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“Grisaille reconstitution” as a colourless visible retouching method: the case of *Les Puits d’Amiens*, a set of paintings dating from the 16th century

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Abstract: An innovative visible retouching method was successfully attempted on a set of seven paintings, the *Puits d’Amiens*, amongst which three of them presented large losses. The challenge was to find a retouching solution that would enable presenting all seven paintings together, improve understanding of the damaged paintings while maintaining discernibility of the retouching. After several digital simulations, the most promising ones were attempted on the loss of the Puy 1518. Based on archives, the agreed solution was baptised “grisaille reconstitution” and consists in reconstituting figures, outlines and values of the original painting whilst purposely omitting multi-colour restitution. This method has been carried out onto the three damaged paintings.

Keywords: grisaille, reconstruction, discernible retouching

La “reconstitución de *grisalla*” como método de retoque visible incoloro: el caso de *Les Puits d’Amiens*, un conjunto de pinturas del siglo XVI

Resumen: Un método innovador de reintegración discernible se probó con éxito en un conjunto de siete pinturas, los *Puits d’Amiens*. Tres de las siete pinturas tenían grandes lagunas. El desafío fue encontrar una solución de reintegración que nos permitiera presentar las siete pinturas juntas, mejorar la comprensión de las pinturas dañadas y, al mismo tiempo, mantener la discernibilidad de la reintegración. Después de varias simulaciones digitales, las más prometedoras se probaron en las lagunas de Puy 1518. En base a los archivos, la solución acordada se denominó “reconstitución *grisaille*” y consiste en reconstruir figuras, contornos y valores de la pintura original, omitiendo de propósito la restitución de Colores. Este método se llevó a cabo en las tres pinturas dañadas.

Palabras clave: *grisaille*, reconstrucción, reintegración discernible

“Reconstituição em *Grisaille*” como método de reintegração visível incolor: o caso de *Les Puits d’Amiens*, um conjunto de pinturas do século XVI

Resumo: Um método inovador de reintegração discernível foi testado com sucesso num conjunto de sete pinturas, as *Puits d’Amiens*. Três das sete pinturas apresentavam grandes lacunas. O desafio foi encontrar uma solução de reintegração que permitisse apresentar todas as sete pinturas juntas, melhorar o entendimento das pinturas danificadas e, ao mesmo tempo, manter a discernibilidade da reintegração. Após várias simulações digitais, as mais promissoras foram testadas nas lacunas da *Puy 1518*. Com base em arquivos, a solução acordada foi batizada de “reconstituição *grisaille*” e consiste em reconstituir figuras, contornos e valores da pintura original, enquanto omite proposadamente a restituição das cores. Este método foi realizado nas três pinturas danificadas.

Palavras-chave: *grisaille*, reconstrução, reintegração discernível

Introduction

Retouching large losses of ancient easel paintings is a major and re-occurring issue in conservation, with few obvious solutions. From an ethical standpoint, conservators are required to distinguish their retouching from the original art-work. However in situations where the understanding and aesthetic contents of a painting is severely damaged, conservators are sometimes forced to choose between archeological treatment and a more interventionist retouching.

This issue occurred during the conservation of the so-called "les Puys d'Amiens", a set of seven paintings kept in Picardie museum in Amiens, amongst which three of them presented large losses. From 2017 to 2019, the restoration was assigned to a team of freelance conservators composed of five specialists in paint layer treatment (Séverine Françoise, Laurence Mugniot, Frédéric Pellas, Laetitia Desvois, Laurence Didier), two specialists in wood panels treatment (Jonathan Graindorge Lamour, Juliette Mertens) and a sculpture and frame conservator (Anaïs Gailhbaud). This project was conducted under the supervision of an advisory committee composed of expert curators (Laure Dalon, curator and director of the Picardie museum; François Seguin, curator at the Picardie museum; Isabelle Pallot-Frossard, senior curator and director of C2RMF; Cécile Scaillierez, senior Curator, Department of Paintings, Louvre Museum in Paris; Matthieu Deldicque, curator, Condé Museum in Chantilly, France; Fabienne Audebrandt, curator, CAO, DRAC Eure-et-Loir), and in association with the Restoration & Research Centre for French Museums C2RMF in Paris (Lorraine Mailho, senior curator, head of the conservation department; Matthieu Gilles, senior curator, head of the painting department; Dominique Martos-Levif, scientific conservator, in charge of paintings studio).

Historical background of the paintings

From the early fifteenth century up to the end of the seventeenth century, a literary guild in Amiens (regional city located in the northern part of France) organised a poetry contest every year at Candlemas dedicated to the Virgin Mary. As a tradition, the first sentence of the awarded poem (*palinod*) was then illustrated with a painting or a sculpture, which was offered to the cathedral of Amiens at Christmas time (Scaillierez 2017; Giusiano 2014). The collection was painted by multiple artists, those dating from the sixteenth century remain anonymous to this day. Many of these "Puys d'Amiens" have been lost, but approximately forty works of art have survived and are kept in France either at the Picardie Museum or at the cathedral of Amiens.

Seven of these oil paintings painted on oak panels have been recently restored by the authors and are now displayed at the Picardie Museum in Amiens. Even though these seven "Puys" dating 1499, 1518, 1519, 1520, 1521, 1525 and 1548 were painted by different artists, they were treated together

as a set. Today, all the panels are not in the same condition due to their individual conservation history.

Five of these Puys paintings (dating 1499, 1518, 1519, 1520 and 1521) were transferred onto new supports at a date believed to be 1905 by the liner Mr Bridon. The chosen support was composed of oak panels with a gauze interface and a cradle on the reverse. In addition, two of these Puys were transferred from their support structure a second time: "Puy 1519" was transferred onto a slatted wooden board, with a textile and gauze interface in 1971 by the liner Mr Rostain. "Puy 1521" was transferred onto a cardboard interface maybe in 1952, at the time of the last treatment concerning the paint layer (cleaning and retouching) by Moras. Finally, the last two Puys dating 1525 and 1548 were found on their original oak panel, uncut and with their original size.

The oldest Puy dating from 1499 had the most complex history of them all: it was cut, partially trimmed and separated into fragments. The main fragment had been kept in Amiens and was transferred in 1905 by Mr Bridon like the other Puys. The other pieces disappeared except for a small fragment that was discovered in an auction sale in Caen in 2017 and subsequently bought by the Picardie museum. Fortunately, this newly found fragment had kept its original panel. The relative position of the two fragments was established thanks to a copied version painted later on vellum in 1517 (illumination by Jean Pichore, from a manuscript commissioned by Louise de Savoie) (Pichore 1517).

Five of the paintings conserved their original frames, this was very influential in the overall aesthetical approach to the treatment. Each painting measures about two meters high, together with the slender gothic structure of the frames, ornated with many sculptures, they can be as high as four meters. Originally painted and gilded, but unfortunately stripped at an unknown time, they contribute to the magnificence of objects gifted to the Virgin Mary.

Objectives and challenges of the treatment

The different supports have resulted in a wide range of conditions between the seven Puys: four of them were in good condition but three paintings presented very large losses after removal of repaints dating from the middle of the twentieth century, which significantly impacted the understanding of these three paintings:

- the most virtuoso and extravagant painting of the set, Puy 1518, was in perfect condition at the top but showed large losses at the bottom part of the painting,
- the oldest and biggest fragment of Puy 1499 had numerous losses especially on the faces of historical known and unknown characters,
- and finally one third of the total painted surface area of Puy 1521 was missing [Figure 1]

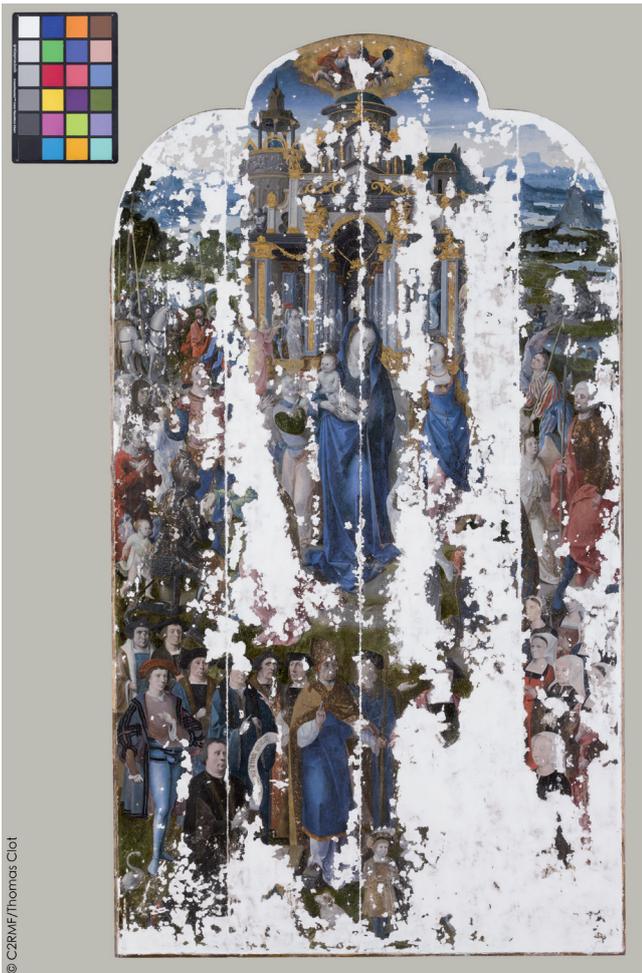


Figure 1.- Overview of the Puy dating from 1521. Picture before retouching taken in March 2018. ©C2RMF/Thomas Clot 13530

Areas of lost paint could already be observed on pictures published in 1903 (Durand 1903). As such, the losses were not the consequence of their transfer in 1905 but were most probably the result of the dimensional variations of the wood of the original panels.

The ultimate goals of this latest retouching intervention were to:

Firstly, re-establish consistency in the heterogeneous set, in order to present them all together in harmony, together with their very ornate original frames extant for five of them.

Secondly, improve the understanding of the damaged paintings, by resetting the typical composition of a Puy staged in three horizontal levels. Before retouching, losses of the most damaged painting (Puy 1521) enforced a vertical reading of the painted composition. This artificial verticality tended to be confused with the slender structure of the frame.

Thirdly, integrate any available information from archives.

Fourthly, maintain «discernibility» and «visibility» of the retouching in large losses

Archaeological presentation or reconstruction based on archival documents

Numerous options were discussed regarding the intervention on large losses following an archaeological type treatment: either leaving empty gaps (raw wood of the panel, neutral tone), or alternatively reconstructing the composition with usual retouching techniques (lower tone, pointillism or *tratteggio*).

Recovering the raw wood of the panel was in this case impossible: original oak panels disappeared during the transfer intervention around 1905. Paint layers were adhered to a layer of gauze or cardboard, glued to new heterogeneous wood panels.

Applying a neutral tone on large losses was envisaged, but this option was rejected as it would have emphasised the disparity of the condition between the paintings. Moreover, the existence of original slender and very ornate frames made an archaeological presentation very abrupt, and almost absurd. Therefore, it was agreed that reconstruction of the losses with a visible retouching technique would provide better aesthetic results.

The discovery of pertinent archives related to the paintings made the reconstruction option even more attractive. François Seguin, the Picardie Museum curator, found a document relating to the most damaged painting (Puy 1521): a sketch dated around 1830 drawn by the Duthoit brothers [Figure 2]. Whilst not as detailed as the original painting it gave a clear understanding of its general composition and structure. In particular, at the biggest loss at the bottom right-hand corner, a couple and a female donor on her knees with hands clasped in prayer in front of a prie-dieu without tablecloth was found on the sketch. As this is significantly different from the last retouching work dated 1952 [Figure 3], it is believed that previous conservators were unaware of this document. Although this sketch is precious, it also had some limitations as some areas remained blurred, like the dress of the lady behind the female donor. The conclusion was that the painting already has a number of losses at the time the sketch was drawn in the 19th century. To a lesser extent, the photography published in 1903 was also useful due to a number of missing details found in the background of the painting. In particular, knights on a battlefield scene in the right top hand corner and a face lost behind the female donor were found. Altogether, these additional details combined with the other Puys paintings and other paintings from the same period and geographical area were sufficient documentation to enable all the missing figures to be plausibly reconstructed in as much detail as the original painting. Based on archives and literature, reconstruction of the composition could be proposed, but the challenge was to maintain visibility of the retouching.

Previous retouching dating from 1952 already showed a desire for non-mimetic reconstruction [Figure 3]. On Puy

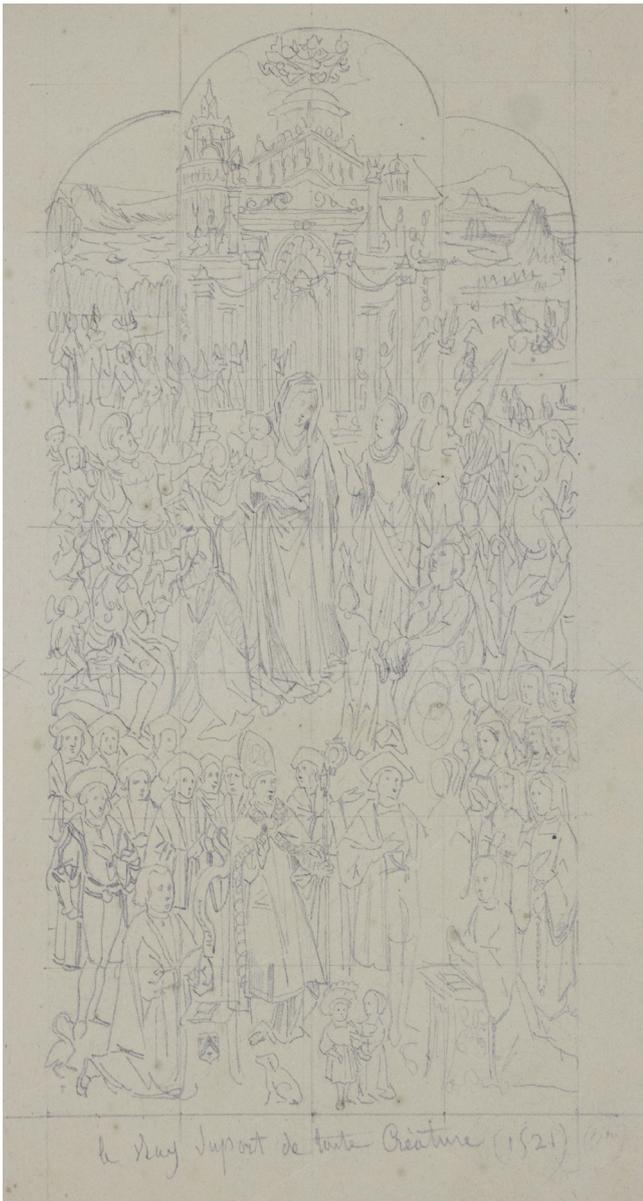


Figure 2.- Sketch of the Puy 1521 dated around 1830 drawn by Aimé and Louis Duthoit (1803 – 1869) (1807 – 1874), inv. : M.P.Duthoit-alb-4-fo60, kept in Picardie Museum, Amiens, France. ©Picardie Museum.

1521, faces without features were introduced and details are missing like a female donor with no clasped hands, a feature of most donor representations in the other Puy paintings. However for the large losses, colours similar to the original painting were applied, so the retouchings were not easily noticeable at first glance. On the biggest fragment of Puy 1499, which was also restored in the 1950s, the figures were not defined, and coloured masses were blurred at their edges. As a result, the retouched composition was hardly understandable to viewers.

Nowadays, the most used visible retouching techniques are pointillism and *tratteggio*. They were both considered but both rejected as they were judged aesthetically unsuitable for such detailed paintings. Indeed, the dots or fine lines which are the basis of these techniques would



Figure 3.- Details of the retouching dating from 1952 at the bottom right-hand corner on the Puy 1521. Picture before cleaning taken in 2017. ©C2RMF/Laurence Clivet 248

have needed to be so minute in order to retouch these very detailed compositions that they would have become indistinguishable from the original paint. The result would have been too close to a mimetic retouching and would have introduced confusion between the original paint and reconstituted areas for the viewer.

Digital simulations and retouching tests on one painting

In order to find the most appropriate technical solution, digital simulations on Photoshop® were initially carried out, and the most promising ones were attempted on the Puy 1518 painting [Figure 4].

The first test was a reconstitution in lighter tone. Although positive on digital simulation, it was disappointing and aesthetically insufficient when attempted on the painting. The balance of the composition depends not only on drawing and colours, it also comes from tonal values over the whole surface. In our case, retouching large losses



Figure 4.- Retouching tests attempted on a large loss of the Puy 1518: at the left, reconstruction with the grisaille method; at the right, reconstitution in lighter tone. ©Séverine Françoise

with lighter toned colours would have drawn attention by unbalancing the overall composition through lack of contrast provided by the dark tones.

Instead, a visible reconstitution method using monochrome tones allowing indication of contrasted values was required. This monochrome treatment approach was inspired from the conservation treatment of the murals of the Ovetari chapel painted by Mantegna in Padua, Italy, which had been severely damaged during World War II (Nicolo Salmazo and al 2006). In that case, fragments were placed on top of black and white photographs taken before the collapse. Although this solution appeared suitable, the right monochrome colour still had to be found. Black and white photographic tone was quickly rejected as it would have appeared anachronical and inappropriate. Sepia tone was digitally tested and looked promising but it was concluded that it had to be adapted to obtain a better result by reducing its red component. In the end, a slightly colder sepia tone baptised "grisaille" was chosen and attempted on the paintings. Inspiration for this tone came from paintings located on reverse wings of triptychs from the same period, which often use this scale of earth brown shades. The retouching test was composed of ivory black, raw and burnt umbers. Gamblin Colors® were used in order to maintain transparency of the retouching and luminosity of white gap fillings (chalk and animal glue). No other materials were tested because Gamblin Colors® rendering was judged appropriate.

The test carried out using this grisaille tone gave far better results as it allowed contrast to be reproduced similar to that in the original painting. Indeed, this grisaille reconstruction seemed to avoid the eye being immediately drawn to the treated areas, it also avoided confusion between the areas of original paint and the reconstituted areas, and finally it was found aesthetically very pleasant. In the end, this technique was approved and implemented for the reconstruction of lost figurative parts on the Puys paintings.

Implementation of the retained solution

First of all, mimetic retouching was applied on small and medium losses where subjective interpretation to restore continuity between the remaining pieces of the original painting was unnecessary. The grisaille method was not suitable for this type of loss because it would have made discordant spots inside areas of original paint which would have been confusing.

Once these losses were complete, the grisaille method was used to retouch the large losses of Puys dating 1499, 1518 and 1521 where we needed to reconstruct composition, figures or faces. Advantage was taken of archives such as sketches, illuminations, old pictures or corpus of similar works. The grisaille scale method consists of reconstructing figures, outlines and values of the original painting whilst purposely omitting multi-colour restitution.

Some examples of the implementation of the grisaille technique:

- The retouching of Puy dating 1499, digital simulation with Photoshop® was made inspired by other paintings of the same period and geographic area. For instance, the portrait of Louis XII, king of France between 1498 and 1515, had been reconstructed [Figure 5] following the one painted by Jean Perréal in 1514 and kept in Winsor castle. Firstly carried out on computer and then on the painting with the grisaille scale method. On the faces of historical unknown characters, features were proposed and are visible thanks to this retouching method.

- Large losses on the Puy dating 1518 are located in the lower part of the painting. In the absence of historical documents, reconstruction was made by the freehand drawing of missing figures through



Figure 5.- Reconstruction of the portrait of Louis XII with the grisaille method on a loss of the Puy 1499, based on the painting by Jean Perréal in 1514 kept in Winsor Castle. ©Frédéric Pellias

the extension of the outlines present on the original fragments scattered in the large losses. Fortunately, the missing features consisted of drapery and characters' feet. The virtuoso style of the drapery of this painting was studied and the feet positions of a child was inspired by the outlines of the previous retouching (1952) onto the same loss which happened to be the same.

-For the Puy dating 1521, one third of the total painted surface area was missing. Before cleaning, a 1:1 scale reproduction of the outlines of the last retouching were transferred onto transparent film, as a record in case of need. Ultimately, we did not use it because the composition proposed in 1952 was too simplified. Thanks to digital processing, the outlines of the sketch were transferred onto missing parts of the painting, this allowed the positioning of characters [Figure 6]. Details were inspired by other Puys and other paintings of the same area. Clasped hands and the drapery of the female donor were



Figure 6.- Digital mock-up where details of the sketch are inserted inside the losses at the bottom right-hand corner of the Puy 1521. ©picture Séverine Françoise; ©sketch Picardie Museum; ©mock-up Frédéric Pellas

taken from the ones of the female donor figure of the Puy 1518 and inverted in order to correspond. Blurred areas were reconstructed as plausibly as possible by researching the corpus of similar paintings (Jan de Beer, Van Orley, Grégoire Guérard, etc). The knights on the battlefield scene in the right top hand corner and the face lost behind the female donor found on the picture published in 1903 were also reconstructed in the grisaille scale.

Reconstruction with the grisaille method was modeled step by step, with a lighter tonal value than the original but we observed that it drew attention to the large losses. The dark tonal values were built up progressively in order to balance with the tonal values of the original composition. On completion, the focus of the viewer is drawn to the coloured areas of original painting, not to the grisaille method reconstruction of the large losses [Figure 7]. Gamblin Colors®, pigments ground in Laropal



Figure 7.- Details after treatment of the grisaille retouching method at the bottom right-hand corner of the Puy 1521. ©Séverine Françoise

A81® varnish whose reversibility properties are well known, diluted with isopropanol and diacetone alcohol (80-20), were used during all the work.

This experimental and discernible retouching technique provides a more unified vision of the composition of the individual painting, but also across the full set of Puys' with their original frames. Reconstruction of the Puys' typical composition, constructed in three horizontal levels, allows the integration of damaged paintings within a set which has remained in otherwise good condition, while maintaining the visibility of the retouching.

Related cases, limitations of the technique

According to research, no concrete examples of similar restoration methods were found, but two cases can be compared to the retained solution:

- the conservation in the 1990's of murals by Mantegna in the Ovetari Chapel in Padua, already mentioned.
- the restoration by Fernando Mardel and Abel de Moura, between 1949 and 1955, of Flemish paintings of the 15th and 16th centuries, belonging to the painting collection of the Sacred Art Museum of Funchal (MASF), in Madeira Island, in particular the treatment of missing parts of the *Triptych of the Incarnation* (Rodrigues Ferreira *et al.*, 2017). These painter-restorers adapted two techniques: a mimetic method for small losses and a differentiated technique on pieces replacing partially mutilated wings of the triptych. On a sepia background, they extended figures with a very detailed and graphical drawing by locally completing it with colours of the same tone as the original. Although the idea is close to ours, the treatment is graphical like an underdrawing with multi-coloured additions. It is not a monochrome like our grisaille treatment.

This technique has also some limitations. Firstly, it is necessary to carry out highly finished illusionistic retouching of the original painted fragments which have suffered from wear, when they are located next to grisaille areas. In order for the original painted fragments to coexist next to the grisaille retouched areas, a similar visual conservation condition of the two elements is necessary. The areas retouched with the grisaille technique are necessarily in good condition, so the fragments of original paint next to them need to appear in good condition too, in order not to introduce an imbalance. Secondly, a better result is obtained if the original area around the loss is a multi-coloured, the grisaille reconstitution will then be easily discernible. Thirdly, when the neighbouring original colours are the same as the grisaille tone, one must retouch the loss to a lower tone than the one in the painting, otherwise it creates confusion.



Figure 8.- Mock-up of the painting after treatment inside its original frame ©picture of the painting Séverine François; ©picture of the frame Picardie Museum; ©mock-up Frédéric Pellas

Conclusion

Out of the seven Puys d'Amiens paintings entrusted to the authors, three paintings presented large and very large

losses. But restoring the visibility of a damaged painting without misleading the viewer hard to achieve. The retouching carried out here answered the four objectives that were set to the authors. Firstly, consistency across the whole set in order to present them homogeneously all together, with their very ornate original frames was achieved. Secondly, the understanding of the damaged paintings was dramatically improved. Thirdly, the information available from reliable archives was used and integrated in the restoration.

Thanks to the archival information available at our disposal, the main objective of restoring the understanding of the three heavily damaged Puy paintings was achieved as was the secondary aim of maintaining the discernibility of the extensive amount of retouching carried out.

An experimental and innovative form of retouching baptized "Grisaille" was successfully attempted to answer the critical issue of visibility of retouching which is often encountered in some historical paintings. Indeed, the wider public is often unfamiliar with modern retouching techniques such as *tratteggio* or pointillism, which are implemented by conservators with very detailed precision. This usually result in making the difference between the original layers and the retouching very difficult to detect to the unsuspecting eye.

All seven paintings will be exposed from March 2020 in the Picardie Museum together with a graphical description explaining the "Grisaille" restoration technique. The authors and the Museum are all looking forward to the feedback from the general public which will determine the effectiveness of this technique with regards to the spectator.

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