.

Fig. 3: Unknown; *Copy of a fragment of the Altar Frontal of Santa Maria de Mosoll*; 20th century; mixed technique on panel; Catalonia, Private Collection (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).

Fig. 4: Unknown; *Copy of a fragment of the Altar Frontal of Santa Maria de Mosoll*; 20th century; mixed technique on panel; Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida). UVF photograph (365nm).

3.1 In the manner of a disciple of a follower of an apprentice of the Master: stylistic recreations

The first case study presented here is an altar frontal, depicting the Journey of the Wise men on horseback to worship the baby Jesus, with their names over them, inscribed in three arches. It is a mixed tempera technique on wood (66 x 35 cm), with *pastillage* stucco reliefs, and it doesn't seem to be complete (Fig. 3).

The composition of the piece reproduces the upper left quadrant of the Romanesque altar frontal from the parish church of Santa Maria de Mosoll. The model is a

pinewood panel painted with tempera, dating from the first third of the thirteenth century preserved in the *Museu Nacional d'Art de Catalunya* (MNAC).[28] It could be said that it is not an exact copy of the upper quadrant of this piece, but the formal debits are obvious and even the size is quite similar for both cases (the aforementioned quadrant of the MNAC altarpiece measures 69 x 36,5 cm).

The main table shows signs of real aging, such as the lignin that has darkened the wood, and a quite dry appearance. There are plenty of galleries of xylophages, but some of them seem to have been covered with the stucco, what would mean that the holes and galleries were yet there when the ground was applied over the panel. This is quite visible, for example, in the burnt area in the lower left corner. The panel presents numerous pathologies, and the main piece of the support is clearly a quite ancient material although it does not seem a wood with more than four hundred years. The wood shows some bending, and despite it could be a truly ancient material, it does not seem to be a medieval age one. The slats that form the moldings present an excessively straight cut, with very sharp edges, characteristics that do not correspond with the type of pieces found in original works of the Romanesque period.

In fact, with all these characteristics, the CAEM staff was able to consider such an artwork as an anachronistic copy. But, attending to the modes of research of such kind of odd pieces, technical photographs were carried out.

An ultraviolet fluorescence photograph (UVF) (Fig. 4), and an infrared image (IR) were taken. While the IR image did not reveal anything special, the UVF image one was relentless, showing multiple contradictions that prove the falsehood of the artwork. It did not show the presence of any varnish but it clearly presented an orange fluorescence, typical of shellacs. Even on the burnt areas the shellac had been applied, being the only layer. Two minor inpaints were visible, but they were insignificant, considering the

antiquity. There were no stains, no wax splatters as it could be expected, there were even no crackles in the preparation, just over the shellac.

A closer inspection with the digital magnifying endoscope revealed some interesting details (Fig. 5). Little rusty industrial nails were found under the stucco. Some colours had a strange appearance when they were observed through the microscope, not being recognized as historical pigments, and all the pathologies found just affected the shellac layer.

It was, in conclusion, a case of a forgery imitating the style of a school, but not a master. It was recognized as a false artwork from the first half of the 20th century, a moment when the Catalonian Romanesque artworks were much appreciated.

The second example is a tempera painting on pinewood (42,5 x 32,5 cm), probably with a mix technique, that reached the CAEM in 2014.[29] A deep analysis was commissioned by its current owner who had suspicions about its authenticity, probably because it had been acquired as a Renaissance piece. It is a version of one of Botticelli's masterpieces (Fig. 6), dated ca. 1481. The composition of the panel derives, in fact, from the so-called *Madonna del Libro,* actually in the Poldi Pezzoli Museum in Milan, showing absolute debits to this panel.[30]

The first weird thing that stands out in this case is the lack of the background: the original window and landscape, as well as the inner room have disappeared and have been substituted by a gilded flat bottom, what turns to be either a great anachronism or a great incoherence for such an Italian late *Quattrocento* model.

The panel is made of pinewood and assembled as a hybrid between Spanish and Italian panels.[31] The wood is not really properly assembled, as it usually was in Castilian and Aragonian pieces. Once more, although it seems to be a quite dried wood, it would be difficult to consider the support as a five hundred years old one, not only due to its appearance but also for the way it had been cut. There were some xylo-
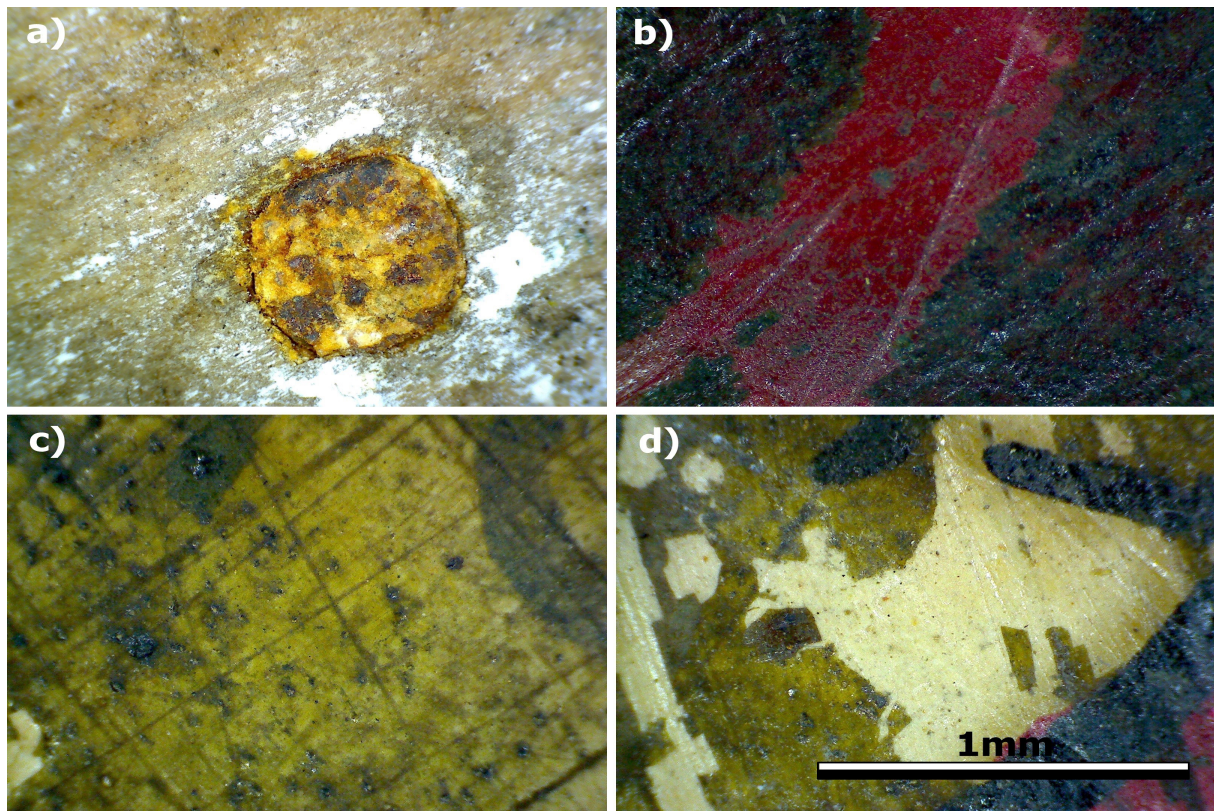
Fig. 5: Several macro details of the *Copy of a fragment of the Altar Frontal of Santa Maria de Mosoll.* (Lleida,Centre d'Art d'Època Moderna, Universitat de LLeida). (a) Rusty modern nail. (a) Red mark that should be done with a madder lake and not with a pigment. (c) Scratched surface under a lac-dye yellowed varnish. (d) The yellowed lac-dye varnish, crackled and flaked off.

phages galleries on its back and the lignin was yet present over the wood grain.

On the front side some varnish layers were appreciable, but no major pathologies were visible. The paint layers had some subtle cracks, mainly following the grain of the wood. The gold leaf had some lacunas and seemed to have been overgilded. It looked like a nice *Madonna* in a pretty good condition, but there was something odd there that was out of place.

In order to collect some more data from the painting, it was decided to carry out some technical imaging, IR and UVF photographs. While UVF showed some layers of varnish over the figures and scarce retouching, IR (Fig. 7, right) showed the use of a tracing paper. Obviously, the use of tracings has been widely documented for many workshop artworks but,

Fig. 6: Unknown, after Sandro Botticelli; *Copy of Madonna del libro;* 20th century; oil on panel; 42,5 x 32,5 cm; Aragón, Private Collection (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).

Fig. 7: Unknown, after Sandro Botticelli; *Copy of Madonna del libro;* 20th century; oil on panel; 42,5 x 32,5 cm; Aragón, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida). Left: visible detail of the main figure. Cracks are noticeable. Right: IR image of the same part reveals the presence of a charcoal tracing paper (1100nm).
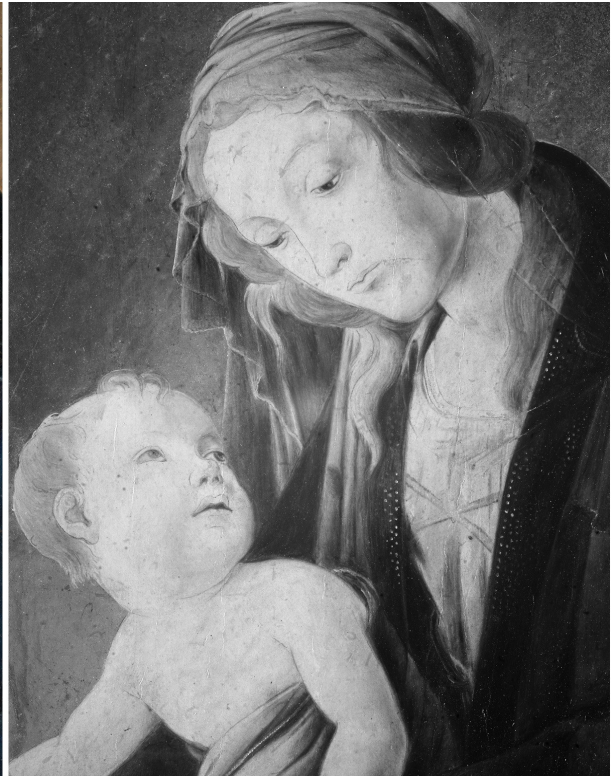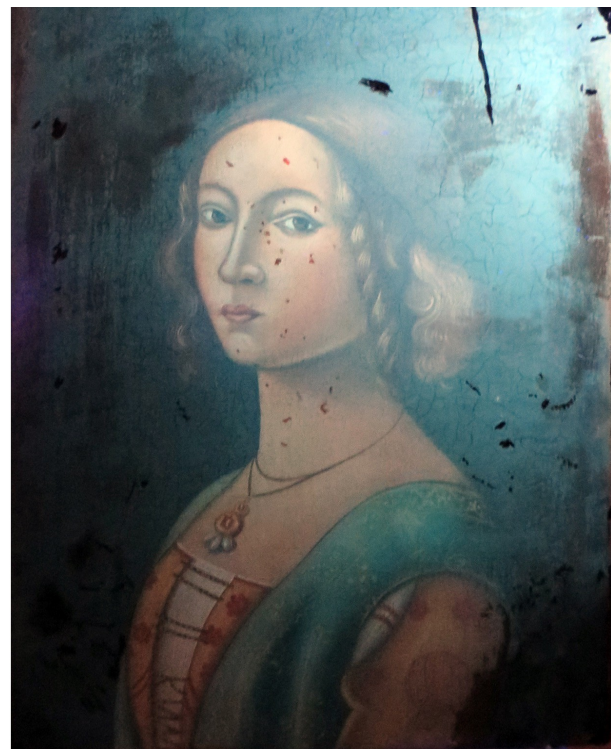
Fig. 8: Unknown, after Domenico Ghirlandaio; *Copy of the figure of Giovanna Tornabuoni;* 20th century; oil on panel?; 40 x 35 cm; Private Collection. (Verona, Laniac, Università di Verona). Left: visible image. Right: UVF image (365nm).

however, its use hardly ever implied delineating all the elements, but rather marking the main ones, such as eyes, eyebrows, mouth or just the silhouettes. But for this case, the whole lines of the figure had been subtly traced, delimitating not only profiles, but every single element of each figure.

Bearing in mind all the aforementioned proofs, the CAEM staff intended to terminate the proceeding, considering yet it was a copy from the late 19th or 20th century, without the need of more technical evidence. But, on request of its owner, a RAMAN spectroscopy was carried out for the main pigments, in order to obtain a more precise dating. Traditional historical pigments like vermilion, ochre, raw umber, sienna earths and iron oxide, were found together with azo yellow, titanium white and phthalocyanine green and blue, which means that the panel could not have been painted before the 1930's.

The third case study was documented and examined by the LANIAC in November of 2015. It is a little maiden portrait, bust side, painted with oil on wooden panel (40 x 35 cm), cradled on its back, and constituted of only piece (Fig. 8, left).

The subject depicted is clearly inspired by the portrait of Giovanna Tornabuoni by Domenico Ghirlandaio, in *Cappella Tornabuoni* (Santa Maria Novella, Firenze), taken from the cycle of the *Birth of Saint John the Baptist.* It is firstly interesting the fact the figure is taken from a fresco painting and represented on a panel, which yet itself could be a quite weird aspect. The background has been substituted by a flat black bottom, and some minor changes have been applied over the robes and details, if compared with the original figure on the wall of Santa Maria Novella.

The panel was totally flat, without apparent bending, and no major signs of mechanical damage were visible, so it could be said that it was in great condition, despite showing some minor conservation or restoration actions. All over the panel a clear net of crackles was visible. This web didn't follow the wood grain direc-

tion, but the crackles instead seem to be grown randomly. The panel was glued onto an auxiliary back panel and then all together had been cradled, i.e. its wooden panel back was reinforced. Some woodworm galleries were visible on the sides. There were odd things in the way the painting had been executed; in fact, keeping in mind the *Quattrocento* manners, this one seemed to be flatter, with scarce colour degradation or modulation, and a very vivid appearance of the chromatic palette. The carnations resulted to be too homogeneous, flat, and with a notorious lack of middle shades. The drapery was synthetic, even with little modulations, very sweep and devoid of volume. Over the clothes the embroiling and laces seemed to be depicted with calligraphic taste.

All together these features clearly generated a strange sensation at first glance. The ground preparation was really subtle (too much if compared with other Renaissance gessoes), and the paint layer was covered with what seemed to be a thin coating but of a not really yellowed varnish. The ultra violet fluorescence photograph (UVF) showed some inpaints, micro retouching here and there, a repaired split and a big stucco lacuna over the lower right corner (Fig. 8, right). There was a homogeneous varnish layer, with a little green fluorescence, but no signs of other varnish layers seemed to be visible.

The infrared reflectography (Fig. 9) showed a very insecure pencil underdrawing, constantly remarked or corrected, manifesting a quite dirty and messy execution. Even a square grid was visible. The way those lines had been traced and then smudged reveals a non-professional hand. The underdrawing didn't resemble any modern age sketch, and all seemed to be recently and clumsily done, despite the appearance of antiquity legitimate by cracks, restorations and cradling.

The last case study is once more a *Madonna* that reached the CAEM in 2016 (Fig. 10), although an official study about it was never carried out. It was a little canvas[32] with a stunning *aedicule* frame, supposed to be of the first

Fig. 9: Unknown, after Domenico Ghirlandaio; *Copy of the figure of Giovanna Tornabuoni;* 20th century; oil on panel?; 40 x 35 cm; Private Collection. (Verona, Laniac, Università di Verona). Detail of the IRR image (2700nm).

years of the *Cinquecento* or a very late *Quattrocento*'s artwork, showing some Tuscany language characteristics in a very peculiar manner. Not only the frame was a bit strange but also the support was unusual, even considering its appearance of very old cloth.[33] However, it was a nice artwork with an ancient patina.

There was something strange with the depicted theme. Beyond the greenish cloak,[34] it showed a weird iconographic incoherence in its own composition. Whom was the Virgin adoring? The character was partially picked from an adoration scene, and it was quickly recognised as a painting in the manner of Lorenzo di Credi (1459–1537). Despite showing a clear bunch of *stileme* of such author's *Madonnas*, none was identified as the true iconographic reference. Anyway, the closest, formally, was the inverted image of the *Madonna adoring the Child* (aka. *Tondo Karlsruhe*, ca. 1480) at the Staatliche Kunsthalle Karlsruhe (Germany). Some debits were also found to the *Madonnas adoring the Child*, like the exemplars of the Metropolitan in New York and Galleria dell'Accademia, Florence, both by the same author. It finally resembled Fra' Bartolomeo's *Adorazione del Bambino*, in Galleria Borghese, Roma.

But letting aside such facts, it had an interesting ancient looking, with an old appearance and patina, showing a very unusual net of

cracks and some other strange pathologies, including blisters, parts where the paint has no longer adhesion, some yellowing. So just in order to gather some more information of it, it was decided to take VIS, IR, and UVF photographs (Fig. 11). The Ultraviolet Fluorescence photograph (UVF) (Fig. 11, right) showed a great condition painting, with little retouching. Only a few inpaints with analogous purplish fluorescence around the arm and elbow evidenced one moment of retouching. There was a scarce varnish layer and it even seemed to have been applied without removing the frame. There was a strange abrasion or erosion of some parts, with a purplish reflection in the UVF photograph.

Since IR (Fig. 11, middle) showed lines of what was considered black pencil and since the support was a canvas it was considered to take an infrared transmitted light (IRT) photograph (Fig. 12). Lines drawn with pencil could perfectly be visible then over the whole figure. The cracking seemed to be either a drying pattern or a chemical one, because it was not a

Fig. 10: Unknown, after Lorenzo di Credi; *Virgin Adoring*; 20th century; oil on canvas; 29 x 23 cm; Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).

Fig. 11: Unknown, after Lorenzo di Credi; *Virgin Adoring*; 20th century; oil on canvas; 29 x 23 cm; Catalonia, Private Collection. (L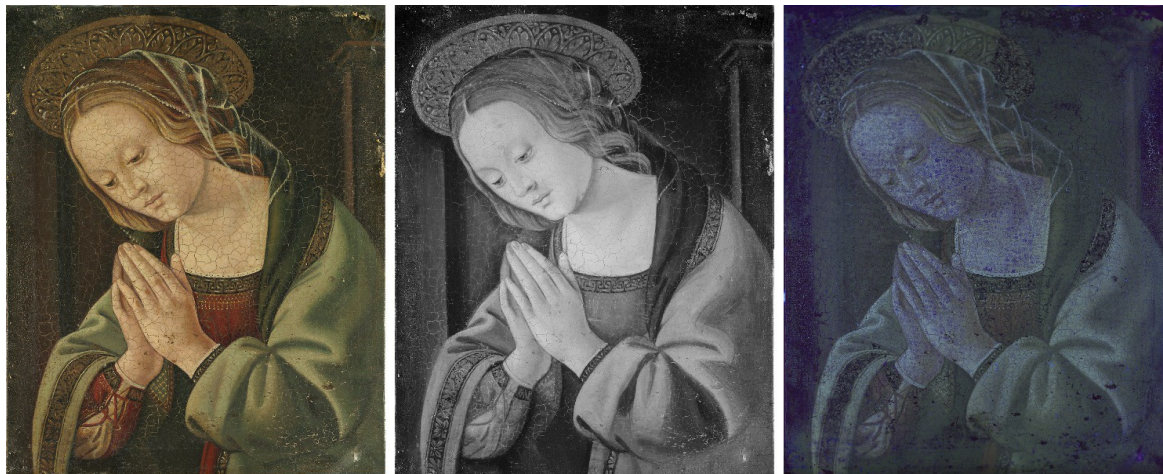leida, Centre d'Art d'Època Moderna, Universitat de Lleida). Left: Visible image. Middle: IR image (1100nm). Right: UVF image (365nm).

canvas common crackle. There was neither tenting, nor cupping; there were no mechanical movements cracks. Instead, the pattern looked like the result of the reaction of a cracking varnish or a similar product, maybe combined with heat.

According to the material inspection and the clues given by technical photography, it was probably done in the middle decades of the 20th century. It finally was considered to be the work of an aesthetic imitator who, like had happened for all of the aforementioned cases, had voluntarily omitted any reference to his identification or any data of his authorship. Anyway, like the rest of the examples, this piece could not be misleaded, in any case, with a real renaissance Madonna.

As seen, in the four stylistic recreations, the character of each master or school has been reproduced or partially copied, usually by taking them out of their respective original contexts and by isolating them. Minor changes have been applied in their robes, colours, ornaments and backgrounds. A close inspection of all the examples reveals that, in spite of imitating a master figure, the procedures and methods of painting are very far away from those of their respective original schools.

3.2 The talented Mr. Ripper, or how to assemble a fantastic pastiche

Even more interesting than the previous category are the pastiches, since they result of a mix of elements that have diverse iconographic or formal references, some of them composed in a very creative or imaginative way. Sometimes this kind of work shows debits to more than one master, being inspired by elements of several coetaneous manners.
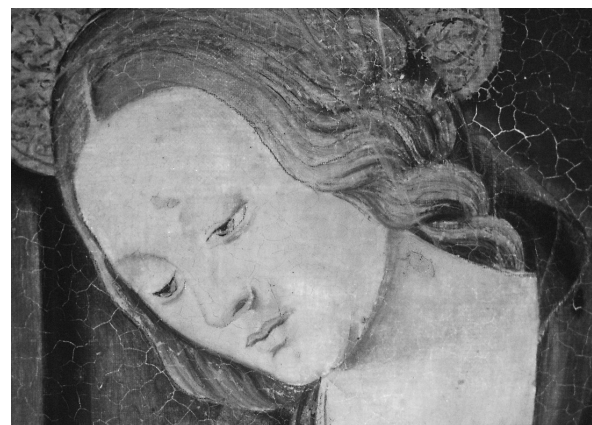

Fig. 12: Unknown, after Lorenzo di Credi; *Virgin Adoring*; 20th century; oil on canvas; 29 x 23 cm; Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida). Infrared transmitted IRT showed the pencil lines used in a freehand delineation (1100nm).

Fig. 13: Unknown, imitating Bernardino Parentino; *Hercules retrieving Alcestis from the Underworld*; 19th century; mixed technique on panel; 49 x 72 cm. Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr). Above: Visible image. Down: UVF image (365nm).

That is what seems to happen with the first and second case studies that will be analysed in this section, entitled respectively *Hercules retrieving Alcestis from the Underworld* (Inv. Cl.1 n. 624)[35] and *Battle between Centaurs and Lapiths* (Inv. Cl.1 n. 506),[36] both conserved since 1830 in Museo Correr (Venezia). Both are fine quality paintings with a doubtful attribution to Bernardo Parentino (ca. 1450–ca. 1500). Not only they are paintings in the style of Parentino, but they also seem to be related with different northern Italian schools showing special debits to the style of Mantegna and Bellini. Both cases include an odd inscription with an even more wrong attribution, as it will be exposed later. They are, in fact, very similar, undoubtedly executed by the same hand, and with analogous shape and size, but depicting different classical subjects. The panels

were studied together with the museum curators in a special campaign carried out by the LANIAC co-involving also the CAEM, during the summer of 2017.

The first of these cases is the Hercules panel (Fig. 13, above) painted with oil or mixed technique on poplar wood (49 x 72 cm). The composition shows simultaneous synoptic scenes of the *katabasis* of Hercules on his trip into *Averno* to retrieve Alcestis from the underworld (although a parallel iconographic reading can be done, by recognising the subject of the twelfth labour: the dressage and subjugation of Cerberus, in what seems a mixing of the two episodes of the myth). There are several characters, like Pluto and Alcestis in the grotto of the underworld's deity, Tityos, whose innards are being eaten by the Fury, and Sisyphus carrying the rock. There are also Meleager and Gorgon, and of course Cerberus, the beast that had to be captured by the hero. All very convincing, much in the cultural taste of the northern *Quattrocento*.

But, once more, the panel shows strange characteristics. The first thing is the rare conservation condition. The whole colour layer is full of dents and lacunas, that seem to be caused by some kind of spatula, brush or instrument. Despite such appearance of great delaminations and flaking, the paint layer is compact and shows very scarce and subtle cracks and crackles. There doesn't seem to be a clear reason to explain such losses which, on the other hand, show a white fluorescence in UVF (Fig. 13, down), maybe caused by the action of a consolidating agent. In this case, lacunas affect mainly the skies and landscape and not so much the figures, although the lower borders are totally chipped, causing partial losses on Tityos and Gorgon.[37]

The style of the artwork is very close to that of Parentino, but not exactly the same. When searching and looking through the scarce production of the Istrian painter, one notices that there are subtle formal differences between this case study and other Parentino's artworks. The

lack of any kind of *tratteggio* is a very strange evidence, and the IR shows a quite particular underdrawing, made with ink, that doesn't fit well with Parentino's underdrawings (Fig. 14).

Fig. 14: Unknown, imitating Bernardino Parentino; *Hercules retrieving Alcestis from the Underworld*; 19th century; mixed technique on panel; 49 x 72 cm. Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr). IRR detail (2700nm).

These differences become obvious when confronting the *ductus* of this panel with the way Parentino paints and depicts anatomies, especially faces. A glance at the composition of this case study shows specific debits to other figures of the painter. For example Hercules inside the grotto results from an inversion of the body of Saint Sebastian from the *Saint Sebastian martyrdom*, (tempera on wood, 51 x 34 cm; ca. 1480, Royal Collection, Hampton Court London). [38] Despite the borrowings from this painting, there is a notable difference of quality between the London example and the Venetian panel. Meleagre's red armour can be inspired by the executor with the arch in Saint Sebastian's panel. Sisyphus pushing the rock shows direct debits to the ochre skinned demon in the left corner of *The Temptations of Saint Antony* (mixed technique on panel, 46,4 x 58,2 cm, Galleria Doria

Pamphilj, Roma).[39] The figure of Hercules wielding the bludgeon shows clear reminiscence of the black devil figure in the aforementioned temptations panel.

Obviously such 'formal' rips constitute a hint of a pastiche practice, but they cannot be considered definitive proofs, although, once more, they join the rest of the evidence against its authenticity. But before forming a judgement and making conclusions, let's go ahead with the second example, absolutely related, as stated before, with this first case.

The second case study of this section is an analogous panel, very similar to the one with Hercules, but depicting the subject of the *Battle between Centaurs and Lapiths* (mixed technique on panel, 50 x 72 cm), (Fig. 15, above). This panel shows very similar characteristics with the first example, but it is in worse condition and

Fig. 15: Unknown, imitating Bernardino Parentino and others styles?; *Battle between Centaurs and Lapiths*; 19th century; mixed technique on panel; 50 x 72 cm. Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr). Above: Visible image. Down: UVF image (365nm). Notice the diverse fluorescence of white colours.

the quality is lower than in the first one. It depicts a classical subject in some kind of *Quattrocento* language that reminds the cycle of *Nastagio degli Onesti* by Sandro Botticelli, of which it could be inspired.

The first noticeable thing is the colour of the panel. The chromatic palette has some odd tones, like clear shrill yellows in the dresses of two maiden or pink tones in the boots of a soldier. They respectively have reminiscences with the lead-tin yellow and the vermillion-lead white tone, used as a base for lakes, but they are a bit different. They are, probably, too strident.

The UVF image (Fig. 15, down) shows a lot of retouches and inpaints. Outstanding like had happened for the Hercules panel, is the lack of any greenish layer of historical varnish, which allows us to observe the real fluorescence of colours. When comparing the visible with the UVF images it becomes evident that the very clear colours (those in which an amount of white pigment is present) display two diverse fluorescence patterns. Roughly, there can be observed a whiter fluorescence found in the carnations of figures and in the linen cloth, and a yellower fluorescence found over the yellow dresses, the horses' bodies and the architecture. This yellowish fluorescence is commonly produced by zinc pigments, while white lead pigments produce a white fluorescence.[40] But since this is just a rough approximation, it was considered best to carry out an X-Ray Fluorescence Spectroscopy (XRF) on several points of the picture, after discarding the retouched areas, visible in UVF.

The presence of zinc white (available in the market since the first years of 1800)[41] is very significant. It is displayed together with the lead white, to cover large areas, as seen in the UVF, so it cannot be considered a matter of retouch. In addition, lead-chrome yellow[42] mixed with zinc white was identified in the yellow dresses.

The IR shows a lost underdrawing, displaying an odd appearance, but directly related to the previous example. It seems that the forger used almost destroyed antique panels and

Fig. 16: Unknown, after Bernardino Parentino and others?; *Battle between Centaurs and Lapiths*; 19th century; mixed technique on panel; 50 x 72 cm. Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr) Detail of the visible image.

painted over them. Subtle crackles are visible inside the lacunas over the preparation ground (Fig. 16). The conclusion appears to be clear: they are 19th centuries forgeries, both made by the same hand. In addition, it must be highlighted that other forgeries wrongly attributed to Parentino and depicted in a very similar manner have already been detected in the market and recognised as spurious artworks.[43]

The third case study is a painting depicting an unidentified *Apostle*, in the style of Doménikos Theotokópoulos, aka. El Greco (Fig. 17). It is an oil on canvas, measuring 52 x 42 cm. It was studied by the CAEM staff in 2015.

The support is a traditional handcrafted thick linen canvas that has a modern back lining. Since at first glance the artwork appeared to have iconographical mistakes, suspects didn't fail to arrive soon. In fact, it was an apostle, dressed in red and green but with any of the attributes that would have permitted his identification. Instead, there is a hand depicted with a blessing gesture, which is usually limited to the representations of Christ in all the pictorial production of El Greco.

In fact, it was soon recognised as a pastiche. The blessing hand should normally be the right one, not the left, which is a noticeable discrepancy. The hand is inspired mainly by the

Fig. 17: Unknown, imitating El Greco; *Apostle*; 19th century; oil on canvas; 52,5 x 42 cm. Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).

Fig. 18: Unknown, imitating El Greco; *Apostle*; 19th century; oil on canvas; 52,5 x 42 cm. Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de LLeida). Left: UVF image (365 nm). Right: X-Ray image. Notice the differences in the application of the white masses.

right hand of *Christ the Redeemer*, Museo de El Greco (Toledo) as well as the mantle and the cloak position. The face, instead, shows debits to the *Saint James the Younger*, in Museo del Prado (Madrid), but specially with the countenance of Saint Paul from *The apostles Saint Peter and Saint Paul*,[44] also in Museo del Prado, a copy by an unknown author of the same subject kept at the Hermitage Museum, Saint Petersburg. That same figure of Saint Paul may have also inspired the cloak. The Prado's painting was wrongly attributed to El Greco during the 19th century, but today there is no discussion over its nature of copy.

The ultraviolet fluorescence (UVF) showed several old varnish layers with a quite greenish appearance, which means diverse moments of revarnishing with different based varnishes. Some inpaints were also visible, as well as some cracks (Fig. 18, left). An X-Ray image was carried out and when confronted with the visible
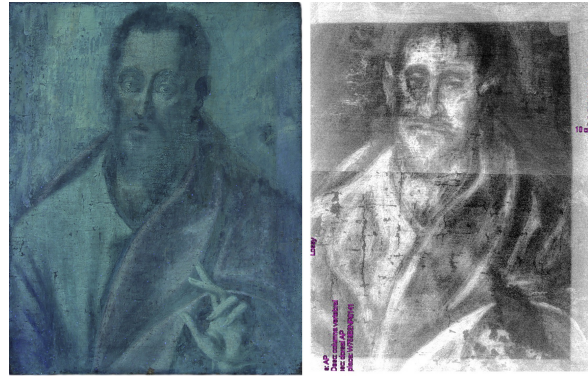
and UVF images notorious differences became evident. The X-Ray image shows another configuration of the lights of the cloak and the mantle, as well as important differences with the face, wider in the radiography (Fig. 18, right). The left hand is not visible with this technique so no lead white was used in that carnation. The canvas shows strange crack lines of different nature. There are real aging cracks, mixed with rolling horizontal cracks, clearly produced to break the pictorial layers visible with raking light, and finally there are also feigned cracks, painted over the surface (Fig. 19).

A Raman spectroscopy was carried out over 13 points of the surface in order to determine if it was a 17th copy of another artwork by this same author, as requested by its owners. Among many historical renaissance pigments, again zinc white and chrome green were found, typical of the 1800's palettes.

The study of the pigments, as well as the interpretation of all the technical photograph evidence allows ruling out the possibility of considering the visible part of this work as neither a production of the 17th century, nor something directly related with Doménikos Theotokópoulos or his workshop. It is probably a piece that can be dated in the second half of the 19th century, or in the first decades of the 20th century, a period in which many replicas of the admired master saw the light because of the renewed admiration
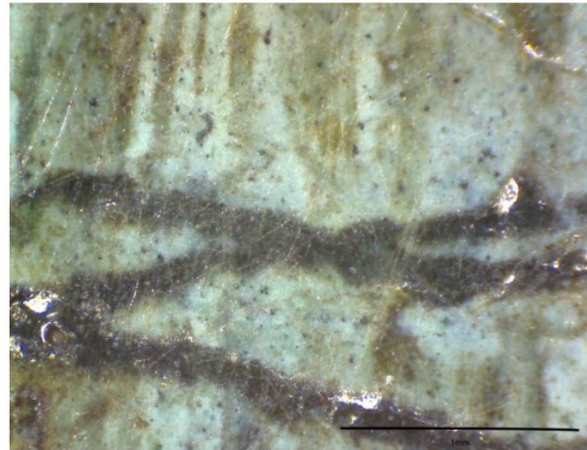
Fig. 19: Detail of feigned cracks, painted over the canvas. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).

for the expressiveness of his style.[45] But it is probably an overpaint of a late 17th or early 18th century canvas already depicting some kind of copy of a Greco's artwork, what could constitute a curious case of fake over a copy.

3.3 *Artificio et arti-oficio*. Reinventing a style, or the revival of the impossible

Sometimes, the forgers are so bold and presumptuous that they almost unconsciously reinvent what they consider a style, a manner or a language, and which, in fact has never existed. This was a quite common practice in moments of 'revival' when the artistic production of a certain period was revaluated and enjoyed great social acceptance by its cultural, artistic, aesthetic, historical or economic implications. When such artworks appear, it's usually quite easy to notice that they are some kind of anachronistic imitations or recreations.

These kinds of paintings specially emerged during the end of the 18th century, along with all the 19th and in the first decades of the 20th, reaching sometimes museums and institutions. We will briefly present here two case studies kept in Museo Correr (Venezia), (although there are many others), studied together with the museum curators in the aforementioned campaign carried out by the LANIAC co-involving also the CAEM during the summer of 2017.

The first is entitled *Noblemen in a landscape* (oil on wood), 140 x 85 cm[46] (Fig. 20), a sort of reinvention of a first *Cinquecento* style, that has nothing in common with the technique and formal languages of the period but which instead shows some kind of aesthetic morbidity, or vacuous figurative taste. Neither the choice of the wood nor the construction of the panel, nor the way it is drawn or painted matches a 16th century style execution. Despite it has a quite interesting old appearance, including crackles and splits and a smoked dark patina, it is just a fantastic and impossible recreation of what a 16th century painting presumably was, made from an 19th century point of view. Very similar to that case, and probably executed by the same hand, is the artwork entitled *Youngsters and ancient* (oil on wood), 84,5 x 64,5 cm[47] (Fig. 21).

4. Sins, signs and signatures

Before concluding this paper, we consider it necessary to mention a question that is not so common in Modern Age forgeries, but that is rather frequent in 19th and 20th centuries ones. We mean the practice of putting a signature or a sign of an attribution, as an effective way to stimulate the legitimization of a painting. Obviously

Fig. 20: Unknown; *Noblemen in a landscape*; 19th century; oil on wood; 140 x 85 cm; Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr) Detail of the IRR image (2700nm).

Fig. 21: Unknown; Youngsters and ancient; 19th century; oil on wood; 84,5 x 64,5 cm; Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr) Detail of the IRR image (2700nm).

some painters used to sign their works either by adding an inscription or a sign, but this was not the most common practice in the Renaissance and is something that was never done in the Middle Ages.

A cartouche with a wrong attribution is a very common element in many antique artworks, claiming for a better identity of that they would actually have. The question of adding signatures in the paintings was addressed by Massimo Ferretti underlining how this practice was a parallel phenomenon to that which involved the manipulation, or falsification, of medieval documents.[48] As in the case of documents, the forger intended to build a glorious past, or prestigious genealogies: in the same way he who added to the painting an illustrious name has attempted to ennoble the work of art. In this regard, Mauro Natale also recalls some cases in which a card with an apocryphal signature and a fake date is painted on a historical work.[49] We present here some brief cases from Museo Correr.

Since we have already previously referred to them, it seems logical to start retaking the panels of *Hercules* (Fig. 13) and the *Centaurs and Lapiths* (Fig. 15). In both cases there are cartridges with an attribution to Pietro Perugino (Fig. 22), and a date, 1481. The name sounds close to Parentino, but such a wrong attribution is, at least, significant.

The last painting to conclude this chapter is a *Saint Augustine, as bishop* (oil on canvas), 100 x 81 cm,[50] attributed to Lazzaro Bastiani (Fig. 23). It is a curious painting, once much more in the taste of 1800 but recreating Bellini's language. Somebody added on the flap of the closure the inscription "Jacopo Belli(ni, (1)430" (Fig. 24), but that obviously was never done by Bellini himself, and even the attribution to Bastiani seems to be questionable, since it's probably a 19th century painting following a drawing by Bellini, conserved in London,[51] as the technical proofs seem to suggest.

Fig. 22: Unknown; *Youngsters and ancient*; 19th century; oil on wood; 84,5 x 64,5cm; Venezia, Museo Correr. (Verona, Laniac / Venezia Museo Correr) Detail of the IRR image (2700nm).

Fig. 22: Details of two apocryphal attributions depicted over forgeries. (Verona, Laniac, Università di Verona / Venezia Museo Correr)
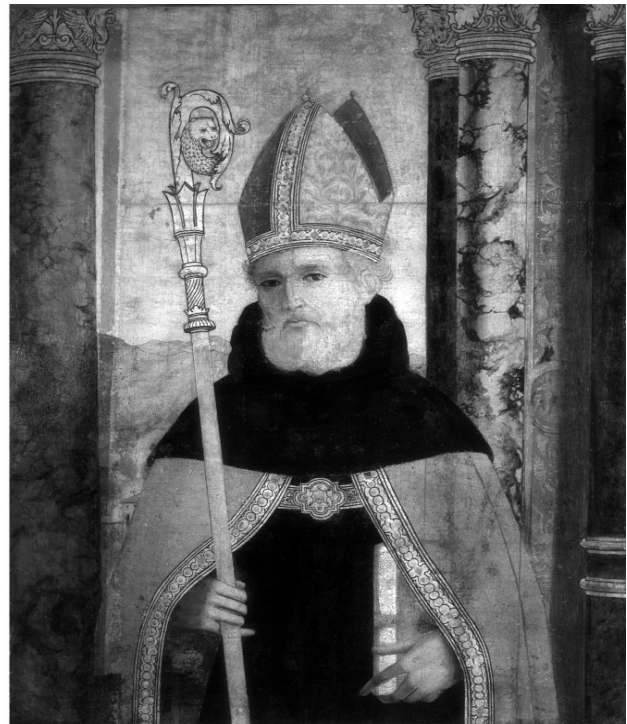

Fig. 23: Unkown?/ Lazzaro Bastiani? Saint Augustine, as a bishop; oil on wood; 84,5 x 64,5 cm; Venezia, Museo Correr (Verona, Laniac / Venezia, Museo Correr). Left: detail (Right: IRR image, 2700mn).

5. Conclusions: an open ending

It would be naïve to think that the summary presentation of these case studies could be exhaustive and complete. If the critical debate regarding copies and fakes is in fact full of ideas and proposals,[52] the point of view offered here is basically represented by the direct experience in the field of diagnostics. The awareness is that, as the shrewd reader will already have noticed, it is not always possible to group the various examples into categories and types because the dialogue between the different expressions of copies and fakes is subtle and continuous. On

Fig. 24: Unknown?/Lazzaro Bastiani?; *Saint Augustine, as bishop*; oil on canvas; 84,5 x 64,5 cm; Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr) Left: detail of visible. Right: IRR image (2700nm).

the other hand, dealing with diagnostics, we are aware that not all art historians are willing to make use of the study of artistic techniques and science applied to cultural heritage. For example, the still existing resistance against technical analysis must be kept in mind. On the contrary, the experience of the twin university centers, active in Italy and in Spain, is the daily testimony of how to cultivate doubts by reconstructing the genesis of the works and always having as its objective the search for historical truth. A research that, starting from the collection of scientific data, becomes an opportunity to compare different professional's points of view and approaches, from art historians to restorers, diagnosticians, curators, etc. It is a *modus operandi* that goes beyond the ability of the *connoisseur* to open up to teamwork.

Endnotes

1. The present paper is the result of a sharing of observations and thoughts of the authors. A mere curriculum balance specifies that Paola Artoni owes the sections dedicated to the stylistic recreation and the reinventing of a style; Miquel Herrero-Cortell is the author of the section dedicated to the assembling of pastiche; Marta Raïch is responsible for the post production of the pictures; Paolo Bertelli carried out the study about the portraits of Baldassarre Castiglione; Anna Pedret focused on "perverse twin" while Valeria Cafà was adressed to the section of signs.

   This work takes part in the activities of the consolidated research group ACEM ("Arte y Cultura de Época Moderna"), supported with funds of the Generalitat de Catalunya [2014SGR242]. It also takes part in the activities of research of the FPU program [FPU2014/01768], supported with funds of the Ministerio de Educación, Cultura y Deporte, of the Spanish Government.

2. Mauro Matteini/Arcangelo Moles, *Scienza e restauro. Metodi di indagine*, Firenze 1984 (2003); Mauro Matteini/Arcangelo Moles, *La chimica nel restauro. I materiali nell'arte pittorica*, Firenze 1989 (2010); Cristina Giannini/Roberta Roani, *Dizionario del restauro e della diagnostica*, Firenze 2000 (2003); Gianluca Poldi/Giovanni Carlo Federico Villa, *Dalla conservazione alla storia dell'arte. Riflettografia e analisi non invasive per lo studio dei dipinti*, Pisa 2006; *Archeometria e restauro. L'innovazione tecnologica*, ed. Salvatore Siano, Firenze 2012.

3. There are many research projects with an aim or scope of developing systems or devices which not only provide useful data for art diagnosis but also economical solutions. A great example is the work of Cultural Heritage Open Source (CHSOS): https://chsopensource.org/.

4. Art history as a discipline has in some point neglected the question of fakes and forgeries. Even the subject of copies has been, until the recent days, a quite disregarded topic, a matter of minor interest. This has also, fortunately, started to change, since copies are in fact responsible for the main transmissions in the art field.

5. Stuart J. Fleming, *Authenticity in Art. The Scientific Detection of Forgery*, London/Bristol 1975; *Scientific Investigation of Copies, Fakes and Forgeries*, ed. Paul Craddok, Abingdon-on-Thames 2009.

6. Cesare Brandi, *Teoria del restauro*, Torino 1963 (2000), p. 65-69.

7. Miquel Herrero-Cortell, *Del sacar de otras pinturas. Consideración de las copias pictóricas a la luz de los tratados y otros textos del Renacimiento: reputación teórica versus repercusión práctica*, in: *Revista de Humanidades*, no. 35, 2018 (in press).

8. Raffaello, *Ritratto di Baldassarre Castiglione*, 1514–1515, oil on canvas, 82×67 cm, Paris, Musée du Louvre, inv. 611.

9. The portrait was taken to Mantua by Castiglione himself. After his death, it was inherited by his son Camillo who offered it several times without success to the Duke of Urbino, Francesco Maria Della

Rovere. Probably between 1616 and 1635 the painting was bought by the Dutch merchant Lucas van Uffelen who until 1632 was living in Venice and then went back to Antwerp. In 1639, after the merchant's death, his collection of paintings was sold. The portrait was then acquired by the Jewish merchant of Portuguese origins Alfonso Lopez, advisor of the King of Spain in Amsterdam. It was in this circumstance that the painting was seen and copied by Rembrandt (whereas just before it was engraved by Reinier van Persijn on a drawing by Joachim von Sandrart, who unsuccessfully tried to win the painting). Subsequently (in 1604) the canvas followed his owner in his transfer to Paris until his death when it was bought by Cardinal Mazzarino. In 1661, the cardinal died and his collection was divided among the family members. Finally the portrait of Baldassare Castiglione returned to the *Achat Colbert*, the purchase of works of "valuable value" made by Jean-Baptiste Colbert for Louis XIV.

10. Stefano Onofri, *In viaggio con il Cortegiano. La fortuna europea del Baldassarre Castiglione di Raffaello*, Mantova 2010.

11. Peter Paul Rubens, *Ritratto di Baldassarre Castiglione*, 1630, oil on canvas, 90,2×67,5 cm, London, The Courtauld Institute of Art, inv. P.1978.PG.373.

12. Rembrandt, *Ritratto di Baldassarre Castiglione*, 1639, pen sketch, ink on paper, 163×207 mm, Vienna, Albertina, Inv. 8859. On the paper is written: "*de Conten batasar de kastijlijone van raefael – verkoft voor 3500 gulden – het geheel caergesoen tot Luke van Nuffelen heeft gegolden f 59456:- Ao 1639*" ("Count Baldassarre Castiglione da Raffaello, sold for 3,500 florins. The entire sale yielded 59,456 florins to Lucas van Uffelen".)

13. Fototeca Zeri, reference 30876, unknown, *Ritratto di Baldassarre Castiglione*, 16th–17th centuries, oil on canvas, 82×67 cm, Roma, Galleria Spada.

14. Mantuan painter (?), *Portrait of Baldassare Castiglione*, 16th–17th centuries(?), oil on canvas, Mantua, Palazzo d'Arco (probably reported in an inventory of Palazzo Chieppio in 1623), in: Rodolfo Signorini, *La dimora dei conti d'Arco in Mantua*, Mantova 2000, p. 144.

15. Mantuan painter (?), *Portrait of Baldassare Castiglione*, 18th–19th centuries, oil on canvas, 56×47 cm, Mantova, Biblioteca Teresiana (Serie Volta). Chiara Pisani, *Le raccolte artistiche della biblioteca*, in: *La Biblioteca Comunale Teresiana fra storia e futuro*, ed. Cesare Guerra, Mantova 2014, p. 173-191:185.

16. Carla Mazzotti, *Giuseppe Turchi. Un pittore, una marchesa, un carteggio*, Rimini 2010.

17. Eugène Delacroix, *Study of the Portrait of Baldassarre Castiglione*, pencil on paper, Paris, Louvre.

18. Edgar Degas, *Study of the Portrait of Baldassarre Castiglione*, pencil on paper, Paris, Bibliothèque Nationale de France.

19. Henri Matisse, *Portrait of Baldassarre Castiglione*, 1895–1900 or 1904, oil on canvas, Bagnols-sur-Cèze, Musée Albert-André. Cf.: Roger Benjamin, *Une copie par Matisse du Balthazar Castiglione (Bagnols-sur-Cèze) du Raphael*, in: *Revue du Louvre et des Musées de France*, vol. 35, no. 4, 1985, p. 275-277.

20. Maurice Denis, *Ritratto di Baldassarre Castiglione*, 1900 ca., oil on cardboard, 23×18,5 cm, Paris, private collection. Cf.: Jean-Pierre Cuzin/Marie-Anne Dupuy, no. 201, in: *Copier Créer. De Turner à Picasso. 300 oeuvres inspirées par les maîtres du Louvre*, ed. Jean-Pierre Cuzin, Musée du Louvre Paris, 26 April – 26 July 1993, Paris 1993, p. 299.

21. Mercier & Cie, *Entière collection de Monsieur X. Collection Haute Epoque Monsieur H. Collection de 5 oeuvres d'Eugène Boudin de Madame P chez Mercier & Cie*, Lille, 8/10/2017, lot 297. D'après Raphael [Walery Płauszewski], *Portrait di Baldassarre Castiglione*, 1874, oil on canvas, 73 × 60 cm. Ducal Palace, Mantua. Signed lower right: "Waléry P. 1874". Thanks to the director Peter Assmann and the vice-director Renata Casarin for having accepted the suggestion to buy the painting and thanks to Marcello and Massimo Mossini of the Galleria Mossini who helped the museum in the purchase.

22. French painter, *Portrait of Baldassarre Castiglione*, late 19th century, oil on canvas, 81 × 64,7 cm, Mantua, private collection. Cf.: Paolo Bertelli, *Ritornano a Grazie tre dipinti restaurati e ora si pensa alla pala dell'Assunta. Esposto un ritratto di Baldesar Castiglione*, in: *La Voce di Mantova*, 28 April 2017, p. 15. The painting was exhibited Thursday, April 27, 2017 in the sanctuary of the Beata Vergine delle Grazie in front of the mausoleum of Baldassarre Castiglione during a conference. The artwork was restaured in France in 1978. On the upper cross-piece of the frame appears a label with pen writing: "cartonnage | retoilage | netoyage | repeints | vernissage | Avril 1978".

23. This happens when the upper paint layers pull away in a pattern similar to the look of an alligator's hide when the drying process is compromised. The layer below, that has dried more slowly, is visible and the upper layer has a raised appearance. They are also known as "drying cracks", and often are produced by using too much turpentine diluted with the paint or more frequently when a strong drying agent is added to the paint to speed up the drying. This is very characteristic of a 19th century painting.

24. http://www.museuart.com/.

25. http://centrederestauracio.gencat.cat/en/inici/index.html.

26. The whole story can be followed in articles in digital newspapers:
   http://www.elpuntavui.cat/cultura/article/19-cultura/1011923-tres-pintures-renaixentistes-sota-sospita.html, 12-10-2016.

http://www.elpuntavui.cat/cultura/article/19-cultura/1015030-les-tres-taules-renaixentistes-del-pintor-pere-mates-del-museu-d-art-de-girona-son-falses.html, 21-10-2016.

http://www.elpuntavui.cat/cultura/article/19-cultura/1014728-sis-taules-al-sac.html, 21-10-2016.

27. On this topic is very useful the old but accurate essay of Max J. Friedländer, *On Forgeries*, in: *The Expert versus the Object. Judging Fakes and False Attributions in the Visual Arts*, ed. Ronald D. Spencer, Oxford 2004, p. 40-46.

28. Inv. number :015788-000. More information about this piece on:
http://www.museunacional.cat/en/colleccio/altar-frontal-mosoll/anonim-catalunya-taller-de-la-seu-durgell-del-1200/015788-000

29. Ximo Company/Marc Ballester, *Anónimo. Virgen del Libro* (Informe técnico inédito, Centre d'Art d'Època Moderna, Universitat de Lleida), Lleida 2013.

30. Inventory number 443. Tempera on panel, 58 x 39,5.

31. Ministerio de Cultura (Ed.), *La pintura europea sobre tabla. Siglos XV, XVI y XVII*, Madrid 2010.

32. This characteristic was really already strange, especially considering the little size of the picture (30 x 23 cm, approx).

33. Canvas was not the most common support at the end of the 15th century and at the beginning of 16th, even less considering the size of the artwork, nevertheless it was very popular.

34. It should be blue and the greenish tone was neither an alteration of any blue pigment nor was it an alteration of many aged varnish layers.

35. Giovanni Mariacher, *Il Museo Correr di Venezia, dipinti dal XIV al XVI secolo*, Venezia 1957, p. 126-127.

36. Giovanni Mariacher, *Il Museo Correr di Venezia, dipinti dal XIV al XVI secolo*, Venezia 1957, p. 126-127.

37. This is a very common characteristic of many forgeries. Imposed pathologies seem to be very selective, affecting only parts without much relevance.

38. https://commons.wikimedia.org/wiki/File:Bernardo_Parentino_-_San_Sebastiano_-_Royal_Collection,_Hampton_Court,_London.jpg.

39. https://commons.wikimedia.org/wiki/File:Bernardo_Parentino_-_Tentazioni_di_Sant%27Antonio_-_Galleria_Doria_Pamphilj,_Roma.jpg.

40. Antonino Cosentino, *Identification of Pigments by Multispectral Imaging. A Flowchart Method*, in: *Heritage Science*, vol. 2, no. 1, 2014, p. 1-12.

41. Hermann Kühn, *Zinc White*, in: *Artists' Pigments. A Handbook of Their History and Characteristics,* Vol. 1, ed. Robert L. Feller, London 1986, p. 169-186.

42. Hermann Kühn/Mary Curran, *Chrome Yellow and other Chromate Pigments*, in: *Artists' Pigments. A Handbook of Their History and Characteristics,* Vol. 1, ed. Robert L. Feller, London 1986, p. 187-204, p. 188-190.

43. Gianni Mazzoni, *L'Italie, "une fabrique d'objets anciens"*, in: *Primitifs italiens*, Palais Fesch – Musée des Beaux-Arts Ajaccio, 29 Juin-1 October 2012, p. 261-263.

44. https://www.museodelprado.es/coleccion/obra-de-arte/san-pedro-y-san-pablo/7ff4a40c-021e-431a-a72e-b27655079222?searchid=0051682d-71e3-1f05-db8f-82faab92d6a0.

45. Otto Kurz, *Falsi e falsari*, ed. Licia Ragghianti Collobi, Vicenza 1961 (1996), p. 80-81.

46. Inv. Cl 1 n. 946.

47. Inv. Cl 1 n. 642. *Guida del Museo Civico e raccolta Correr di Venezia*, Venezia 1885, p. 100, n. 12.

48. Cf. Massimo Ferretti, *Falsi e tradizione artistica*, in: *Storia dell'arte italiana*, III, 3, ed. Federico Zeri, Torino 1981, p. 113-195 and Massimo Ferretti, *Il contributo dei falsari alla storia dell'arte*, Pisa 2009, p. 189-226.

49. *Sembrare e non essere. I falsi nell'arte e nella civiltà*, ed. Mark Jones/Mario Spagnol, with Paul Craddock/Nicolas Barker/Andrea Bacchi, Milano 1993; Mauro Natale, *I falsi e la storia dell'arte*, in: *Il falso specchio della realtà*, ed. Anna Ottani Cavina/Mauro Natale, Torino 2017, p. 49-87.

50. Cl 1 n. 217. *Guida del Museo Civico e raccolta Correr di Venezia*, Venezia 1885, p. 72, n. 7; Giovanni Mariacher, *Il Museo Correr di Venezia, dipinti dal XIV al XVI secolo*, Venezia 1957, p. 180-181.

51. Raimond Van Marle, *The Development of Italian Schools of Painting,* vol. XVII, Berlin 1935, p. 126-127.

52. Cf. Ferretti 1981, *Falsi e tradizione artistica*, p. 113-195; Ferretti 2009, *Il contributo dei falsari*, p. 189-226 and the *excursus* in Natale 2017, *I falsi e la storia dell'arte*, p. 49-87.

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Figures

Fig. 1: Walery Płauszewski, after Raffaello; *Copy of the Portrait of Baltassarre Castiglione*; 1874; oil on canvas; 73 × 60 cm; Mantua, Museum Complex Palazzo Ducale di Mantova. (Verona, Laniac, Università di Verona / Complesso museale Palazzo Ducale di Mantova). Left: visible image. Right: IRR images (2700nm).

Fig. 2: French painter, after Raffaello; *Copy of the Portrait of Baldassarre Castiglione*; late 19th century; oil on canvas; 81 × 64,7 cm; Mantua, Private Collection. (Verona, Laniac, Università di Verona. Left: visible image. Right: IRR image (2700nm).

Fig. 3: Unknown; *Copy of a fragment of the Altar Frontal of Santa Maria de Mossoll*; 20th century; mixed technique on panel; Catalonia, Private Collection.

(Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida)

Fig. 4: Unknown; *Copy of a fragment of the Altar Frontal of Santa Maria de Mosoll*; 20th century; mixed technique on panel; Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida). UVF photograph (365nm).

Fig. 5: Several macro details of the *Copy of a fragment of the Altar Frontal of Santa Maria de Mossoll.* (Lleida,Centre d'Art d'Època Moderna, Universitat de LLeida). (a) Rusty modern nail. (a) Red mark that should be done with a madder lake and not with a pigment. (c) Scratched surface under a lac-dye yellowed varnish. (d): The yellowed lac-dye varnish, crackled and flaked off.

Fig. 6: Unknown, after Sandro Botticelli; *Copy of Madonna del libro;* 20th century; oil on panel; 42,5 x 32,5 cm; Aragón, Private Collection (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).

Fig. 7: Unknown, after Sandro Botticelli; *Copy of Madonna del libro;* 20th century; oil on panel; 42,5 x 32,5 cm; Aragón, Private Collection (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).Left: visible detail of the main figure. Cracks are noticeable. Right: IR image of the same part reveals the presence of a charcoal tracing paper (1100nm).

Fig. 8: Unknown, after Domenico Ghirlandaio; *Copy of the figure of Giovanna Tornabuoni;* 20th century; oil on panel?; 40 x 35 cm; Private Collection (Verona, Laniac, Università di Verona). Left: visible image. Right: UVF image (365nm).

Fig. 9: Unknown, after Domenico Ghirlandaio; *Copy of the figure of Giovanna Tornabuoni;* 20th century; oil on panel?; 40 x 35 cm; Private Collection. (Verona, Laniac, Università di Verona). Detail of the IRR image (2700nm).

Fig. 10: Unknown, after Lorenzo di Credi; *Virgin Adoring*; 20th century; oil on canvas; 29 x 23 cm; Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).

Fig. 11: Unknown, after Lorenzo di Credi; *Virgin Adoring*; 20th century; oil on canvas; 29 x 23 cm; Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida). Left: Visible image. Middle: IR image (1100nm). Right: UVF image (365nm).

Fig. 12: Unknown, after Lorenzo di Credi; *Virgin Adoring*; 20th century; oil on canvas; 29 x 23 cm; Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida). Infrared transmitted IRT showed the pencil lines used in a freehand delineation (1100nm).

Fig. 13: Unknown, imitating Bernardino Parentino; *Hercules retrieving Alcestis from the Underworld*; 19th century; mixed technique on panel; 49 x 72 cm. Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr). Above: Visible image. Down: UVF image (365nm).

Fig. 14: Unknown, imitating Bernardino Parentino; *Hercules retrieving Alcestis from the Underworld*; 19th century; mixed technique on panel; 49 x 72 cm. Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr). IRR detail (2700nm).

Fig. 15: Unknown, imitating Bernardino Parentino and others styles?; *Battle between Centaurs and Lapiths*; 19th century; mixed technique on panel; 50 x 72 cm. Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr). Above: Visible image. Down: UVF image (365nm). Notice the diverse fluorescence of white colours.

Fig. 16: Unknown, after Bernardino Parentino and others?; *Battle between Centaurs and Lapiths*; 19th century; mixed technique on panel; 50 x 72 cm. Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr) Detail of the visible image.

Fig. 17: Unknown, imitating El Greco; *Apostle*; 19th century; oil on canvas; 52,5 x 42 cm. Catalonia, Private Collection (Lleida, Centre d'Art d'Època Moderna, Universitat de Lleida).

Fig. 18: Unknown, imitating El Greco; *Apostle*; 19th century; oil on canvas; 52,5 x 42 cm. Catalonia, Private Collection. (Lleida, Centre d'Art d'Època Moderna, Universitat de LLeida) Left: UVF image (365 nm). Right: X-Ray image. Notice the differences in the application of the white masses.

Fig. 19: Detail of feigned cracks, painted over the canvas. (Lleida, Centre d'Art d'Època Moderna, Universitat de LLeida).

Fig. 20: Unknown; *Noblemen in a landscape*; 19th century; oil on wood; 140 x 85cm; Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr) Detail of the IRR image (2700nm).

Fig. 21: Unknown; *Youngsters and ancient*; 19th century; oil on wood; 84,5 x 64,5 cm; Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr) Detail of the IRR image (2700nm).

Fig. 22: Details of two apocryphal attributions depicted over forgeries. (Verona, Laniac, Università di Verona / Venezia Museo Correr)

Fig. 23: Unknown? / Lazzaro Bastiani?; *Saint Augustine, as bishop*; oil on wood; 84,5 x 64,5cm; Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr) Left: detail of visible. Right: IRR image (2700nm).

Fig. 24: Unknown? / Lazzaro Bastiani?; *Saint Augustine, as bishop*; oil on wood; 84,5 x 64,5 cm; Venezia, Museo Correr. (Verona, Laniac, Università di Verona / Venezia Museo Correr). Detail of the signature.

Summary

The LANIAC (Laboratorio di analisi non invasive su opere d'arte antica, moderna e contemporanea) of the University of Verona (Italy) and the CAEM (Centre d'Art d'Època Moderna) of the University of Lleida (Spain), two university twin centres, share their working methodologies on copies, forgeries and fakes using different diagnostic methods. The present paper delves with the universes of copies, fakes and forgeries. Concepts and practices like motifs reusing, pastiches confection and stylistic recreations are dealt here by displaying different cases of study examined by both centres. Through the technical imaging and the artistic diagnosis some conclusions on the proper identification of each object are drawn, in order to understand such artworks in the time and space axis and in their whole materiality and sense.

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