

The panel painting "The Lamentation of Christ" from Norum church

Attribution hypotheses and scientific facts in comparison to Lucas Cranach the Elder



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ABSTRACT

This thesis takes the challenge to investigate a series of attribution hypotheses concerning a panel painting of unknown master, possessed by the Norum church in Stenungsund (Västra Götaland county) in Sweden. The painting depicts the well-known theme of religious character; *The Lamentation of Christ*, and it possesses Northern Renaissance painting qualities (16th-17th century). The painting has been informally linked with the name of the German Renaissance artist Lucas Cranach the Elder –among other schools and artists as well.

Attribution of historical objects can be a complicated and highly demanding process. This thesis does not try to attribute a historical object, but rather to evaluate the attribution myths lying around it. Through this process, clarification of certain elements can constitute the framework of future attribution examinations.

The study is based on an interdisciplinary method, combining art historical applications with the technical examination of the painting. The technical examination includes methods and tools employed by conservators, such as UV fluorescence, IR reflectography, X-rays radiation and microscopic analysis. Close inspection and application of advanced critical thinking are widely practised, and comparison studies with the oeuvre of Lucas Cranach the Elder and other great masters have been carried out throughout the whole thesis.

A holistic perspective is taken under consideration and thus the thesis's background philosophy is to examine the painting both in its tangible and intangible nature. However, the critical point lies on the interchange of the acquired knowledge through a creative process and the supervision of a student in art conservation.

Three chapters constitute the main body of the thesis; the provenance studies are followed by an art historical analysis, which in its turn is succeeded by the technical examination of the painting. More specifically, the results from the investigation of the known background of the painting, makes the basis for the thesis's outermost goals. Subsequently, substantial art historical applications evaluate the qualities of the painting, stress any possible non-matching or anachronistic elements found in it and put the painting in a wider art historical context. Finally, the concrete scientific examination provides the concluding results after they have been filtered through the theoretical basis of the art historical analysis.

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Polyxeni Papadopoulou, November 28th 2010

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1. Introduction

1.1 Background

Each individual work of art possesses its own history, starting from the moment of its perception. Then, after its creation, a work of art can change owners and change its external character and internal structure, depending on the different aesthetic qualities of the different eras, and the deteriorating effects of time, respectively. In the pass of time some works of art have a recognized identity while others remain unknown and they are being given the title of ‘‘Unknown master’’ or other such titles of uncertain origin.

A work of art belonging to this last category is the panel painting which decorates the south wall of the navel of Norum church in Stenungsund.¹ For practical reasons this painting is called ‘‘ the Norum painting’’ throughout the thesis. It is an unsigned painting depicting a version of the well known theme of *The Lamentation of Christ* and possessing 16th-17th century painting qualities. Nothing is known between the members of the church about this painting, except for the name of its donator to the church and two informal sources of information: a rumor that an art conservator during the 1990’s supported the idea that the painting can be an original work of Lucas Cranach the Elder (c.1472-1553) – the people of the church merely support the same possibility, and an hypothesis that the painting can be a work from the Cologne school.

As the author of this thesis I first came in contact with the particular work of art when my supervisor in the conservation department of the Gothenburg University proposed to me to examine the painting in the frame of my master thesis. The material and technical examination of the painting was a given goal from the very beginning, however, the hypothesis that the painting could be attributed to the Cranach workshop took soon the dimensions of a tempting theory, yet based on no concrete facts. Moreover, to try to attribute the painting would be an overambitious idea; The process is complex, the cooperation between different experts can be problematic, the equipment required can be expensive and unreachable, the time limits not so wide, and in the very end the results can always be questionable. Furthermore, in most of the cases there are already before the investigation strong facts that lead to a very specific hypothesis. Thus, the investigation has to either verify or reject this hypothesis.

The Norum painting has not such a background. It is an unknown painting without any formal evidences that point out to a specific art historical context. The painting apparently possesses northern Renaissance qualities but no specific school or artist can be detected with a first glance. Thus, connoisseurship could hardly be applied here. However, it was important that the technical examination would have a stylistic and chronological reference point; otherwise it would give results without any applicable knowledge. The limited known facts –the two hypotheses about Lucas Cranach the Elder and the Cologne school, and the German name of the donator; Karl Teodor Friedrichs, were all pointing out to Germany. Moreover, the name of a specific artist was speculated. Cranach would serve as a concrete point of reference, and even though he may seem to be a misleading choice,

¹ Stenungsund Municipality is in Västra Götaland county in Sweden

the comparison of his art with the Norum painting could possibly put it in some general context or exclude it from invalid hypothesis.

Personally and as a conservator of works of art, I consider the painting's investigation as an exciting process which can offer me valuable and advanced knowledge and experience for my future professional career. The multitask character of the thesis, combines art historical analytical applications and studies of the technology and material of the painting with different kind of scientific techniques. Here, these two disparate disciplines get associated and follow an interdependent development under the supervision of a single professional. Having the basic required educational background in both areas², I undertook the project of the painting's investigation with great keenness and enthusiasm.

1.2 Objectives and questions

The documentation of the painting and the investigation of the truthfulness of the "Cranach hypothesis" are the main and final goals of this thesis. To reach these final goals, the objective is to make use of as much information as possible, derived from the painting as a physical object as well as a work of art which obtains aesthetical and historical qualities. This means that an interdisciplinary method of analysis will be applied combining material and technological/technical analysis with art historical research. In the thesis I take the challenge to investigate how this interdisciplinary model could work out by the application of a critical way of thinking.

The questions tried to be answered during this thesis are divided in two main categories, based in two different investigation models;

Art historical perspectives: Which is the provenance of the painting? Which are the technological characteristics of the cradle? How is the theme of the painting thematically and stylistically categorized? What relevancies can be drawn with the European art and the oeuvre of Lucas Cranach the Elder? Subquestions in this category are; How the scene is chromatically composed? How the synthesis is structured? Which is the role and aesthetical impact of the golden background? Is the golden background a usual element in western religious painting of the 16th and 17th century?

Technical studies: What is the kind of wood of the panel support? Which is the layer succession of the painting? Which is the painting technique? Is there an underlying paint layer under the golden background? What relevancies can be drawn in comparison to the oeuvre of Lucas Cranach the Elder? Subquestions in this category are; What are the results from the ultraviolet examination in relevance with possible later interventions? What information do we get from the results of the infrared and X-rays examination in combination to the microscopic analysis?

² Polyxeni Papadopoulou completed her bachelor studies in conservation science in the Technological Educational Institute of Athens: Conservation of Antiquities and Works of Art. She has also completed academic studies in art history –European and Scandinavian– in the above mentioned institution (approximately 45 ECTS) and Uppsala Universitet (Konstvetenskap B, Svensk och Nordisk Konsthistoria) (30 ECTS).

1.3 Problem statement and limitations

As it is mentioned above, the goal of the thesis is to document the Norum painting and investigate the truthfulness of the ‘‘Cranach hypothesis’’. About the documentation part, this is divided on the one hand in the documentation of the provenance of the painting and its artistic content and on the other hand in material studies and the study of technique. A thorough analytical attempt was made concerning all areas although the limitations were numerous. In the provenance studies the amount of information can be limited by the available archival material and by the object itself. The goal with the art historical analysis is to get basic knowledge about the aesthetical qualities of the painting. Moreover, this analysis makes up a preliminary theoretical base which can serve as a comparison model for the studies of the material and technique of the painting. So, the art historical analysis is highly determined by the goals of the material and technique analysis and does not have the character of independent studies. The material and technique examinations are based on visual observation and the use of ultraviolet fluorescence, infrared reflectography, X-rays radiography and microscopic analysis (with stereomicroscope and optical microscope).

Proceeding to the investigation of the ‘‘Cranach hypothesis’’ this encounters some basic restricting factors. The case here is that such a comparison can only take place between the specific work of art and the most representative paintings and painting techniques of Cranach. This means, that in the case that the Norum painting does not show any basic characteristics of the main techniques of Cranach, the investigator has always to bare on mind the possibility of change of style during a painter’s career and his/her artistic development. That is, however, a relevant statement which depends on each particular artist. In the oeuvre of Lucas Cranach the Elder, there is a stylistic and iconographic development but we cannot detect the same dramatic changes as an experimental artist as Rembrandt (Rembrandt Harmenszoon van Rijn, 1606-1669) or the development from one technique to another as in the work of Diego Velasquez (Diego Rodríguez de Silva y Velázquez, 1599 – 1660).

1.4 Methodology and disposition

The methodology applied in this academic text is determined by the object itself, its historical background and moreover the need for a valid identity as it is expressed by the church’s parish.

After the description of the background and the goals of the thesis in the Introduction chapter follows the first chapter with the title: ‘‘Presentation of the painting and its environment’’. The iconography of the painting as well as its physical properties are analyzed here. Aesthetical qualities and historical aspects are also examined in connection to the religious context of the painting’s environment. It is also appropriate to mention here that the painting is described always from left to right (both for the front and the reverse side), with other words, from the point of view of the examiner.

The second chapter constitutes a detailed reference to all the known facts about the painting: its provenance is examined through the study of archival documents and interviews. Additionally the restrictions that today's physical state of the object puts to the investigator are analyzed. A thorough documentation of the "Cranach hypothesis" and other attribution hypotheses in accordance to professional expertise are taking place next.

After the acquisition of all the available information and the clarification of the thesis's goals the art historical analysis takes its place. The thematic categorization "Pietà or Lamentation?" of the painting was the first necessary action, an action that could aim in understanding the theological content of this religious work of art and moreover direct the following studies to more concrete directions. The results of the thematic categorization lead the investigation to a search of the particular theme in the work of Lucas Cranach the Elder. Here is also included a short discussion about the artistic expression in the oeuvre of Cranach and in comparison to the Norum painting ('*The Lamentation of Christ*' through an iconographical and stylistic perspective in the work of Lucas Cranach the Elder and in Norum painting). What is following next is a simple analytical theory created especially about the particular painting and its documentation needs. The theory focuses on the color and the geometrical structure of the painting and uses them as tools for the investigation process by trying to interpret their function in the particular painting. It is important to mention that this theory is developed in connection to Renaissance art and theological thinking in art.

The last part of the investigation analysis is the studies of the technique and material of the painting (The tools of examination and analysis – Material and technique documentation). The material and technique of the painting and of the art of Cranach in general, are examined and compared by applying scientific methods and tools through the scope of a "Conservator of Works of Art". The studies are detailed and concern each individual part of the painting (from the wooden support to the varnish layer), their material nature and the way that they were applied. The facts acquired by this technical part are now filtrated and compared to the knowledge obtained from the previous theoretical chapters.

The thesis is completed by final conclusions and a discussion about the acquisition of new knowledge and the successfulness of the investigation in achieving its goals.

1.5 Source review

The main source of information is the Norum painting itself. On the other hand, the professional level of the investigator and his/her ability for critical thinking are the most important parameters for succeeding the investigation's final goals. Additionally, a wide range of informative sources became available for this thesis. Personal and e-mail contact with art historians, art conservators and people connected with the painting, literature studies and application of instrumental analysis were the main sources used during the thesis.

Historical aspects - *Provenance studies and attribution hypothesis*: The reverse of a panel painting can be carrier of valuable information about its provenance. On the other

hand, the existence of archival documents can be of valuable help during the provenance studies. All archival documents related to the Norum painting and stored in the *Regional State Archive* (Landsarkivet) of Gothenburg. These documents would be detected, copied and studied.

With the help of Helena Lindholm, PS Technical Manager of Norum parish, contact was developed with Christina Grimpe, descendant of Karl Theodor Friedrichs –donator of the painting to Norum church. Grimpe provided me with some important facts about the painting. However, further attempts to reach Grimpe by e-mail (Grimpe is nowadays living in Germany) in search of additional information were unsuccessful.

Concerning the ‘‘Cranach hypothesis’’, the goal was to investigate the archival information and to come in contact with any conservators that had previously come in direct contact with the painting. Urban Ullenius, a Swedish conservator, was initially advised in case that he had more specific knowledge about the painting’s background. Furthermore, Rickard Becklén, conservator in the National Museum of Stockholm was advised. The National Museum of Stockholm possesses a collection of around 130 German paintings from which ten are attributed to Lucas Cranach the Elder -six oil paintings and four drawings.³ The National Museum has also presented Cranach paintings in the exhibition ‘‘Cranach och den tyska renässansen (Cranach and the German Renaissance): Nationalmuseum 23.9 - 20.11 1988’’. Rickard Becklén advised me to contact Gunnar Heydenreich, the author of the book ‘‘Lucas Cranach the Elder, Painting materials, techniques and workshop practice’’, published in 2007. An attempt to contact Heydenreich did not succeed. On the same time I acquired among other books a catalogue of the Cranach oeuvre written by Jacob Rosenberg and Max Friedländer *The Paintings of Lucas Cranach*.⁴ That catalogue includes an index to the past and present owners of Cranach paintings. In Gothenburg, the Gothenburg Museum of Art (Göteborgs Konstmuseum) also possesses a Cranach oil painting (‘‘Salome’’⁵) and due to this fact I decided to contact its former director, PhD Björn Fredlund. Fredlund proposed me to contact the director of the Groeningemuseum in Brugge, Till-Holger Borcert, in order to get information of attributive character about the Norum painting.

The tools of examination and analysis – Art historical analysis: In categorizing the theme of the Norum painting –*Pietà or Lamentation*, Christian art dictionaries were studied. A comparative model for the categorization of the painting’s theme was also provided by studying one of the most famous Pietàs, the French *Pietà de Villeneuve-lès-Avignon*. This is a well-known painting with concrete semiological elements in relation to its strong devotional character.

In studying the Lamentation subject in the oeuvre of Cranach it was used the books available by the Gothenburg University library: *The Paintings of Lucas Cranach*,⁶ *Lucas Cranach the Elder: Painting Materials, Techniques and Workshop Practice*,⁷ *Lucas*

³ <http://webart.nationalmuseum.se/search/search.aspx>

⁴ Rosenberg, J. (1978)

⁵ <http://www.konstmuseum.goteborg.se/>

⁶ Rosenberg, J. (1978)

⁷ Heydenreich, G. (2007)

Cranach the Elder,⁸ *Lucas Cranach d.Ä.*,⁹ and *Lucas Cranach the Elder*.¹⁰ Concerning the analysis of the painting's geometry and perspective it was studied *The invention of infinity: mathematics and art in the Renaissance*, by Judith Field. This book refers to a wide range of mathematical expressions applied during the construction of a painting. The chromatic synthesis of the painting including the gold background is analyzed through the prism of Christian art conventions described in the books *De heliga tecknens hemlighet : om symboler och attribut*¹¹ and *Colour*.¹²

In the last chapter of the thesis, *The tools of examination and analysis – Material and technique documentation*, a wide range of sources became available. By carrying out the thesis's technical investigation and documentation in the conservation company K-Konservator, the constant professional help of the conservators Leif Berg and David Edvardson was of great importance. With their help sample taking and microscopic observation were successfully carried out. Of great importance was also the help of the PhD student in the Conservation Department of the Gothenburg University Ingalill Nyström –UV fluorescence and IR2 reflectography- and Carin Petterson in the conservation company *Studio Västsvensk Konservering* in Gothenburg –X-rays examination.

Concerning the literature in this chapter, Bruce Hoadley's books *Identifying wood*¹³ and *Understanding wood*¹⁴ constituted the basic manuals for the wood identification of the Norum painting panel support. These two books have a concrete scientific content and are relevant to wood identification from the conservator's prism, since Hoadley has taken part in art conservation publications. For further studies in the construction characteristics of the painting's panel support the book *Structural Conservation of Panel Paintings: Proceedings of a Symposium at the J. Paul Getty Museum* served as a valuable reference point. Proceeding to the overall analysis of the painting's material and techniques it was thoroughly studied the book *Scientific examination for the investigation of paintings. A handbook for conservators-restorers*.¹⁵

The knowledge acquired by almost all the above mentioned literature sources and personal expert communication was then used in the comparison studies of the Norum painting with the oeuvre of Lucas Cranach the Elder. For the comparison studies a single book was studied, with the title: *Lucas Cranach the Elder: Painting Materials, Techniques and Workshop Practice* by Gunnar Heidenreich.¹⁶ This book constitutes a "bible" for the techniques and materials applied by Cranach, and an adequate manual for the level of the comparison studies required by this thesis academic goals. All the known range of techniques and materials used by the great master are mentioned and developed here, with the assistance of extensive instrumental analyses and literature as well as archival research.

⁸ Proske, M. (2007)

⁹ Schuchardt, G. (1994)

¹⁰ Stepanov, A. (1997)

¹¹ Dahlby, F. (1977)

¹² Bomford, D. (2000)

¹³ Hoadley, B. (1990)

¹⁴ Hoadley, B. (2000)

¹⁵ Pinna, D. (2009)

¹⁶ Heydenreich, G. (2007)

Color illustrations of a big number of works accompanied by UV fluorescence, IR and X-rays illustrations as well as microscopic analyses are taking place here, constituting by this way an extended qualitative and quantitative model for comparison studies.

2. Presentation of the painting and its environment

This chapter aims to provide the reader with some basic, however valuable information about the Norum painting (fig.1). The description is short and it highlights both the painting as an independent physical and cultural object as well as its hypostasis (tangible and intangible form) as a part of a whole monument -Norum church. The relationship between the painting and the church is interdependent, defining with the rest of the church's inventories, its external appearance and its landscape, a cultural entity.



Fig. 1. The Norum painting with its current frame. (K-Konservator, Photo: Polyxeni Papadopoulou)

Norum church (fig.2) is the oldest¹⁷ of the three parish churches of Stenungsund in Västra Götaland county of Sweden.¹⁸ The church is placed between the two main roads towards the coast –the road towards Strandnorum and the road towards Nösås. The church has a long history dating back to 1100.¹⁹ Today's church was built in 1847 after the old church was demolished.²⁰ The tower was separately rebuilt in 1999.²¹

The church is a hall church designed by Petter Petterson²². It has a rectangular nave and its altar ends up in a three-side apse. The exterior has the simple, neoclassicistic character of the 1800's in Sweden, except for the tower which is rather modern, with a wider base.

The interior is light with open spaces.

The painting that this particular thesis treats –the Norum painting– was donated to Norum church by Karl Teodor Friedrichs (from Stenungsund) in 1949²³ and nowadays is placed on the south wall of the nave of the church (fig.4). It is an unsigned oil painting on a wooden support –panel painting. The dimensions of the panel are: 104.8cm height,

¹⁷ Björn, E. (1997), p.3

¹⁸ The other two churches are *Ödsmåls church* and *Stenungsunds kapell*

¹⁹ <http://www.bebyggelseregistret.raa.se>

²⁰ *ibid*

²¹ *ibid*

²² *ibid*

²³ Björn, E. (1997), p.10

73.7cm width and c.0.5cm thickness. The panel is consisted of three planks joint together (for the detailed description of the panel, see part 5.2.1). The reverse of the painting bears a cradle –subsequent addition– and is painted with brown color (fig.3).



Fig. 2 (above). Norum church, south side (Photo: Polyxeni Papadopoulou)

Fig. 3 (left). Reverse side of the Norum painting. The reverse bears a cradle construction made up of seven vertical and seven horizontal slats. A complementary vertical slat of shorter length than the others was added on the lower right part. After the construction of the cradle the reverse was painted with brown color. (K-Konservator, Photo: Polyxeni Papadopoulou)



Fig. 4. Norum church's interior towards the East. The Norum painting is visible on the right, on the south wall (Photo: Tomas Brandt)

The painting is placed in a black-colored wooden frame (8.4cm width) which as it derives from a picture –of unknown date– found in *The Regional state archive* (Landsarkivet) is not the painting's original frame (fig.5). In that picture the painting is placed in a gold frame. If this frame was the painting's original frame is not known. The painting is protected by a glass which does not come in direct contact with its surface. The glass is secured by bolts/screws which penetrate the frame of the painting and stabilize the painting on the wall.

The painting depicts four figures. Starting from the left, a kneeling figure is turned towards the right, in a $\frac{3}{4}$ position, and is standing behind the second figure of the scene. Thus, the right side of the body of the man is not visible. Additionally, the edge of his left



Fig. 5. The painting with its former golden frame. From left to right: St John, Christ, Mary, Mary Magdalena (Regional archive: Inventarier Norum)

right hand towards the lying man and touches his upper body part. The white veil that the woman bears on her head covers the upper part of her shoulders and her dark red robe. An ochre-brown belt is placed on her waist. Additionally, a blue cloak is covering her back and shoulders. Tears are running from her eyes (fig.6). The fourth figure is a kneeling woman. This woman is placed on the outmost foreground of the scene and is standing in front of the lying man by obscuring his feet. Her body is placed in a profile position but her head is slightly turned towards the viewer. She is turned towards the lying man and holds her hands in a praying position. The edge of her back and her feet are not visible because these areas are limited by the borders of the panel. The woman has long, light brown hair and she wears a red dress with patterned flower motives in light grey color. She has a green belt and under the red dress she bears a green

side is limited by the borders of the panel. This man is presented in full size, he has long brown hair, and wears a green robe and a red mantle. The man bends slightly forward and supports the shoulders of the second, lying figure of the scene, in an attempt to keep this in a raised position. The second figure is a man placed on the ground in an inclined position. He meets the viewer in a $\frac{3}{4}$ position. He has long brown hair and beard and he bears a white and short loincloth. His eyes are closed. His body does not touching the ground but is placed on a white sheet. The man has red marks on his forehead and a small bleeding wound on the left side of his ribs. Continuing towards the right, a woman is standing behind the second, lying man, and thus only her upper body part is visible. She bends towards the left and the lying man. She is placed in a $\frac{3}{4}$ position in relation to the viewer. With a delicate movement she stretches her

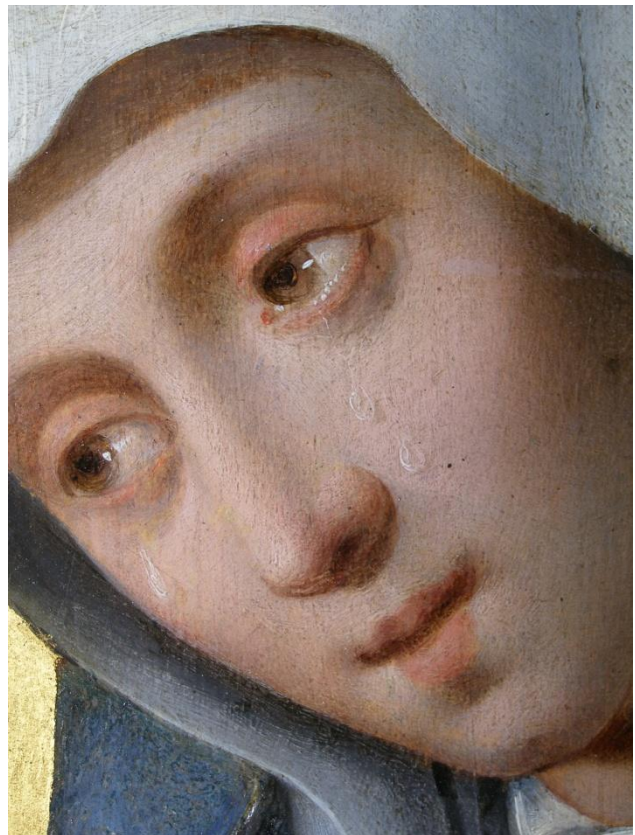


Fig. 6. The Virgin Mary. Detail from the Norum painting. (Photo: Polyxeni Papadopoulou)

inner garment. Finally, a light purple cloak is covering her back and her right shoulder. The cloak and the dress of the woman bear an ochre-yellow braid on their edges. The same kind of braid is also decorating the red mantle and the green robe of the first figure and the blue cloak of the third figure.

On the foreground there are no other elements except for a small part of soil ground depicted with brown color. The background of the painting is gold, and plain by depicting only two elements: behind the third figure there is a vertically placed brown pillar and on the right side of the pillar there is an escalator. The escalator has brown color and is placed in an inclined position towards the left.

Concerning the placement of the painting in the interior of Norum church and in relation to the rest of the inventories, this is placed on the south wall opposite of the pulpit (northern wall) and together with the high altar the three of them create a harmonic and symmetric pattern –an isosceles triangle with its equal angles being placed on the pulpit and the painting (fig.4). Moreover, the size and the color scale of the painting is rather equivalent with the other two objects mentioned above –the altar and the pulpit.

The particular painting serves together with the rest of the internal decoration of the church a function above any stereotypical and secular aesthetical norms. This happens due to the high aesthetic quality and historical value of the objects being placed in a space where religious faith/liturgy is practiced. Boel Hössjer Sundman expresses this clearly:

“Konstverken ger mening och laddning åt rummet och bör ägnas stor omsorg. De hör, liksom kyrkorummet i sin helhet, till det som kan främja och stärka människors tro.”²⁴

Sundman describes here the intrinsic meaning of the works of art in a church interior by laying stress on their ability to render significance to it and by this way reinforce the worshippers' faith. The Norum painting together with the rest of the church's inventories provide the visitor of the church with a feeling of long lasting continuity. The Romanic font from the 1100's, the tower's bell from the 1300's, the painting that is preliminarily estimated to be from the 16th-17th century²⁵ and the neoclassic benches from the 19th century, are some of the church's objects that remind to its visitors that their Christian worship and traditions have and will continue to survive through the centuries.

By concluding this chapter it becomes unambiguous that a possible attribution of the painting could potentially have a great impact on Norum church as a whole. Up to today the painting is not included in the list of Norum church's inventories being submitted by *The Cultural Historical Building Register* (Bebyggelseregistret)²⁶ of the *National Heritage Board* (Riksantikvarieämbetet) of Sweden. This probably happens due to the unknown

²⁴ Hössjer Sundman, B. (2007), p.61-62

²⁵ The hypothesis that the painting is dated around the 16th century was supported from the very beginning from the church's parish and the archival information of Landsarkivet. However, after extended discussions with Charlotta Hanner Nordstrand (personal contact), Margareta Ekroth Edebo (personal contact), Björn Fredlund (personal contact) and Till-Holger Borchert (e-mail communication) the date margins were expanded to a period covering both the 16th and the 17th centuries.

²⁶http://www.bebyggelseregistret.raa.se/cocoon/bbr/byggnad_formatted_property.html?propertyId=21000003799459&baseObjectType=vardering&baseObjectId=21000000364107&rubrik=Motivering&menu1=Byggnad&menu2=V%E4rdering

background of the painting. This thesis constitutes the first systematic approach for the documentation of the painting and it could potentially aim towards a future inventory entry for it. Concerning the painting in connection to its environment, the acquisition of formal evidences about its history would change both its *status* and its interaction with the interior of the church and its visitors.

3. Historical aspects - *Provenance studies and attribution hypotheses*

The goal of this chapter is to thoroughly document the historical background of the painting. Concrete facts –archival– and other formal evidences –such as an interview with the family of the donator– present the first, “raw” material about the historical background of the painting.

As the reverse of panel paintings usually bears evidences about the joiners’ and the painters’ workshop practices, the application of the cradling in the Norum painting as a later intervention is mentioned. In all cases of cradled panels, important attributive information is lost forever.

Then, the attribution process in general and its possibilities and limitations are examined in order to clear out its relation to the Norum painting and the thesis. The attribution of the painting to a particular artist, the conditional factors and limitations that such an action is determined by, and the “dangers” that it could carry with it are being thoroughly analyzed.

The choice of using Cranach’s art as a comparable model for the Norum painting seemed to be not only an interesting starting point for this thesis but also a theory needed to be investigated. As the reader is going to find out in the following part, Cranach has become informally connected with the particular painting, at least by now. An investigation about this hypothesis was from the very beginning an underlying “demand”.

Finally, the art historical expertise takes its place and some new attributive directions are analyzed and weighted under the scope of a possible future research.

3.1 Provenance studies I- *The examination of Norum church’s archives and the Friedrichs family*

Before any other activity would take place, all archival documents able to give some information about the provenance of the Norum painting should be thoroughly examined. The investigation started by reading Norum church’s own brochure,²⁷ where apart from the history of the whole monument and its inventories it is being stated that the painting was donated to the church in 1949 by Karl Theodor Friedrichs.

Next step in the provenance studies was the *Regional State Archive* (Landsarkivet) in Gothenburg. Between 2007-2010 all church archives from the Västra Götaland county were transferred from the parish’s own archives to the *Regional State Archive*.²⁸ There, there were detected four documents which describe briefly the conditions under which the painting reached Norum church as well as the physical state and known historical past of the object. According to these documents (Appendix 1,2,3,4):

²⁷ Björn, Erik (1997).

²⁸ <http://www.riksarkivet.se/default.aspx?id=14875&refid=1192>

- The painting was donated to Norum church in 1949 by Karl Theodor Friedrichs from Stenungsund.²⁹
- The painting was placed since at least 1962 on the south wall of the church.³⁰
- It is an oil painting on a panel support made of oak. Its dimensions are: 114cm high and 82cm wide.³¹
- The painting depicts the *Deposition of Christ (Nedtagandet från korset)*, it's a work from the 16th century and it is possibly German, from the Cologne school.³²
- The painting was originally placed in a gold gilded frame.³³
- No conservation/restoration measures for the painting are described in the documents.

The information about the construction period of the painting (16th century) and the attribution to Cologne school is not supported by any additional informative or authorized source.

After examining all the available archival information it was made an attempt to reach any descendants of Karl Theodor Friedrichs, in search of more information about the painting's origin and provenance. The BA Technical Manager of Norum parish, Helena Lindholm, directed me to Christina Grimpe, daughter of Karl Theodor Friedrichs and Erika Friedrichs. In accordance to Helena Lindholm and my own personal contact with Christina Grimpe, the following facts enriched the archival documentation (the original, Swedish text of the discussion with Christina Grimpe is quoted in Appendix 6):

*“The painting belonged to the property of Karl Heinrich Friedrichs Kommerzienrat and his wife Karolina (Christina’s grandparents). Karl Heinrich was the German emperor’s personal counselor for industrial matters. The family was living in Potsdam (southwest of Berlin) and the painting was placed in the “Blå salongen” (Blue livingroom) above the door. Karl Heinrich was an art collector (paintings, pewter items, fayance). It is not known how the painting came to the family’s ownership. When my grandparents moved to Sweden in connection to the Second World War, Karolina (who by then was single) would also move to Sweden taking with her a part of her household goods; unfortunately she never came to Sweden but she was deported to TheresinStadt [sic]. Karl Theodor and Erika Friedrichs donated the painting to Norum church in Kristi Himmelfärdsdagen, 1949”.*³⁴

The new evidence that came up after this contact was that the painting was decorating the house of the German Karl Heinrich Friedrichs, who by then held an important political position. His residence was in Potsdam. The painting was transferred to Sweden in order to be saved from the ravages of the Second World War. That the painting was once in Potsdam is additionally confirmed by the affixed, paper note bearing the name

²⁹ Inventariebok Norumkyrka, 1962-, N:3/Norum Forsamlingen, Documentation-Inventarier, 1980, N:8

³⁰ Inventariebok Norumkyrka, 1962-, N:3

³¹ Inventariebok Norumkyrka, 1962-, N:3/Norum Forsamlingen, Documentation-Inventarier, 1980, N:8

³² Inventariebok Norumkyrka, 1962-, N:3/Norum Forsamlingen, Documentation-Inventarier, 1980, N:8

³³ Inventariebok Norumkyrka, 1962-, N:3

³⁴ E-mail contact with Christina Grimpe via Helena Lindholm (7th April 2010).



Fig. 7. Paper mark placed in the intersection of the 2nd vertical slat with the 5th horizontal crossbar (Photo: Polyxeni Papadopoulou)

“...haus/Potsdam/ Spedition” (on the intersection of the 2nd vertical slat with the 5th horizontal crossbar) (fig.7). This fact points out to a stop in the painting’s life.

These are all the facts that could be gathered by now about the provenance of the painting. Christina Grimpe provided me with more information, nevertheless of an attributive character (see part 3.4).

3.2 Provenance studies II- *The cradle on the reverse of the painting; deletion of attribution evidence, vehicle of provenance facts*

The painting bears a cradle on its reverse. Cradling is a technique that was mostly practiced during the 18th-19th centuries and aimed mostly to improve the mechanical stability of the wooden panel of a painting. Cradling was often accompanied by thinning the reverse of the panel support, a process which inevitably led to the loss of valuable attributive and provenance evidences. The kind of these evidences is described here;

Stamps or Seals and paper notes: In the art of the Northern Renaissance³⁵ wooden panels were carefully prepared before being painted, sometimes given a stamp or seal from the city in which they were produced, presumably certifying the level of their craftsmanship.³⁶ In the Norum painting, if there was such a stamp or seal its traces are lost forever due to the thinning of the support as a preparation process for the cradling. Nevertheless, there was detected a seal on the thinned support which



Fig. 8. The seal on the reverse of the painting (Photo: Polyxeni Papadopoulou)

was probably put there as a later application and in connection to the cradling (fig.8). The seal is of a round shape and has a blue-purple hue. It is placed between the 1st and 2nd horizontal crossbars and the 4th and 5th vertical fixed slats. The seal is retained in a good preservation state but it is not possible to distinguish its content because of the low contrast

³⁵According to Jørgen Wadum and his article “Historical overview of panel-making techniques in the Northern Countries” the term Northern Renaissance includes at least Germany, Netherlands, Switzerland, Belgium and northern France.

³⁶ Harbison, C. (1995), p.70



Fig. 9. Paper mark placed in the intersection of the 6th vertical slat with the 7th horizontal crossbar (Photo: Polyxeni Papadopoulou)

with the dark painted reverse of the painting. Unfortunately the seal was detected rather late, when no possible equipment for its analysis was still available. In the conservation company “K-konservator” the seal was illuminated with an ultraviolet fluorescence lamp but this application was not enough to reveal its content. Infrared reflectography would probably give much better results but it was not available by that time.

In connection to this seal, the glued paper note with the name “...haus/Potsdam/ Spedition” [...house(?) /Potsdam /Shipping transfer (?)] mentioned in the previous part, is obviously a reference for the place that the painting was transferred to –the German city of *Potsdam*. This is additional evidence to the fact that the painting was in *Potsdam* as *Christina Grimpe* witnessed. On the reverse of the painting there is another paper note where it is typed:

“Gen. Kat. No 5572” [General Catalogue(?) Nr 5572] (fig.9). This paper note is placed on the intersection of the 6th vertical slat with the 7th horizontal crossbar. That note suggests that the painting was a part of a catalogue, however, the institution that this catalogue belonged to is unknown. It is possible that the painting once belonged to an institution and



Fig. 10 (above). Inscription placed between the 2nd and the 4th vertical slats and the 3rd and 4th horizontal crossbars (Photo: Polyxeni Papadopoulou)



Fig. 11 (right). Inscription placed between the 3rd and the 4th vertical slats and the 2nd and 3rd horizontal crossbars (Photo: Polyxeni Papadopoulou)

then in some way came to the property of Friedrichs family. Finally, there are three inscriptions. The first one is painted with light brown color and is placed between the 2nd and the 4th vertical slats and the 3rd and 4th horizontal crossbars (fig.10). It quotes: “M.1471.” This inscription is repeated on the 3rd horizontal crossbar with white paint

(second inscription) (fig.10). The inscription with the white paint has faded away and that is probably the reason why it was written again with light brown color. The third inscription is placed between the 3rd and the 4th vertical slats and the 2nd and 3rd horizontal crossbars (fig.11). It is painted with white color and it has partially faded away. From the remnants it is possible to read: ‘‘C(?).X...A(?)-3-4...2-3..11’’. Unfortunately this combination of letters and numbers does not make any sense and is probably and once again some way of classification for the painting.

3.3 Attribution of the Norum painting – possibilities vs. probabilities

The attribution of an unknown painting is a hard process and as it is already mentioned in the Introduction, it has to be based upon concrete and unquestionable facts. The other statement that is also mentioned in the Introduction, is that it has to exist before the initiation of such an attribution investigation some strong facts that point to a specific hypothesis. Then this hypothesis has to be either rejected or verified. In the case of Norum painting -which does not demonstrate any particular connection with the work of Lucas Cranach the Elder- this would actually have to bear some characteristics of the art of the great master in order to proceed to this rejection-verification process.

In the Norum painting, the probability that the craftsmanship of Cranach would be present seems to be highly ambivalent. This statement seems to be positively expressed not only by myself based on my own visual training, but also by professionals with great expertise and experience in the field of art history and criticism (see parts 3.4, 3.5). This statement is indeed expressed with confidence, however, an important part of this thesis’s academic goal is to carry out an investigation on an unprejudiced base and leave the painting in its tangible form to hold the role of the protagonist.

The painting can be examined and new, valuable knowledge about its state of art and technology can come to light. It can also take an approximate place among the numerous artistic expressions of European art. Thus, no topographical and chronological statement can be absolute, not to mention the attribution to a specific workshop or artist. In the book ‘‘Art Criticism from a Laboratory’’, Alan Burroughs writes:

‘‘To give the subject a date, name the style, and fit the design to a larger theme in the history of people’s tastes, to gather the last drop of meaning from the physical materials which confront one, is really to appreciate a picture. In order to do this, we must draw upon our knowledge of nations, events, and literatures’’.³⁷

Would it be possible to undertake such a profound investigation for the specific painting? The question is unfortunately no. The limited known facts about the historical background of the painting, the ambiguity of its stylistic character and lack of equivalent material for comparison studies are all limiting factors. Moreover, the sixteenth and seventeenth centuries were an extremely varied and changing period in Northern Europe.³⁸ Painting on

³⁷ Burroughs, A. (1938), p.16

³⁸ Harbison, C. (1995), p.7

a panel support was a very common practice and the medium was highly “exploited”. Copies were a common phenomenon at that time as they are today, thus their creation had a different, more sincere and noble motive by that time. Craig Harbison mentions the practicing of repetitions from works created in the fifteenth century.³⁹ Copying the works of the great masters was often meant to be a sign of honor towards them and traditionally, great religious art received that kind of veneration.⁴⁰ However, in the new realist and individualist mentality which started to develop in the fifteenth century, an artist could also creatively adapt, rather than slavishly copy.⁴¹

Norum painting cannot be excluded from the possibility of being a copy from another work. Till-Holger Borchert, chief curator of the Groeningemuseum in Brugge, suggested a relevant theory especially about Norum painting. His help was of great importance for intriguing the beginning of the investigation process. Borchert’s suggestion is cited and analyzed in part 3.5.

3.4 Attribution hypothesis I - ‘*Lucas Cranach the Elder*’; an undocumented hypothesis that served as a reference point for the investigation process

‘Tavlan skall vara en Lucas Cranach d.ä!’⁴²

Christina Grimpe in our discussion about the painting expressed her unexpected surprise about the painting being a work made by Lucas Cranach the Elder. However, this assumption seems to have gained supporters between the members of the church’s parish. This assumption was clearly pointed out from my very first contact with the painting, thus based on no documented source. In the “Index to the past and present owners of Cranach paintings” being submitted in the catalogue of Jacob Rosenberg, the name of Friedrichs is not included.⁴³ Moreover, no specific art expert had given his/her consent about the true basis of this assumption. I decided to contact the most relevant experts that had come in direct contact with the painting, conservators that carried out the conservation activities in Norum church in the end of 1990’s. Urban Ullenius, a Swedish conservator, was a member of the team that undertook the conservation of the church’s inventories in the end of the 1990’s.⁴⁴ Ullenius mentioned that the painting was not included in the conservation program and remained intact.⁴⁵ He noticed by then the high artistic quality of the painting and although he had also heard the rumors about its attribution to Cranach he took the initiative to get some complementary, professional advice.⁴⁶ The expert (unknown) that Ullenius was advised by did not support the attribution to Cranach.⁴⁷ (For the original quotation see Appendix 5).

³⁹ Harbison, C. (1995), p.102

⁴⁰ *ibid*

⁴¹ *ibid*

⁴² E-mail contact with Christina Grimpe (7th April 2010).

⁴³ Rosenberg, J. (1978), p.180

⁴⁴ E-mail contact with Urban Ullenius (18th April 2010).

⁴⁵ *ibid*

⁴⁶ E-mail contact with Urban Ullenius (18th April 2010).

⁴⁷ *ibid*

On the same time I decided to contact *National Museum* in Stockholm to get personally some professional advice. Paintings' conservator Rickard Becklén proposed me to contact Gunnar Heydenreich, the author of the new (2007), extensive book about Cranach.⁴⁸ Unfortunately, I did not succeed to reach Heydenreich. Next, I took personal contact with Ph.D. Björn Fredlund, former director of "Gothenburg Museum of Art" (Göteborgs Konstmuseum) for the years 1996-2003. He pronounced clearly his belief that the painting could hardly belong to Cranach's workshop and moreover that the painting does not "look" really German.⁴⁹ He proposed to me to direct my studies towards Flanders. My contact with Till-Holger Borchert from the Groeningemuseum in Brugge concluded to a fruitful discussion, pointing out to a more specific direction. Flanders and the Flemish painting of 16th-17th century would now take part in the investigation process. The discussion with Borchert and the conclusions drawn by it are analyzed in the following part.

As the reader is going to find out in the following part, Borchert provided me with a rather realistic version, although pointing out to Flemish art in general. Flemish art of the 16th-17th centuries constitutes a period in the world history of art with a vast artistic production. This thesis, based on the limitations for a Master thesis and to the painting's own background as well, could not exceed itself to explore its relation to the Flemish art in a realistic, profound basis.

Due to the above reasoning, Cranach will actually serve as a reference point for the investigation process. In this thesis, it seems more logical in a first place to test the assumption that the painting belongs to the Cranach workshop. Cranach can also serve the thesis as an indisputable alibi: here the examination of the painting's technique demands some comparable and concrete facts which can only be provided if a specific artist and his technique is speculated. Lucas Cranach the Elder is one of the greatest artists of the Northern Renaissance and a big number of written sources are in the disposal of the researcher. About the hypothesis that the painting is made by Cranach, if there will come up enough evidence to reject the hypothesis that the painting is made by him then that will mean that the evidences will show towards another direction. This new direction could be the starting point for any future examination of the painting's history. Concerning Flemish art, to base my investigation to an abstract probability even if it is based on professional expertise, would be rather chaotic to start with.

3.5 Attribution hypothesis II- *Art historians' hypothesis and the "vote" for Flanders*

As it is already mentioned, Björn Fredlund, directed me to Brugge museum and its chief curator Till-Holger Borchert. Specifically about the attribution of the painting, Borchert formulated the following options (for the original text see Appendix 7):

⁴⁸ E-mail contact with Rickard Becklén (24th Februari 2010).

⁴⁹ Personal contact with Björn Fredlund (13th April 2010).

“The composition is old/Flemish around 1500, the execution seems somewhat later, i.e. late 16th or even early 17th century. The way that the paint is applied and especially the manner of highlighting by using what I guess is lead white is comparable to works produced in Antwerp in the 17th century. Especially Saint John (in UV) almost looks a bit like Rubens. I can’t link it to anything early 16th century really, or even mid-1500s. Nothing really compares to for example Key, Pourbus, Claeissens. The whole painting certainly looks Flemish, almost like a 17th century copy of an original from about 1520. I don’t really think this is German. What about the support? I guess it’s oak...”⁵⁰

If we summarize Borchert’s text, then we arrive at the following conclusions: As Fredlund, Borchert deviates from the idea that the painting is German and subsequently a work made by Cranach. He supports the belief that the painting can actually be Flemish, with an old composition from around the 1500s and an execution from the late 16th-early 17th century. He finds similarities between the face of John the Evangelist and the faces of the paintings by Peter Paul Rubens (1577-1640), after excluding the later retouchings on the hair of the Evangelist (fig.73).



Fig. 12 (top left): St. John the Evangelist, detail from the Norum painting (Photo: P. Papadopoulou). **Fig. 13** (top right): Peter Paul Rubens, detail from “The fur”, c.1638, oil on wood, 176x83cm, Kunsthistorisches Museum, Vienna. **Fig. 14** (bottom left): P.P.Rubens, detail from “Helena Fourment”, 1620s, oil on wood, 96x76cm, Mauritshuis, The Hague. **Fig. 15** (bottom right): Mary Magdalena, detail from Norum painting (Photo: P.Papadopoulou).

A basic similarity with the oeuvre of Rubens is rather obvious. The most pronounced similarities can be found in the round eyes and the lips of the figures. Another important characteristic is the round volumes of the faces. On the other hand, the faces of Rubens are additionally characterized by a more vibrant technique and degree of expressiveness. The exuberance in forming volumes is distinctive in the oeuvre of Rubens and the other Barock masters and is not met in the Norum painting. Proceeding further to the composition as a whole, in the work of the Barock masters the element of excessiveness is also expressed in the position and movement of the figures (see fig.19). This fact stresses another point that Till-Holger Borchert referred to, that the composition seems to be older, from around 1500 (see fig.30)

⁵⁰ E-mail contact with Till-Holger Borchert (19th March 2010).

4. The tools of examination and analysis – Art historical analysis

After analyzing the known background of the painting and evaluating the scientific frame of the thesis in the previous chapters, in the present chapter it is intended to outline the main art historical tools for achieving my investigation goals in a first theoretical level. Norum painting constitutes a work of art of unknown origin, a work of art whose thread of history has been lost. With the limited existing evidence about the painting, even the art historian's expertise would find obstacles in decoding its artistic content. Nevertheless, from the very beginning of the thesis I thought that together with the application of the conservation's scientific applications, it would be useful to make use of some basic art historical applications. Conservator's professional interest starts from his/hers inherent appreciation for art expressions. To maintain the tangible and intangible nature of the works of art, the prerequisite is profound understanding for the art processes and the artists as creators.

This analysis is based on the Norum painting, having as a starting point the qualities of the particular painting followed by the prerequisites for this master thesis. The best possible analytical tools for the particular case are discussed and an argumentation about their usefulness takes place.

By the time that I committed myself to carry out the investigation of the Norum painting my first action was to make a short Internet search about the iconographical subject of "The Lamentation of Christ". I soon realized that some paintings with the same basic iconographical elements as the Norum painting were given the categorization title of Lamentation of Christ, while others were given the title of Pietà. To make clear in which category the Norum painting belongs and the reason for such an iconographical distinction was not a matter of personal choice; it was actually a demand before proceeding to any other action. In art history each iconographical type is characterized by a stylistic development and has its own specific characteristics. The Norum painting is not an exception from this rule and any acquired information from this process can probably lead to specific investigative directions. By initiating the subject's research I went through the two of the archival documents that I collected from the *Regional State Archive*. In these documents it is mentioned that the painting depicts the *Deposition from the Cross*⁵¹. This title has actually to be excluded because in the particular subject Christ is still in a process of being descended from the Cross. He is moreover carried by at least two men –obviously not including Mary and Mary Magdalena. In the Norum painting Christ is already placed on the ground surrounded by John the Evangelist, the Virgin and Mary Magdalena. The scene is a clear depiction of Mary's lament for her dead son, with other words a Lamentation. Nevertheless someone could also name it a Pietà. In which category can the Norum painting be placed?

After the basic categorization of the theme, the religious art in the oeuvre of Lucas Cranach the Elder is studied and especially the occurrence of the subject of Lamentation of Christ. How many authentic Lamentations by Lucas Cranach have been preserved up to today? Was this a subject favored by the artist? Is there a characteristic connection of

⁵¹ Inventariebok Norumkyrka, 1962-, N:3/Norum Forsamlingen, Documentation-Inventarier, 1980, N:8

Cranach's Lamentations with the Lamentation of the Norum painting? The basic characteristics of the work of Cranach and their contradiction with the artistic qualities of the Norum painting are evaluated here. The analysis in this level is short and general and aims mostly towards a discussion about the artistic aura of Lucas Cranach's works in comparison with the one being met in the Norum painting. Lucas Cranach the Elder was not only a great artist as it concerns his artistic technique. His art is placed among the great humanistic expressions of the northern Renaissance art –one can say that he was a real *Homo Universalis* as the Italians Michelangelo Buonarroti (1475-1564), Rafael (1483-1520) and Leonardo da Vinci (1452-1519).

In the last part, a more concrete analysis takes place based on stylistic characteristics and their relation to a theological basis. The theology of an image defines its stylistic characteristics under the scope of a specific era. This analysis constitutes a very useful assisting tool for the examinations of the painting's material and technique that are being developed in the following chapter. Considering the usefulness of this analysis I tried to make use of the most appropriate analytical tools. My first thoughts about applying Erwin Panofsky's⁵² iconological analysis were soon discarded. Panofsky's iconology would not be possible to comply with the request for answers in a stylistic level. This happens due to the poor symbolic content of the painting's elements and the fact that the painting is of unknown master and chronology. Leaving behind Panofsky's interesting, though complicated and highly demanding analytical tool, I tried to concentrate on a more simple and direct analytical method. The model that I chose to use aims to analyze at a first, basic level, some of the basic elements of the painting. The main elements that could contribute to a better understanding of the Norum painting cover two main categories: The geometrical structure of the scene of the painting and the chromatic synthesis and color symbolism. The lines and forms of the different elements of the painting could also contribute to its stylistic categorization; however, their analysis is a hard task which actually surpasses the goal of the thesis.

To conclude to the choice of the particular categories, the painting and its own artistic content were the factors that solely led to their choice. One of the first things that were noticed in the painting was its strict geometrical arrangement. The painting, as the reader is going to find out in part 4.3.1, is structured in a system of diagonals and parallels with the symmetry to be distinctively present. This observation is going to be analyzed under the category: "The geometrical structure and perspective of the scene of the painting". Proceeding to the second category, "The chromatic synthesis and color symbolism, the most ambivalent element of the painting's artistic integrity demanded to take its place here. From the first sight, the golden background did not seem to match with the general character of the painting. Borchert agreed that the golden background "does not look authentic".⁵³ Apart from the background, the choice of colors in a religious scene is

⁵² **Erwin Panofsky** (1892 -1968) was a German art historian who emigrated to America and remains highly influential in the modern academic study of iconography. Panofsky became particularly well-known for his studies of symbols and iconography within works of art. Panofsky's work with what he called "hidden" or "disguised" symbolism are still very much influential in the study and understanding of Northern Renaissance Art. http://en.wikipedia.org/wiki/Erwin_Panofsky

⁵³ E-mail communication with Till-Holger Borchert (19th March 2010).

interesting to analyze. Color symbolism and the way that this is expressed are hard to ignore in religious paintings.

This system of analysis also coincides with the theory of the great renaissance painter *Piero della Francesca* (c1415-1492) about the parts that a painting is consisted of. In the introduction of his perspective treatise (*On perspective for painting*) Piero della Francesca mentions that:

*“Painting has three principal parts, which we say are drawing (disegno), proportion (commensuratio) and coloring (colorare). Drawing we understand as meaning outlines and contours contained in things. Proportion we say is these outlines and contours positioned in proportion in their places. Coloring we mean as giving the colors as they are shown in the things, light and dark according as the light makes them vary...”*⁵⁴

From these three categories it is easier to analyze the painting through “The geometrical structure and perspective” and “The chromatic synthesis and color symbolization” because in religious and Renaissance art this elements have a rather clear position. What is more difficult to apply is the “Lines and forms” because these elements are hard to compare with any other existing source. To make this statement clearer, the gold background was applied in specific periods in the history of art as well as in specific kinds of art. The limits of its use are clear at least up to a point and for that reason the examination of the painting under this scope could probably provide the thesis with some important facts. On the other hand, to try to compare and analyze stylistically the lines and forms of a painting in a sufficient degree is hard and demands high art historical expertise and experience.

4.1 *Pietà or Lamentation?*

Norum painting belongs thematically to religious painting; however, there is no evidence about its specific *function* in the place that it was originally intended to be a part of. The word *function* refers to religious art’s different purposes of use, such as decorative or devotional. In Potsdam the painting obviously had a decorative character –it was placed above a door in the “Blue room”- but if it was placed somewhere else before –as for example in a church- this it is hard to know. However, even if the painting was in the interior of a church that does not mean that it would necessarily have had a devotional character.

On the other hand, except for the unknown initial function of the painting, information about its function can be drawn based on the iconographical category that this belongs to. The scene of the painting is taking place after the Deposition of the Christ from the cross. Because there is no iconographical element in the scene –some grave element– that refers to Entombment, the scene is depicting an event before it. In the art history there are two iconographical types that take place between the events mentioned above: The *Pietà* (from Latin *Pietas* (=pity) and the *Lamentation*. It is generally accepted that the

⁵⁴ Field, J.V. (1997), p.81

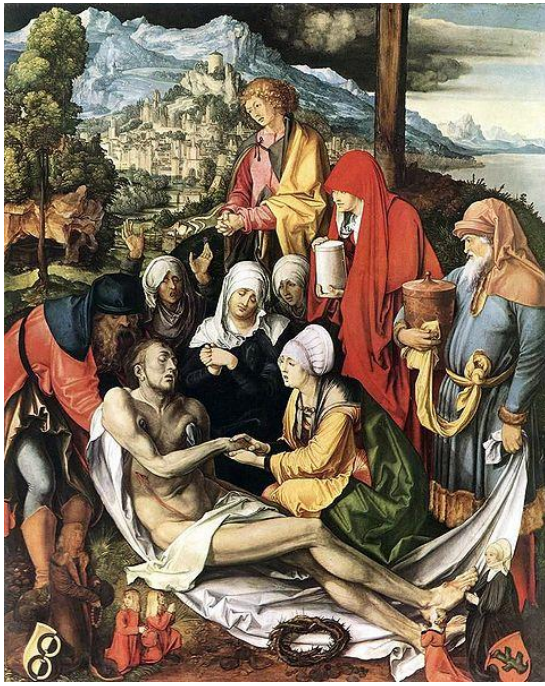


Fig. 16. Albrecht Dürer, *The Lamentation of Christ* (1500-1503), Oil on panel, 151x121cm, (Alte Pinakothek, Munich)

theme of Pietà depicts Mary, the mother of Christ, sorrowing by herself for her son's death while she holds/embraces him.⁵⁵ The most typical and well-known example of Pietà is the one made by Michelangelo, the sculpture now placed in the Basilica of San Pietro in Vatican. On the other hand, the Lamentation is generally accepted to be the scene that includes many more sorrowing historical persons than Mary alone (here they are also depicted John the Evangelist, Mary Magdalena, Joseph of Arimathea, Nicodemus and the holy women (fig.16)).⁵⁶ Nevertheless, after a detailed review of rather extended bibliography I personally realized that art historians are not consistent upon the division of the two subjects in all the cases. In the following passages I intend to make clearer the background of each iconographical type.

Finally, the iconographical type of the Norum painting will be commented –in which possible category it belongs and how the choice has been made.

The theme of Pietà draws upon the human relationship between Christ and his mother. Although no mention is made of this theme in the Gospels, its first expressions reach back through twelfth century German religious poetry to the Roman Byzantine drama of the fourth century and to the pseudo-Nicodemian writings, although in the case of the Greek sources there is little evidence that they were known in the West.⁵⁷ The theme is also found in the mystical literature of the 13th and 14th centuries, the *Meditations* of Giovanni de Caulibus and the *Revelations of Saint Bridget* of Sweden.⁵⁸ It was the power of the ecstatic religious verse and meditations which called the Pietà theme into being.⁵⁹

Visually the Pietà had its origin not only in the Deposition and Entombment scenes of Italo-Byzantine art but also in symbolic representations of the Slaughter of the Innocents as reproduced in French manuscripts of the thirteenth century.⁶⁰

However, the theme of Pietà and the way that its representation was iconographically established in the world history of art, it leads us back to fourteenth century Germany (Andachtsbild⁶¹, Ger. devotional picture). One of the first extant examples is the Coburg

⁵⁵ Earls, I. (1987), p.228

⁵⁶ Hall, J. (1974), p.246

⁵⁷ Ford, J. (1939), p.6

⁵⁸ Hall, J. (1974), p.246

⁵⁹ Ford, J. (1939), p.6

⁶⁰ *ibid*

⁶¹ The most popular *Andachtsbilder* include scenes from the Passion- the Man of Sorrows, the Pietà, the Dead Christ in the Tomb, and some types of Crucifix, as well as the Sorrows of Mary, and Madonnas such as those of Humility, of Mercy, or the Virgo inter Virgines, Murray, P. (2004), p.17



Fig. 17. Coburg Pietà, 1360-70, Wood, (dimensions?) (Kunst sammlungen der Veste Coburg)

Vesperbild, which is thought to have been sculptured in the first half of the fourteenth century (fig.17).⁶²

As it is mentioned above, a Pietà, whether in painting or in sculpture, is most usually considered to be comprised by the sorrowing Virgin alone with her dead son's body on her lap. In that way a Pietà acquires a devotional⁶³ aspect which differentiates it from the theme of Lamentation, being comprised by a bigger number of historical persons and possessing a narrative and biblical character.⁶⁴ The persons present in the Lamentation are much the same as in the Deposition, principally the Virgin, St. John the Evangelist and Mary Magdalena. There may also be present the extended number of persons mentioned above. This distinction between the themes of Pietà and Lamentation may be rather apparent, but as it is already mentioned, art

historians have not been consistent in their description of the different cases. In fact, it is taken for granted that the iconographical scene including only Mary and the dead Christ is a Pietà and that the iconographical scene including the above extended number of figures is a Lamentation. However, the scene including only the four main persons, Mary, Christ, Mary Magdalena and St. John the Evangelist seems to belong to no certain category. The particular scene can be both named as a Pietà as well as a Lamentation. A characteristic example is the well-known *Pietà de Villeneuve-lès-Avignon*, where only the four main persons appear (fig.18). In the official site of the museum of Louvre the particular painting is being assigned as an "original interpretation of the theme of Pietà" ("*Une interprétation très originale du thème de la Pietà*") and on the same time it is mentioned that the theme of the painting is "associated to that of the Lamentation" ("*Il est associé ici à celui de la Lamentation*")⁶⁵. Other similar cases are; Jean Fouquet's Pietà, c1470-1480, (Nouans Cathedral, France), Pietro Perugino's Pietà, 1494-95 (Galleria degli Uffizi, Florence) and Moretto da Brescia's Pietà, 1520 (National Gallery of Art, Washington).

What is interesting to notice especially about the Pietà from Avignon is that no matter the number of persons and the iconographical category that the painting belongs, it

⁶² Ford, J. (1939), p.6

⁶³ The Pietà and it's devotional character is not the same as the one of an Icon. "An Icon is to be venerated as a prototype of its original, whereas the Pietà is a stimulus to devotion, and, because of its flexible iconography, developed into narrative cycles, whereas the icon remained almost unchanged for centuries". Murray, P. (2004), p.17

⁶⁴ Hall, J. (1974), p.246

⁶⁵ http://www.louvre.fr/llv/oeuvres/detail_notice.jsp?CONTENT%3C%3Ecnt_id=10134198673237190&CURRENT_LLIV_NOTICE%3C%3Ecnt_id=10134198673237190&FOLDER%3C%3Efolder_id=9852723696500815&fromDept=true&baseIndex=2

has a strong devotional and meditative character based on compositional, technical and color elements.



Fig. 18. Pietà de Villeneuve-lès Avignon, ca 1455, Tempera on wood, 162x218 cm, (Musée du Louvre, Paris)



Fig. 19. Peter Paul Rubens, *The Lamentation I*, (1614), Oil on wood, 41x53 cm, Kunsthistorisches Museum, Vienna. Comparing the *Avignon Pietà* with the *Lamentation* by Rubens it is obvious that the distinction between the two iconographical subjects is not necessarily based on their number of persons. It is mostly the way that the subjects are represented and their devotional character that determine the distinction between the two subjects.

Now concerning the Norum painting, based on the prevailing art historical distinction between the Pietà and the Lamentation, the painting does with greater certainty belong to the second type. The above cases of famous Pietàs, such as the *Avignon Pietà*, have been established in the world history of art with this iconographical name instead of Lamentation, for one reason or another. Yet, Norum painting is comprised by the four main characters, it does not have a strong devotional character –at least compared with the

Avignon Pietà-, it is unknown to the public and until now it has not been mentioned or described in any formal publication. All this individual elements lead to the conclusion that the assignment of the painting as a Lamentation is the safest choice –in any case in the frame of this particular Master thesis.

4.2 *''The Lamentation of Christ''* through an iconographical and stylistic perspective in the work of Lucas Cranach the Elder and in the Norum painting

Religious subjects occupy a big number of the works of Cranach. Among them the most favorable are the numerous depictions of Saints and Biblical events and from the life of Christ in particular, the depictions of ''Virgin and Child''. Subjects with less big frequency belong to the categories of ''Crucifixion'', ''Christ as the man of sorrows'' and finally ''The Lamentation of Christ''. In order to get a clear view about the number of the Lamentation scenes it should be examined most of the available catalogues and books for the particular artist.⁶⁶ This is obviously not possible because even if Cranach's oeuvre has been catalogued numerous times there are probably works that remain unknown or works that have not been attributed with great safety. A fact that helps the investigation is that there are no copies in the Cranach output, no workshop replicas in the narrower sense, which is actually a remarkable fact.⁶⁷ Jacob Rosenberg in his catalogue ''The paintings of Cranach'' states that:

''The kind of mechanical duplication that was becoming common in the Netherlands at this time, probably as the result of the great export trade in devotional panels, seems to have been frowned upon in Wittenberg. When we do come across a faithful copy of a Cranach painting, we can say with virtual certainty that it was made outside his studio''.⁶⁸

In the same catalogue from 1978 I came across three Lamentations of Lucas Cranach the Elder. These Lamentations are dating c1515 (fig.20,21), c1515-16 (fig.24) and c1518 (fig.25) and constitute the Lamentation scenes of the particular catalogue. The catalogue is rather thorough and detailed, thus not complete. It is based in referring to an extensive, representative number of works of Cranach chosen by the author's subjective understanding of his art. A complete catalogue of works by Cranach is nowadays under development in the National Museum of Berlin (Staatliche Museen zu Berlin).⁶⁹

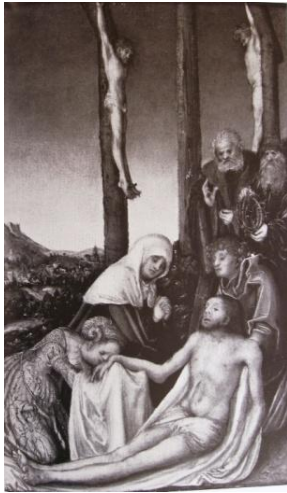
About the three Lamentations referred by Jacob Rosenberg, all of them have the character of Lamentation scenes with a narrative character and a big number of figures (more figures than the basic composition of Christ, Mary, Mary Magdalena and John the Evangelist). In the one from c1515-16 there are also depicted the painting's donors. The

⁶⁶ Heydenreich, G. (2007), Schuchardt, G. (1994), Stepanov, A. (1997), Rosenberg, J. (1978), Proske, M. (2007)

⁶⁷ Rosenberg, J. (1978), p.25

⁶⁸ *ibid*

⁶⁹ <http://smb.museum/smb/sammlungen/details.php?lang=en&objID=5&n=4&p=7>



Figures 20-23. Lucas Cranach the Elder. (20)Top left: The Lamentation of Christ, c1515, Oil on wood, 29x17.5cm, Boston, Museum of Fine arts. (21) Top right: Detail from fig.20. (22) Bottom left: St Francis receiving the stigmata, c1502, Oil on wood, 86.8x47.5cm, Akademie der Bildenden Künste, Gemäldegalerie, Vienna. (23) Botttom right: Detail from fig.22

number of persons is a first distinction between Cranach's Lamentations and the Norum painting's Lamentation: the Norum painting has a much less narrative character and focuses particularly on Mary's lament. Another characteristic element is the higher level of expressiveness that the viewer meets in Cranach's Lamentations than that of Norum. In all the three Cranach Lamentations the sorrow of the figures -and especially the sorrow of the main female figures of the drama, the Virgin and Mary Magdalena- is expressed not only in the expression of their faces but mainly in their body movement. In the Cranach Lamentation from c1515 Mary Magdalena mourns by holding Christ's right hand and kisses its

wounds. The drama is quite intense here, the Virgin seems to strive not to burst in tears and the way that she "folds" together the fingers of her hands is a sign of her psychic agony. The Christ is also depicted with harsh face characteristics, almost grotesque, reminding strongly Cranach's "St Francis receiving the Stigmata" (c1500) (fig.22,23). Both the face and the body of the ascetic and Christ are stressing some common way of thinking. Alexander Stepanov in his book "*Lucas Cranach the Elder*" quotes about Cranach's Francis of Assisi:

"His Francis of Assisi is huge with a low forehead and prominent cheekbones, heavy arms and weather-beaten skin. It seems that anyone who dared to approach him would be reduced to ashes by his love of God...Lucas [sic] rejected the tradition that the saint's noble origin and spiritual purity should be stressed by a fine physique and regular features...".⁷⁰

⁷⁰ Stepanov, A. (1997), p.13



Fig. 24. Lucas Cranach the Elder, *The Lamentation of Christ*, c1515-16, Oil on wood-transferred on canvas, 165x123cm, Szépművészeti Muzéum, Budapest.

This description could in a high degree describe Cranach's Lamentation from c1515 and moreover highlight its unfamiliarity with the Northern painting. Especially the way that the hands of Christ are displayed in Cranach's Lamentation by falling down heavy and loosely and in a manneristic way, they show the physical and spiritual suffering that he went through. In the Northern painting the figures are presented in a more stylized and strict way, the faces have idealistic features and the mourners are very restrained in their expressions. No gestures of desperation or intense psychic agony are met here. Moreover, the only signs of the suffering of Christ are visible in his head –



Fig. 25. Lucas Cranach the Elder, *The Lamentation of Christ*, c1518, Oil on wood, 77x96cm, The format suggests a predella (Detroit Institute of Arts, Detroit, Michigan)



Fig. 26. Lucas Cranach the Elder, *The Lamentation of Christ*, c1538, Oil on wood, 60.3x40.0cm, Museum of Fine Arts, Boston Massachusetts, USA.

blood from the crown of thorns- and in the right side of his chest –a tiny wound. The interpretation of the subject is contemplative, inviting compassionate reflection rather than seeking to inspire strong empathetic feelings in the viewer.⁷¹

Continuing with the other two Lamentations of Cranach from c1515-16 and c1518, the emotional tension is rather equivalent with the Lamentation from c1515; the mourners show their deep sorrow with their body gestures. In the one from c1515-16 the Virgin holds firmly and close to her the face of her son and once again she locks her fingers together around his neck. Proceeding to the third Lamentation from c1518 the sorrow and the desperation are clearly depicted in the figures, with the Virgin mourning peacefully and holding her hands together and Mary Magdalena bursting in cries and folding her hands in an unnatural way, thus of high expressiveness. The distinction between these two Lamentations with the Norum painting is based as is already mentioned in the emotional level of the drama. Finally, two other Lamentations by Cranach were detected.



Fig. 27 (left): Lucas Cranach the Elder, *Design for an Altarpiece*, c.1520. Paper, 39.3x24.7cm, Staatliche Museen zu Berlin. **Fig. 28** (down): Detail of fig.27



⁷¹ Finaldi, G. (2000), p.130

The one is the Lamentation scene from the *Design for an Altarpiece* which is a drawing on paper dating around 1520 (fig.27). The other Lamentation was detected through an Internet search (fig.26). This Lamentation (1538) exists in at least four sites⁷² and is nowadays in the ‘‘Museum of Fine Arts’’ (Boston, USA). In both of these works the same general characteristics as in the above Lamentations are met.

The Norum painting is not only disparate from Cranach’s Lamentations in an iconographical level; it is also different in terms of form and style. However, this analysis demands a profound study of the work of the great master being in no way limited to his Lamentation scenes.

4.3 Further studies: stylistic perspectives in relation to Renaissance and to theological dimensions

4.3.1 *The geometrical structure and perspective of the scene of the painting*

The Lamentation scene of Norum painting is organised in a rather strict geometrical structure. With the term *geometrical structure* it is meant to be specified the geometrical forms and their relationship with each other under the scope of the religious theme of the Lamentation of Christ as well as through the Renaissance ideal.

To start with the scale of the figures and their relationship to naturalism in art, until the thirteenth century ‘‘everyone would have been [sic] agreed that the function of art was not naturalistic representation, but rather the expression of spiritual power’’.⁷³ By then the importance of a person was portrayed in art through size, rather than an attempt for scientific naturalism.⁷⁴ Thus, Biblical figures and saints are depicted in unnatural geometric groups. A turning towards scientific naturalism starts at the end of the thirteenth century and onwards and this has its theological motivation in the teaching of Francis of Assisi (c. 1182-1226).⁷⁵ ‘‘St Francis saw study of the natural world as leading the soul to God, since God was its creator and ruler’’.⁷⁶ Moreover, the humanistic ideals based on the influence from the classical Greek antiquity play in Renaissance art a determining role.

Specifically about the Norum painting, this possesses Renaissance qualities such as geometrical perspective and naturalistic representation of its figures. The technique of *chiaroscuro* gives volume to the figures and makes them look naturalistic. Additionally, the construction of the synthesis in levels create the illusion of depth. By the placement of the body of Christ in a $\frac{3}{4}$ inclined position towards the viewer and the naturalistic use of light and shading, the painter manages to lend depth and space to the scene. The perspective of the ladder on the upper right of the picture is not naturalistic due to its

⁷² Two of the sites are:

<http://www.artmuseum.com.cn/makeOrderDetail.htm?number=PM025801&orderType=1&cid=161> and

<http://www.davidrumsey.com/amica/amico235164-22654.html>

⁷³ Field, J.V. (1997), p.7

⁷⁴ *ibid*

⁷⁵ *ibid*, p.9

⁷⁶ *ibid*

intense foreshortening as an optical illusion. The ladder seems to be too close to the figures and to the foreground to have such a foreshortening effect in the angle that it is placed. However, this optical illusion stresses the illusion of depth of the scene and the angles that the ladder's stairs are placed are leading towards the Lamentation scene. In a way the stairs seem to widen the space on the left part of the painting and they resemble beams that cast light on the scene.

Concerning the geometrical arrangement of the synthesis, in Renaissance art, mathematics and more specifically geometry and proportions play a significant role. From 1300 to 1650 a significant period for mathematics take place as it is gradually taking up a much more important role in the intellectual map.⁷⁷ Nevertheless, mathematics always had a prominent place in art, from ancient Egypt and ancient Greece up to nowadays. Actually the *golden ratio* (Φ) found by the Pythagoreans has widely applied in art through the centuries by contributing to harmonic proportions and it seems that the artist who drew the Norum painting was probably aware of it. By getting a closer look to the figures of the Lamentation scene, the heads of Mary, Christ and Mary Magdalena are arranged in such a way that they occupy the three angles of an isosceles triangle. This symmetry is not random and after applying the rule of the golden ratio it got evident that the heads of Christ and Mary Magdalena are placed on the upper horizontal golden section and the head of Mary is placed between the two vertical golden sections (Appendix 8). The golden ratio expressed algebraically is $AB/AC=AC/BC=\Phi$

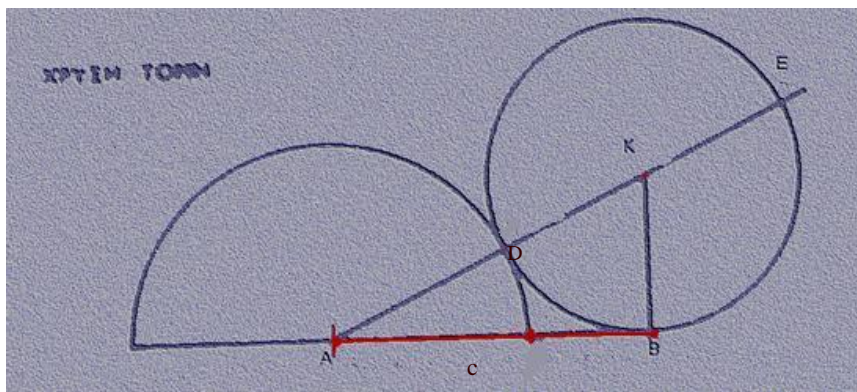


Fig. 29. Schematic representation for the calculation of the golden section. (<http://www.asxetos.gr/Default.aspx?tabId=274&c=47&aid=657>)

The calculation of the golden section in the Norum painting was carried out both in the height and the width of the painting. By calculating the width, $AB=73.7$. $BK=AB/2$. The drawn circle with centre K and radius BK intersects the straight line AK in the point D. Then, another circle with centre A and radius AD was drawn. This circle intersects AB in the point C, which is actually the point that refers to the golden ratio's analogy. From C and with the help of a ruler, a vertical line was drawn. Additionally, its symmetrical AF was constructed (see Appendix 8), resulting to the Norum painting two vertical golden sections. The same process was applied to the height of the painting.

Going further, the scene is constructed in a strict geometrical pattern having as its main element the shape of the rhombus. A rhombus finds itself in central position in the scene and is determined on its upper triangular part from the heads of Christ-Mary-Mary Magdalena, and it's down triangular part by the outline of the diagonally placed shroud of

⁷⁷ Field, J.V (1997), p.1

Christ and its symmetrical part being fixed by Mary Magdalena's dress. This rhombus pattern is further accentuated by numerous parallels in all its sides: On the upper left part, John and his figure's posture is parallel to the upper left quarter of the above mentioned rhombus. Symmetrically, he is counterbalancing the presence of the escalator. The geometry of the painting is so strict that these two elements –John's figure and the escalator- are interdependent in lending balance to the upper part of the painting. Without one of them the scene would probably look "unbalanced". To make this more clear, with the addition of parallels to all the quarters of the rhombus the painter achieves to gradually lead the focus of attention from outside to inside, towards the heart of the scene, the lament of Mary for her dead son: four additional parallels are accentuating the lower left part of the rhombus, the contour of the shroud. In the lower right part there is also a parallel fixed by the cloak of Mary Magdalena. To complete this description, the pole of the cross is placed directly on the vertical central axis of the painting. Its two parallel sides are being continued downwards by the straight contour lines of the veil of Mary. Additionally, the pole of the cross and Mary are placed between the two vertical golden sections, stressing once again the subject of the painting, the lament of Mary for the death of her son.

4.3.2 *The chromatic synthesis of the painting*

Colors: In Christian art there were always conventions about the use and symbolism of colors. In Norum painting color symbolism is expressed through the clothing of the figures and the color of the background.

Starting from the figures and from left to right, John the Evangelist is dressed in a green, long robe and he bears above this a red mantle. In religious iconography John is often dressed in green, the color of the "selected", as John was Christ's beloved disciple.⁷⁸ Red is the color of fire, blood and love and it can be God's color by symbolizing love.⁷⁹

Christ has a white loincloth and his body is placed on a white cloth/shroud. White refers to purity and holiness.⁸⁰

The Virgin has a deep red-brown robe and a white veil covering her head and upper part of the robe. The meaning of white and red are already mentioned above. However, Mary's robe has a much deeper hue than the clothes of John and Mary Magdalena, presumably implying to her deep love for her son. A blue cloak is finally covering her back and shoulders. In religious iconography the Virgin's cloak is usually in blue. Blue is the color of the sky and the sea and is a reminder of heaven, the divine element and faith.⁸¹ It also symbolizes the truth of God and his eternal existence which will remain forever a sign for the human immortality.⁸² It is the color of Jesus and Mary and together with white and red constitutes the colors of God.⁸³

Mary Magdalena is often dressed in red. Here, she has a red patterned dress with a green belt upon a green inner garment. Finally above the dress she wears a light violet

⁷⁸ Dahlby, F. (1977), p.212

⁷⁹ *ibid*

⁸⁰ *ibid*

⁸¹ *ibid*

⁸² Wettre, Å. (2006), p.130

⁸³ Dahlby, F. (1977), p.212



Fig. 30. Gerard David (Netherlandish, c1460-1523), *Lamentation over the Body of Christ*, c1500, Oil on wood, 55.1x62.8cm (Mr. and Mrs. Martin A. Ryerson Collection)

cloak. It is interesting to notice that the symmetry in the synthesis is accompanied by a chromatic symmetry. The figures of Christ and Mary are placed diagonally and parallel to each other and are enclosed by the vertically placed figures of John on the upper left and Mary Magdalena's on the lower right. Mary Magdalena is dressed in red and green as John is.

The combination of red, green and blue is usually met in the art of the Renaissance, as in the works of the early Netherlandish Gerard David (c1460–1523) (fig.30) and is associated with the theory of complementary

colors (green is the complementary color of red). Leon Batista Alberti (1404-1472) in his treatise *Della Pittura* (On painting, 1436)⁸⁴ writes about the complementary colors: “..there is a certain friendship of colors so that one joined with another gives dignity and grace”⁸⁵.

Gold: “Gold, in the form of gold leaf, was available and extremely used up to the fifteenth century to make altarpieces and panels resemble opulent artefacts made out of the solid metal”⁸⁶. About the symbolization of gold, this refers to the eternal light, God’s grandeur and power as well as divine greatness and heaven.⁸⁷ That is why gold has been usually applied in the background of images of the holy persons.⁸⁸ The golden background reaches the highlight of its use within the Orthodox icons of the Eastern Church and the medieval western religious art. The unnatural geometric arrangement of the Biblical figures is accompanied by an abstract background constructed by golden leaves. Concentrating on western art, the golden background is most prominently used in altarpieces and panel paintings with a strong byzantine influence as in the works of the Florentines Cimabue (c. 1240-1302?), Giotto di Bondone (c.1267-1337) and the Sienese Simone Martini (c.1284-1344). Going northern, the German Stephan Lochner (c.1410-1451) (fig.31) is one of the Cologne school’s most important representatives who widely applied gold backgrounds in his religious paintings.⁸⁹ Actually the golden background is characteristic for the Cologne

⁸⁴ *Della Pittura* was the first important theoretical treatise on painting of the Italian Renaissance, anticipated the new order in art –an art in which human hierarchies as well as religious ones began to assume significance in the painter’s depiction of the world. Alberti’s book was the first modern analytical study of painting –a treatise on the theory of art, not an instruction manual. Alberti explored the idea of colors that enhance each other when placed together –a phenomenon that, centuries later, developed into a theory of complimentary colors. Bomford, D. (2000), pp.42-43

⁸⁵ *ibid*, pp.33-34

⁸⁶ *ibid*

⁸⁷ Dahlby, F. (1977), p.213

⁸⁸ Dahlby, F. (1977), p.213

⁸⁹ Stukenbrock, C. (2000), p.552, www.wga.hu

school.⁹⁰ In Norum church's archives it is presumed that the painting could be a work from the Cologne school without juxtaposing any documentation facts (see part 3.1). It is here suitable to hypothesize that the wide use of golden backgrounds in the Cologne school was the major influence for the archival information stated in the inventories of Norum church.⁹¹



Fig. 31. Stephan Lochner, Adoration of the Magi, c. 1440, mixed technique on wood, 260x185cm, Cathedral, Cologne.

By looking closer to the oeuvre of Lochner, he combines the German Gothic style with influences from the Flemish painters of his time, presenting a scene with strong naturalistic elements, brilliant colors and intense focus on detail.⁹² Although a direct relation with the Norum painting cannot be expressed, a possible connection cannot be excluded either. Furthermore, the version that Norum painting can be a later copy has also to be taken under consideration.

Now going back to the gold background, David Bomford

mentions that the use of gold was not successful in representing golden items in a "naturalistic" setting.⁹³ Norum painting has in that way a naturalistic dimension –based on the scale and form of the figures and the geometrical perspective of the whole scene, and a golden background with its flat character seems rather incompatible. It is important to notice that gold leaves shining on a picture surface reflect the real light present in the viewer's space –not the imaginary light within the painting- and objects represented by it often appear unconvincing.⁹⁴ Moreover, during the Renaissance the use of gold was limited in comparison to the medieval art. Now, the humanistic ideals are applied not only in the arrangement and form of the figures of a painting but in the backgrounds as well, aiming in depicting the natural world as naturalistic as possible. In Renaissance works gold is preferred in emphasizing details such as haloes rather than covering the whole background of a panel painting. Moreover, painters instead of gold would now prefer to use yellow paint –with carefully positioned lights, shadows and reflections- for rendering a convincing illusion.⁹⁵

None of the Cranach Lamentations mentioned in the previous part bears a gold background. Actually the gold background is unusual in his works. In his workshop the use of gold was restricted in accentuating details such as the saints' haloes (fig.22). This is one

⁹⁰ Stukenbrock, C. (2000), p.552, www.wga.hu

⁹¹ Inventariebok Norumkyrka, 1962-, N:3/Norum Forsamlingen, Documentation-Inventarier, 1980, N:8

⁹² Stukenbrock, C. (2000), p.552

⁹³ Bomford, D. (2000), p.10

⁹⁴ *ibid*, pp.10-11

⁹⁵ *ibid*, p.10

more convincing fact pointing to the irrelevant character of the Norum painting with the oeuvre of Cranach.

4.4 Synopsis and conclusions

The Norum painting is informally “stamped” with the hypothesis that it may be a painting from the workshop of Lucas Cranach the Elder. This opinion is mainly expressed by Christina Grimpe, descendant of Karl Theodor Friedrichs, as well as from the people of the parish of Norum church. Nevertheless, no direct similarity with the oeuvre of Cranach can be distinguished. On the other hand, the geographical closeness of Potsdam, where the painting was until 1949, with Wittenberg where Cranach was active (Potsdam is in Brandenburg while Wittenberg is in Saxony-Anhalt) may have influenced this attribution hypothesis expressed by the Norum parish and its people. However, two other attribution versions exist as well: the one version is formally quoted in Norum church’s archives and it mentions a possible attribution to Cologne school. However, this archival information is deprived of sufficient documentation evidence. The final version is established by the art historical expertise (Björn Fredlund, Till-Holger Borchert) and deviates from the possibility that the painting is German. It specifically points out towards Antwerp and the 16th-17th centuries. Borchert also proposed the possibility that the painting’s composition is from the early Flemish 16th century while the execution seems to be later, probably from the late 16th century or even early 17th century. That the painting can be a copy is thus a possible option.

The painting is following the religious iconography for the subject “The Lamentation of Christ”. It has the narrative character of a Lamentation instead of the devotional character of a Pietà. Its proportions and colors are following the Renaissance ideal for harmony in accordance to the Classical standards. The scene is geometrically organized in strict patterns and even its colors follow the Renaissance ideals for symmetry and balance. Moreover, geometrical perspective and naturalistic representation are stressing the depth and space of the whole scene. The above facts contrast in a profound basis with the golden background of the painting and its flat, abstract character –which is actually better expressed in the medieval art ideal.

Lamentation scenes were common in Renaissance art; however, they were a subject not particularly favored by Cranach. There have been (preliminary) detected five Cranach Lamentation scenes, which are crowded with historical personalities and are characterized by a certain degree of emotional tension. This is an important feature that characterizes the oeuvre of Cranach and subsequently constitute a distinguishing factor between this and the Norum painting, which actually has a more “noble” character without clearly pronounced expressiveness.

The golden background constitutes an element in the painting that can play a decisive role for its categorization. It does not seem to be authentic but on the other hand its authenticity cannot be excluded –at least for the moment. Even if the use of gold background was limited in the Renaissance there have been examples that prove its application. Cranach applied rarely gold backgrounds in his paintings and none of the

detected Lamentations by him bears one. According to Till-Holger Borchert the painting looks *certainly* Flemish but as it is derived from our dialogue, gold background was not a usual element in the Flemish art of the 16th-17th centuries. By carrying out further research it became evident that gold backgrounds were favored by the Cologne school during the 15th century. A similarity with Stephan Lochner, important representative of the Cologne school who was influenced by both the Gothic German art and the Flemish art of his era does not seem to be completely irrelevant. However, the possibility of the Norum painting being a copy from that period seems to be a more realistic option; the only Gothic/medieval element of the Norum painting is the gold background. Borchert's proposition that the painting *certainly* looks Flemish and his further allegation that there seems to be a slight similarity with the faces in the oeuvre of Rubens, have a strong basis that cannot be ignored. With other words, his hypothesis that the composition is from the early 16th century (Renaissance) while the execution looks like it was carried out a century later –late 16th, early 17th century where Barock elements start to be prominent, has a realistic basis.

Until now it is reached an overall acquaintance with the Norum painting and some basic guidelines about the investigation of its origin are submitted. However, this has been a preliminary study. The examination of material and technology/technique of the painting that follow in the next chapter can provide the preliminary assumptions with additional supporting facts, or on the contrary, give a new turn to the investigation process.

5. The tools of examination and analysis – Material and technique documentation

Proceeding with the material and technique documentation the goal is to derive as much information as possible from the painting in its tangible form. The documentation is detailed and follows the different parts of the painting in the order that they were applied during the creation of the specific work of art. These parts are the wood of the panel, the ground layer/layers, the underdrawing, the gilding, the paint layers and the varnish. The documentation is as thorough as possible, based on the available tools and methods of analysis. In each part a comparison with the oeuvre of Lucas Cranach the Elder is taking place. In some parts the comparison is substantially developed, in other parts it is more basic and even more abstract. The process was determined by the available equipment for qualitative analysis and moreover by the lack of insight in the whole oeuvre of Cranach as well as the limitations for a Master thesis. The acquired results are weighted and evaluated. During the whole text it is taken under consideration the problem background and the results acquired in the previous chapters of the thesis.

In the last part of the chapter it is being analyzed the technological characteristics of the cradle of the painting. This part has the character of provenance studies and it is not connected with the painting's origin.

5.1 Description and documentation of the choice and application of the investigation methods

The choice of investigation methods and their application is documented in this part. All comparisons in this chapter with the oeuvre of Lucas Cranach the Elder are based on Gunnar Heydenreich's book *Lucas Cranach the Elder: Painting materials, techniques and workshop practice* (2007). This book constitutes a detailed manual about the material and technical features of the artistic processes in the paintings of the great master. The book aims in covering the maximum of the range of idiosyncrasies in the panel paintings of Cranach and it presents comparative studies of a big number of his works. Heydenreich's book is a sufficient tool for achieving the comparison with the Norum painting and complies adequately with the thesis's academic goals.

Description of the investigation methods:

1. Examination in the visual spectra –unaided eye examination and digital photographic documentation (Olympus Camedia C-7070). The examination and documentation took place in the Art Conservation Private Company "K-Konservator" in Gothenburg, with the constant support of the professional conservators Leif Berg and David Edvardson.
2. Stereomicroscopic examination (Leica M651). The examination took place in the Art Conservation Private Company "K-Konservator" with the help of Leif Berg and David Edvardson.

3. Ultraviolet (UV) fluorescence/Ultraviolet reflection: Photographical documentation with *Artist* multispectral digital imaging camera by *Art Innovation*.⁹⁶ The camera belongs to the Department of Conservation of the Gothenburg University. The process was carried out with the help of the PhD student Ingalill Nyström, Department of Conservation. The limitation of the camera is the size of the acquired pictures. Due to this fact the Norum painting had to be divided in 21 parts/photographs (c 28x17). Each photograph should overlap the borders of its adjacent photographs. About the UV examination, the equipment has a 30W Flood light bulb, which corresponds to wavelengths between 320-400nm –UV-A lighting.⁹⁷
4. Infrared (IR) reflectography: Photographical documentation with *Artist* multispectral digital imaging camera by *Art Innovation*. The process was carried out with the help of the PhD student Ingalill Nyström, Department of Conservation. The photographs were taken with the IR2 band, which corresponds to wavelengths between 1000-1100nm.⁹⁸
5. X-rays radiation: Industriröntgen/Scanray DOB-140, The process was conducted in the conservation company *Studio Västsvensk Konservering*, in Gothenburg, with the help of the conservator of archaeological objects, Carin Petersson. Experimental conditions and exposition: Two experimental samples were created by varying the exposition time. The exposition conditions were the same in both samples, except for the time: Distance: 85cm, mA:5, Kvp:30 (for objects such as panel paintings is required voltage between approximately 30 and 80 kV⁹⁹), Time: 2min (first exposition), 4min (second exposition). The X-radiography from the first exposition was rather dull without clearly discernible contours. Much of the desirable information was still concealed. The second exposition gave on the other hand much better results, discernable characteristics but the contrast was high, with almost complete black and transparent areas. Much information was concealed in this case also. The desirable X-radiography should provide a range of contrast revealing even the most subtle details. The contrast had actually to be high so as the information provided by the different layers to be discernible. However, the middle gray tones were of equal importance by revealing the particular characteristics of the painter's technique and the formation of the brushstrokes. The final exposition time lasted 3.5min, aiming at a quite "softer" contrast than in the second exposition. The results were satisfying.
6. Detaching of samples from the painting, preparation of cross-sections and examination with an optical microscope (Nikon eclipse LV100). The process was carried out in the Art Conservation Private Company "*K-Konservator*" in Gothenburg, with the constant support of Leif Berg and David Edvardson. Five samples were detached from the already delaminated areas of the painting or from its edges (table 1). An attempt to detach a sixth sample from the Virgin's blue cloak

⁹⁶ Art Innovation: <http://www.art-innovation.nl/index/ARTIST>

⁹⁷ Bergmark, R. (1987), p.100

⁹⁸ http://www.art-innovation.nl/fckfiles/file/Artist/Leaflet_Artist_2009-I_c.pdf

⁹⁹ Αλεξοπούλου-Αγορανού Α. (1993), p.211

was made but the process was not completed due to the layer's brittleness. The samples were carefully detached with a scalpel and did not exceed the dimensions of 1mm x 1mm. The parish of Norum church gave its unanimous consent to proceed with this action. The samples were embedded in epoxy resin, and then they were polished until they would reach the desirable surface breadth, revealing the most of the stratification of the cross-sections. The observations were carried out in a magnification of 40x. In the table that follows the samples are systematically categorized;

Table 1. Samples

Sample naming	Color of the sample	Area that the sample was detached from (for exact localization see figure 35)	Figure number
A	Light grey	Lower part of Christ's carnation	47
B	Green	John the Evangelist's robe	48
C	Red	Mary Magdalena's dress	49
D	Gold	Gold background, edges of the painting	50
E	Gold	Gold background, central area of the painting	51
F (Unsuccessful sample)	Blue	The Virgin's cloak	Process not completed

What is possible to deduct from the applied methods: By starting the documentation with the wooden support, special attention is paid on the kind of wood that this is made of. The kind of wood that is used in a panel painting is generally based on the natural resources of the geographical area of the painter. In that way Germany and Flanders may have had different resources in wood supplies and subsequently Cranach may have used different kinds of wood in comparison to the Flemish painters. The equipment for the documentation of the kind of wood of the support is based on visual and stereomicroscopic examination in relation to comparison studies. No sample-taking was feasible to carry through. On the other hand and in a more advanced level, a dendrochronological examination applied for dating was not included in the general investigation plan for practical reasons. This is a preliminary, ground study of an unknown object, and the certification of the approximate chronology of the cutting of the wood and subsequently of the creation of the painting would be an overambitious goal. Dendrochronology demands extensive studies and resources not available in the particular case.

Further information can be obtained from the wooden support in the process of its documentation, nevertheless of no relation to the current comparison with Cranach. X-Radiography can be a useful tool in studying the morphological characteristics of the wooden support, since the direction and the shape of the wood grain are specific traits of the wood's nature.¹⁰⁰ Some trees have a distinctive wood grain that can be detected with the application of X-radiography and the comparison with X-ray images of several woods.¹⁰¹ Walnut, chestnut and oak have such a characteristic grain.¹⁰² Moreover, in the

¹⁰⁰ Pinna, D. (2009), p.23

¹⁰¹ *ibid*

particular case of the Norum painting, by examining the wood grain in the X-radiographic images it is possible to get information about the way that the planks have been cut, thus contributing to a more detailed documentation. Additional information about the technological characteristics of the construction method of the panel can be obtained with the observation of the X-radiographies. Here it is possible to observe the way that the planks were attached to each other. The existence of dowels (fig.33) or butterfly keys (fig.34) would be evident, however in the case of dowels their traces are possibly lost due to the thinning of the support. Finally, the preservation state of the wooden support is going to be recorded here.

The ground layer of the painting and its morphological features can be observed in cross-sectioned samples as part of their stratigraphy. The samples were taken in accordance to the areas that the examination of the ground and paint layer's stratigraphy and morphology would be useful for the investigation process. No material analysis was carried out [A technique that could be applied in this case and in further future studies is Gas Chromatography Mass Spectrometry (GC/MS). About the identification of the inorganic components it could be applied Raman micro-spectrometry or Fourier Transform Infrared Spectroscopy (FTIR)].

Underdrawing sketches can be of exceptional help during the examination process. By studying the way that Cranach employed the underdrawings in his works and by comparing the results with the underdrawing of the Norum painting valuable facts can be obtained. The underdrawing technique constitutes together with the brushwork two basic processes in the creative process of a work of art. Information about the specific style of an artist and its idiosyncrasies can aim towards an identification by acting as "fingerprints". The underdrawing and its technique (e.g. brush drawing) can be easily detected by IR reflectography if the overlapping pictorial layers are transparent to the IR radiation.¹⁰³ Concerning the materials of the underdrawing these are extremely difficult to identify.¹⁰⁴

Gilding's actual authenticity can be a determining factor in the comparison of the Norum painting with Cranach. X-ray radiation can hardly provide any results about whether there is an underlying layer or not, due to the fact that X-ray radiation is obstructed by all metal and mineral compounds. These areas are presented white in the X-radiographies. Nevertheless, sample-taking and observation of cross-sections with an optical microscope can possibly show evidence of underlying layers, obscured by the overlying gold.

The paint layers bear information about their layer elaboration, the materials used, the brushwork, any possible later interventions, the deterioration processes and other useful elements that can be decisive when the examination of a painting is conducted. The layer elaboration can be examined in the cross-sections of the samples. The layer elaboration can in a first place provide information about the way that the artist created the volume and visual effects in his paintings and in that way put them in a wider historical frame. However, it is not possible to detect any particular painting idiosyncrasies in the samples

¹⁰² Pinna, D. (2009), p.23

¹⁰³ *ibid*, pp.51-52

¹⁰⁴ *ibid*

of the Norum painting. There is no “signature style”¹⁰⁵ of a specific artist which could be used as a standard measure against which all data can be judged.

Concerning the comparison of the Norum painting with Cranach it is possible to draw some general conclusions about the elaboration and morphology of the paint layers. The comparison studies of the cross-sections with the X-radiographic images can also provide a partial documentation of the nature of the pigments. As a consequence the main goal in this part is to document the technique of the painting as detailed as possible.

Concerning the elaboration of the flesh tones, Cranach used to thoroughly elaborate them in numerous paint layers in order to render individual characteristics to his figures. Sample-taking from a flesh area would be thus useful for the comparison studies with the Norum painting (sample A). The only flesh area that a sample could be attached from was the area on the lower part of the Christ’s body, where the paint layer has been exfoliated.

Samples were also taken from the draperies (one from John the Evangelist’s green robe and one from Mary Magdalena’s red dress) so as to compare them with the technique that Cranach applied in the elaboration of his draperies. An attempt to take a sample from Madonna’s blue mantel was made but due to the brittle nature and thinness of the blue layer the action was canceled. The way that Madonna’s mantel was painted differs from the rest of the painting in the way that it consists of a thicker paint layer with a distinctively coarse surface. To investigate the nature and elaboration technique would be an advantage for the study of the painting; however, it is of greater importance to retain the painting’s current state of integrity. The areas employed with the particular painting technique create rough contours with their adjacent areas. Moreover, this paint layer has a mat and opaque character and it differs substantially from the technique of the rest of the layers which have a luminous and transparent effect (see part). On the other hand, by applying ultraviolet fluorescence the result would probably not carry any evidences. This layer is actually covered by the varnish layer and the UV light does not penetrate the varnish layer.

Finally, two samples were taken from the gold background. The reason for detaching two samples in the particular case is based on the ambiguous chronological application of the gold, and a more extended sample-taking from different areas was demanded, so as to get sufficient information for its characterization.

With the use of X-rays radiation the brushwork would be distinctively traced. A comparison with Cranach’s brushwork is possible to be carried through in this part. The artistic process, the spontaneity and the temperament of the artist characterize his brushwork and the X-radiographic image can reveal even its more subtle details. Pigments of organic origin have high transparency in the X-ray radiation and pigments of inorganic origin, containing heavy elements such as Ba, Hg, and Pb, show a high rate of X-ray absorption.¹⁰⁶ The absorption rate depends on the nature of the object, its volume and density, and mainly from the atomic number of the elements that it is comprised of. It also depends from the quality of the X-ray radiation; this refers to the wavelength that defines the penetration of the rays. The higher the absorption of X-ray radiation of an object, the more opaque this is displayed.¹⁰⁷ This object displays an X-radiography with light tones of

¹⁰⁵ Barrett, Stulik, (1995), p.6

¹⁰⁶ Αλεξοπούλου-Αγορανού, Α. (1993). p.207

¹⁰⁷ *ibid*, p.218

grey.¹⁰⁸ On the contrary, areas that leave the X-ray radiation to penetrate them, they are presented in the X-radiography as dark tones of grey.¹⁰⁹ About the absorption rate, pigments that present low absorption are pigments of organic origin or lakes. With middle absorption are the earth pigments and the dibasic copper acetate $\text{Cu}(\text{CH}_3\text{COO})_2 \cdot 2\text{Cu}(\text{OH})_2$, and with high absorption (H) are pigments containing lead (Pb) and quicksilver (Hg).¹¹⁰

An actual fact about the X-radiographic image is the study of the brushwork through the application of lead white. In the Norum painting lead white has been extensively used. Lead white has been used from the ancient times and it constitutes the white pigment that the old masters mostly used. Other kinds of white pigments such as zinc white and titanium white have been firstly suggested after 1782 and 1919 respectively.¹¹¹ Lead white, $2\text{PbCO}_3 \cdot \text{Pb}(\text{OH})_2$, has a very high absorption rate of the X-ray radiation.

The final layer that is documented is the varnish layer. In this part it is also included any eventual retouching that took place after the varnishing process was completed. Optical microscopy can be an aiding tool in detecting the state of originality of a varnish layer, however, in the specific case the magnification (40x) is too low for any results to be acquired. Further identification of the varnish layer could be conducted with Fourier Transform Infrared Spectroscopy (FTIR) (of original paint varnishes made of natural resins, plant exudates or insect secretions)¹¹² or with Gas Chromatography Mass Spectrometry (GC/MS).

By examining the Norum painting with ultraviolet fluorescence it can be detected any possible overpaintings that were created after the painting was varnished. The distinction can be apparent because the varnish layer fluoresces while the overpaintings are presented as dark spots. If there are any overpaintings under the varnish layer these can hardly be detected. Considering the pigments' different degree of fluorescence these could also be approximately identified if the varnish layer did not cover them. With the help of the UV fluorescence it can be further estimated the way that the varnish was applied and its preservation state. Finally, with the application of ultraviolet reflection it is possible to examine the painting's surface details, such as the impasto areas in contrast to thinner color layers. With the ultraviolet reflection the surface details are enhanced and that contributes to an additional aiding method in the study of a painting's technique.

¹⁰⁸ Αλεξοπούλου-Αγορανού, Α. (1993). p.218

¹⁰⁹ *ibid*

¹¹⁰ *ibid*

¹¹¹ Plesters, J. (1956), p.152

¹¹² Pinna, D. (2009), p.122

5.2 Technological characteristics of the wooden panel

5.2.1 Dimensions and construction method of the painting's panel

The dimensions of the panel are:

Table 2 Panel dimensions

Height	104.8 cm
Width	73.7 cm
Thickness	c.0.5 cm

The ratio of height to width is close to 4:3, which indicates a relation to the Pythagorean numbers.¹¹³ In the oeuvre of Lucas Cranach the Elder this ratio is often met, yet, there is an additional connection between the ratio's Pythagorean numbers and the humanistic thought which emerges from Cranach's art.¹¹⁴ The humanistic perspective of the Norum painting is not as eloquent as in the works of Cranach, but anyhow, it is hard to reach any conclusion because of the unknown background which possibly lies under the gold. Moreover, if the painting is a later copy then it is possible that its dimensions were not determined by the painter himself.

As a general overview about the dimensions of the panel paintings during the 16th and 17th centuries in northern Europe, these could vary significantly, depending on different factors such as the subject, function and cost of the painting as well as the requirements of the order. Measurements and proportions were chosen in relation to the interior that the panel would be fitted in.¹¹⁵ About the Norum painting, its original function is unknown; it could have served the function of being an independent altar painting but it could also be a part of a bigger altarpiece made up of different parts. In the *Design for an Altarpiece* (fig.27) by Cranach, as well as in the biggest number of altarpieces generally, the middle panel differs in format from the two side panels –they are narrower in width and elongated. So, it is more probable that if the Norum painting was a part of an altarpiece then it would constitute the central part. In the workshop of Lucas Cranach there were used standardized panel formats between 1520 and 1535.¹¹⁶ The Norum painting does not belong to any of the workshop's dimension categories (it is between the workshop's two dimension pairs; 82-90x55-63cm and 114-121x77-84cm).¹¹⁷

The panel consists of three planks glued together (fig.35). The planks vary slightly in width if compared with each other and moreover the width varies alongside the length of each separate plank (the measurements were taken from the reverse and from left to right):

¹¹³ Heydenreich, G. (2007), p.42

¹¹⁴ *ibid*

¹¹⁵ *ibid*, p.39

¹¹⁶ *ibid*, p.43

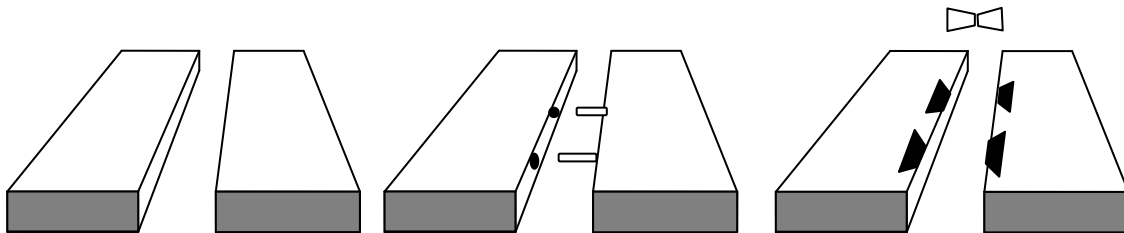
¹¹⁷ *ibid*

Table 3 Plank dimensions

	1 st plank	2 nd plank	3 rd plank
Width dimensions-upper part	23.9 cm	24.9 cm	24.8 cm
Width dimensions-down part	25.5 cm	24.5 cm	23.7 cm

According to Jørgen Wadum and his article: ‘*Historical Overview of Panel-Making Techniques in the Northern Countries*’, when the panel maker (15th-17th centuries) wanted to construct a bigger panel, then the planks that would be joined together could vary in width, although they were usually 25-29 cm wide.¹¹⁸ Wadum also suggests that the thickness of the panels was usually between 0.8 and 3cm.¹¹⁹ Finally, as a general practice, panels from the fifteenth and sixteenth centuries tend to be thicker than those from the seventeenth century.¹²⁰ In the case of the Norum painting it is no longer possible to know how thick the panel was from the beginning due to its thinning as a later intervention.

The way that the planks of the Norum panel are joined together is the one of the *butt join aligned with dowels* (fig.33), where the edges of the planks create right angles and are joined together by butting them together with the use of some glue and under pressure. Additional dowels would also render better reinforcement to the connections of the planks. The butt join in general, was the most common way of joining during the fifteenth and sixteenth centuries.¹²¹ Moreover, this was the technique favored by Cranach’s panel maker.¹²² The joining material in the planks of the Norum panel is some organic glue (most probably some animal glue -including casein).¹²³



Figures 32-34 Different types of joinery of planks. (32) Butt join, (33) Butt join aligned with dowels, (34) Butt join reinforced with butterfly keys on the front side of a panel (Schematic representation: Polyxeni Papadopoulou)

Three dowels were detected with the help of the X-radiography (fig.38-3,67,70). Two dowels in the connection of the first with the second plank and one dowel in the connection of the second with the third.¹²⁴ The cohesion of the planks is sufficient without any significant stability and degradation problems –although there has been a certain contraction and expansion process that led to partial loss of ground and paint layer in the joints of the planks. This is obvious mainly in the connection of the second with the third plank (front side) (fig.36,37). The qualitative characteristics and the actual function of the

¹¹⁸ Vadum, J. (1998), p154

¹¹⁹ *ibid*

¹²⁰ *ibid*, after Nicolaus, K. (1986)

¹²¹ Vadum, J. (1998), p.154

¹²² Heydenreich, G. (2007), p.62

¹²³ Until the first half of the 19th century animal glue and casein were the only adhesives used for joining together wood elements in order to achieve a secure bond. Pinna, D. (2009), p.12

¹²⁴ According to Jørgen Wadum, in the Northern countries the larger panels (75x110 cm) made of three planks would have three dowels in each join. Wadum, J. (1998), p. 155

cradle are going to be analyzed and developed in part 5.4. The wood of the panel and the cradle are preserved in a general good condition except for a rather limited biological attack detected in the cradle (fig.38-4, part 6.3.4).

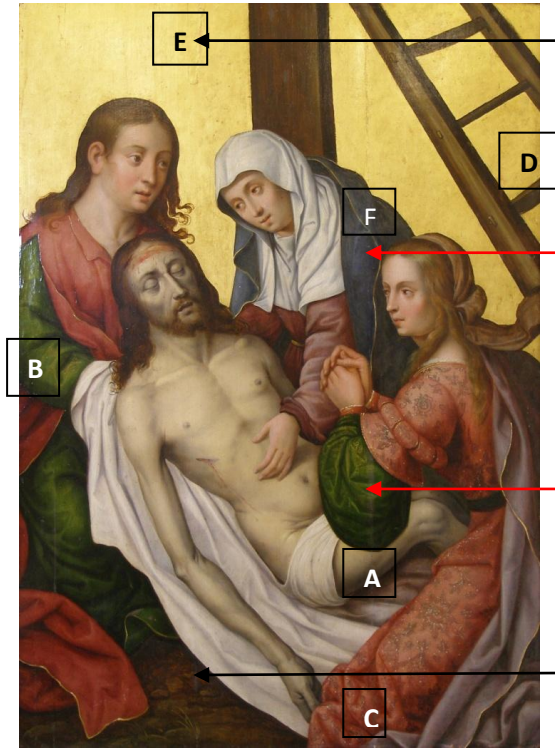


Fig. 35. The black arrows show the connection of the first with the second plank and the red arrows the connection of the second with the third. The letters A-F refer to the areas of the detached samples (table 1).

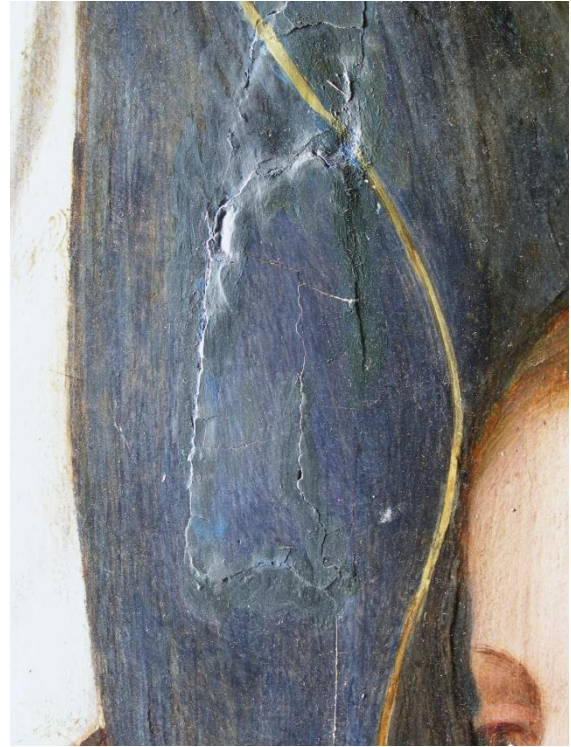


Fig. 36. Detail from the exfoliation of the ground and paint layers due to the crack created between the second and the third plank. The area was apparently overpainted. The exact point of the exfoliation is pointed out with the upper red arrow in figure 35 (Photo: Polyxeni Papadopoulou)

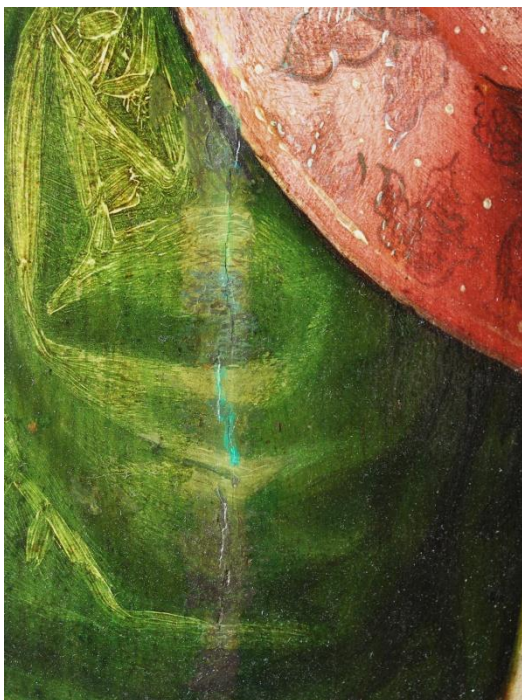


Fig. 37. Detail from the crack created between the second and the third plank. The light green retouching in the middle of the picture is clearly accentuated by its incompatible nuance with the rest of the background color of the painting. The exact area of the detail is pointed out with the lower red arrow in figure 35 (Photo: Polyxeni Papadopoulou)

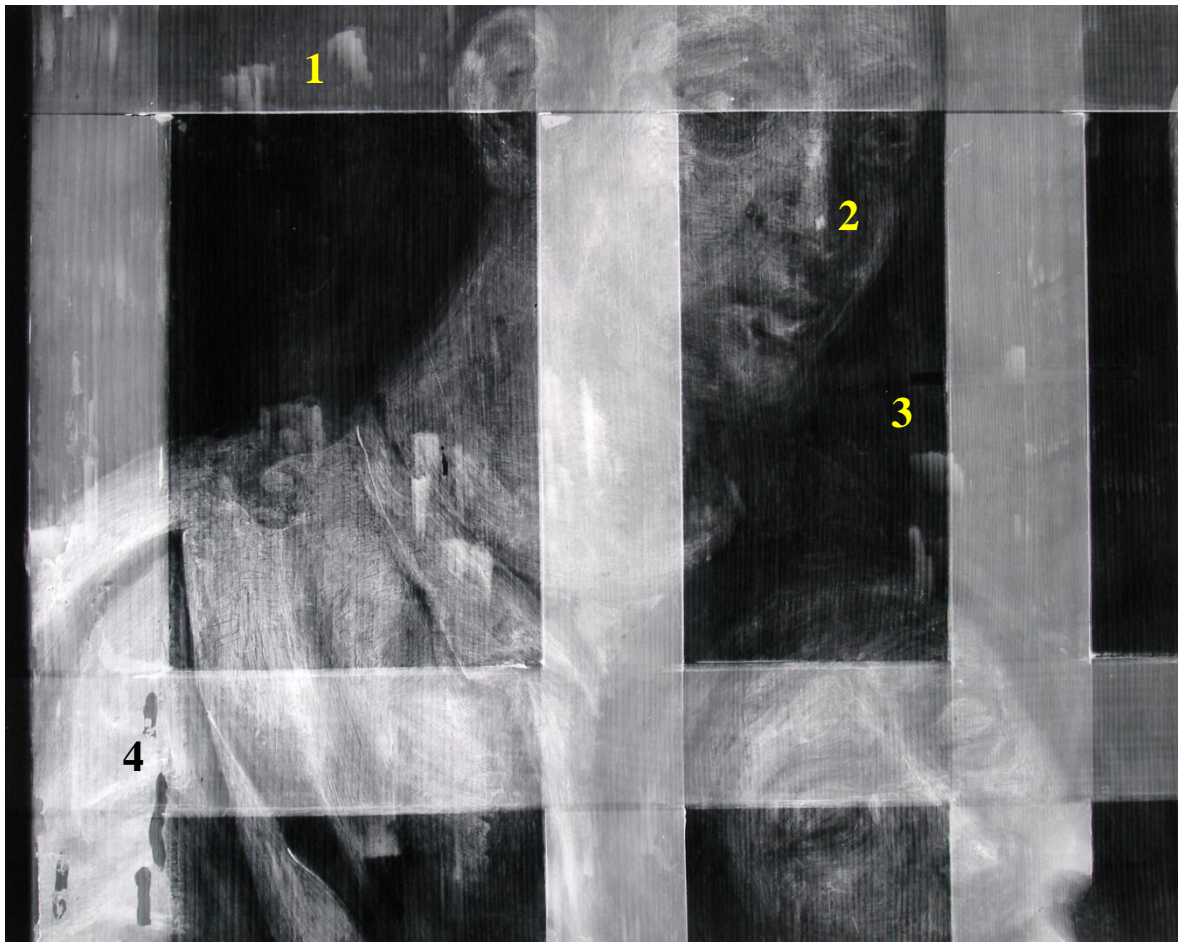


Fig. 38. X-radiography-John the Evangelist. 1. These white spots are possibly tool marks on the smooth surface of the wooden support, that took place during the planing process. They are presented white in the X-radiographies because they are probably filled with some ‘heavy’ substance, such as lead. 2. Highlighting with white lead of details on the nose of the Evangelist. 3. A dowel placed on the connection of the first with the second plank. 4. Insect attack (Studio Västsvensk Konservering: Carin Petersson and Polyxeni Papadopoulou)

5.2.2 Kind of wood of the painting’s panel

The panel of the Norum painting is most probably made of oak.¹²⁵ There is enough evidence that leads to that outcome; however, it is only based on naked eye and stereomicroscopic observation because sample-taking (thin sections) was not possible to undertake. Among the vast number of wood species some of them can accurately be identified at a glance while others demand more sophisticated equipment. By diligent examination of wood features, particularly those found on end-grain¹²⁶ surfaces, it is possible to learn distinguishing characteristics of commonly encountered woods.¹²⁷ In the following parts let us look closer to the information derived by the observations:

The back side of the panel was painted with a brown color after the construction of the cradle (fig.2). Due to that intervention it is hard to know what the wood’s original color is –or even get an approximate idea about it. The transverse sides of the planks except for being overpainted with a brown color they are also not clearly cut surfaces and for these

¹²⁵ Oak is classified as *angiosperm* (in comparison with *conifers* that are classified as *gymnosperms*) and *dicotyledon* (hardwood lumber).

¹²⁶ The term end grain refers to the transverse surfaces.

¹²⁷ Hoadley, B. (2000), p.47

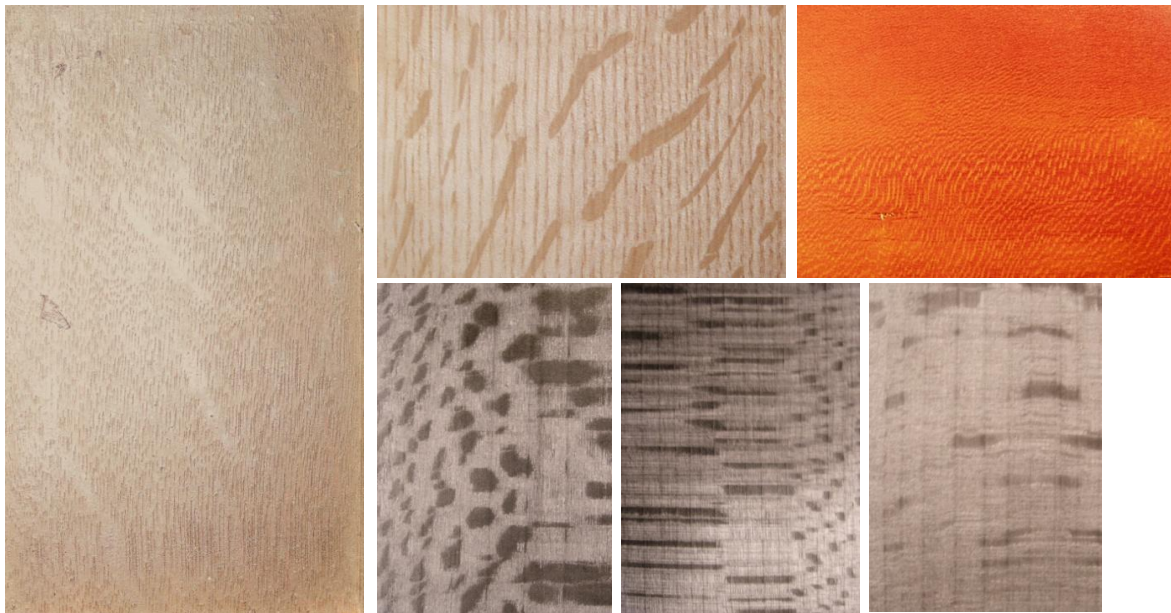
reasons it is hard to examine them macroscopically (fig.39). Hoadley mentions that ‘‘the consistent and unique combinations of anatomical features in hardwoods make macroscopic identification quite effective. In the end-grain one can find the end-grain ‘‘cellular fingerprint’’’.¹²⁸



Fig. 39. Bottom left side of the Norum painting-first plank (Photo:Polyxeni Papadopoulou)

By observing the reverse of the panel and its three planks, it was immediately detected the figure of *ray fleck* or *medullary rays* on the first plank on the left (fig.40). Ray fleck is characteristic of certain hardwoods, for example sycamore, oak, beech, cherry, maple and poplar and it is an important characteristic aiding in the identification of wood.¹²⁹ Ray fleck is visible only in a radial surface, which is a consequence of the wood rays which radiate outward from the pith towards

the bark. When wood is sectioned radially (fig.46-C), many rays are split and exposed on the surface.¹³⁰ The resulting patches of ray tissue – to the extent that they contrast with the background longitudinal tissue – are called *ray fleck*.¹³¹



Figures 40-45. (40) Reverse of the Norum painting with the ray fleck being visible. The ray fleck was detected only in the first plank and is more distinct in the area between the second and the third vertical slat and the second and third horizontal crossbar. (41)Top middle: Oak. The ray fleck seems to be identical with the ray fleck of the panel of the Norum painting. The colors between these two pictures are reverted because the panel of the Norum painting is painted with a brown color and moreover the picture was taken while the panel was illuminated with indirect light. In that way the overpainted but glossy ray fleck would easier be detected. (42)Top right: Cherry’s ray fleck. (43,44,45) Bottom row: The ray fleck in sycamore, maple and beech. All these pictures have been taken from Bruce Hoadley’s books *Identifying wood* and *Understanding wood* and represent American species of the particular kinds of wood.

¹²⁸ Hoadley, B. (2000), p.48

¹²⁹ *ibid*, p.43

¹³⁰ *ibid*

¹³¹ *ibid*

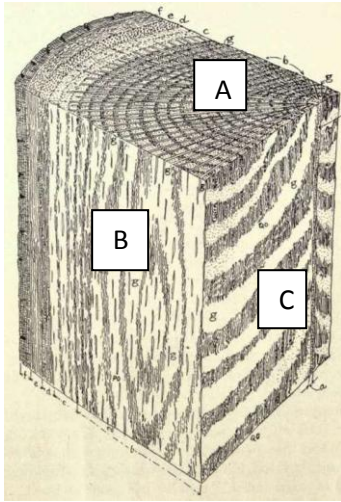


Fig. 46. Visual representation of an oak trunk. A. Transverse section; B. Tangential section; C. Radial section with ray fleck.

The prominence of the ray fleck depends on the size of the rays and how closely the cut approximates a true radial plane.¹³² In the Norum painting, the first plank has such a ray fleck. Here, the ray fleck –and although it is not possible to see its true color and the way that it contrasts to its background– has a glossy appearance which is characteristic for oak. Due to this characteristic, oak’s ray fleck is called *silver grain*.¹³³ Moreover, the shape and distribution of the panel’s ray fleck is also characteristic for oak and differs from the ray fleck of the other kinds of hardwoods mentioned above (fig.42-45).¹³⁴

The second and third planks do not present such a prominent *ray fleck* as the first plank. Nevertheless, the observation of the X-radiographs showed that these two planks are quartersawn¹³⁵ and they have a vertical grain/radial grain (fig.57) as the first, radial-cut plank has. A possible explanation about why the second and third plank do not present the figure of *ray fleck* can be that their surfaces were cut between 45 degrees to 90 degrees in relation to the rays (rift grain: the term is especially used for the description of oak¹³⁶). In that case and according to Hoadley, a piece of oak, if cut rift-cut, produces a figure with reduced size of the flecks.¹³⁷ It is possible that the joiner first cut a quartersawn, true radial plank and then continued by acquiring rift-cut parallel planks to the first, radial one.

The fact that the planks were radially cut (the one is radial and the other two are close to radial) from the tree trunk is an evidence of good quality oak panel, which is less prominent to warping and deformation due to environmental changes. Quartersawn planks were used to produce high quality panels in Northern European countries.¹³⁸ Philip Walker in his article *The Making of Panels; History of Relevant Woodworking Tools and Techniques*, explains clearly this reasoning;

“More than half the total weight of a newly felled tree may be water. As the wood dries out to the point at which it reaches stability with the ambient humidity, it will shrink in its width and is liable to crack or warp, depending on how it has been cut. The only boards reasonably free from these tendencies are ones radiating directly from the tree’s heart”.¹³⁹

¹³² Hoadley, B. (1990), p.43

¹³³ *ibid*, p.44

¹³⁴ *ibid*, p.42

¹³⁵ The surfaces are oriented in radial direction. Pinna, D. (2009), p.22

¹³⁶ Hoadley, B. (2000), p.14

¹³⁷ *ibid*, p.26

¹³⁸ Pinna, D. (2009), p.23

¹³⁹ Walker, P. (1998), p. 182

That statement points out to an important feature of the panel of the Norum painting –its good quality and stability– and together with the absence of warping it sets new questions about the necessity of the construction of the cradle. Cradling is an extreme action, and even though the panel has actually suffered from expansion-contraction processes that led to the creation of cracks between its planks, its usefulness is uncertain. The cradle was constructed in order to keep the planks in place and limit the movements of the wood [Two of the vertical slats are placed directly on the connections of the planks. A third vertical slat is especially adjusted to stabilize a crack on the lower part of the third plank (reverse) (fig.2, 39)].

Until this point we reached the conclusion that the panel of the painting is most probably made of oak¹⁴⁰ and that its planks are cut radially –or close to radially– out of the tree trunk. The kind of wood used by the old masters can in a broader sense give us more concrete information about the country that a panel was constructed than the dimensions of a panel, because it depends not so much on the workshop and carpenter practices but on the wood resources of each country. Nevertheless, even in that case, the kind and species of wood could only contribute to an attribution if it was combined with other very strong evidences.

The artists would often use wood native to their region. Albrecht Dürer (1471-1528), for example, painted on poplar when he was in Venice and on oak when in the Netherlands and southern Germany.¹⁴¹ Leonardo da Vinci (1452-1519) used oak for his paintings in France; Hans Baldung (1484/5-1545) and Hans Holbein (1497/8-1543) used oak while working in southern Germany and England, respectively.¹⁴² Lucas Cranach used lime-tree wood and more often beech wood – an unusual choice.¹⁴³ Oak panels are exceptional in the oeuvre of Cranach and they present contradictory results.¹⁴⁴ In some cases, oak panel paintings that were initially attributed to Cranach, proved to belong to another workshop after they were examined in detail.¹⁴⁵ In other cases, the oak wood found in some of Cranach's paintings proved to be a later addition that was carried out after Cranach's death.¹⁴⁶

In general, oak was the most common substrate used for panel making in the Low Countries, northern Germany, and the Rhineland around Cologne during the fifteenth and sixteenth centuries.¹⁴⁷

However, the oak that the painters of the northern school were using for the construction of their paintings' supports were not always of local origin.¹⁴⁸ Based on the results of recent dendrochronological studies, there was an enormous exportation of oak

¹⁴⁰ The most common species of oak are the white and red oak. In the case of Norum painting and its panel it is hard to find out the oak species, not only because of the brown paint covering the original color of the wood but also because sample-taking is not possible. However and in any case, the results of such an examination would not provide this work with any applicable clues.

¹⁴¹ Vadum, J. (1998), p.150

¹⁴² *ibid*

¹⁴³ *ibid*

¹⁴⁴ Heydenreich, G. (2007), p.48

¹⁴⁵ *ibid*

¹⁴⁶ *ibid*

¹⁴⁷ Vadum, J. (1998), p.150

¹⁴⁸ *ibid*

from the Baltic region to the Hansa towns.¹⁴⁹ This exportation lasted from the Middle Ages until the end of the Thirty Years War (1618-1648).¹⁵⁰

5.3 Layer succession and painting technique

5.3.1 *The preparatory layers: ground, isolation and imprimatura*

Ground: In the process of constructing an appropriate painting surface for panel painting, the great masters first applied the ground –to untreated or presized panels, comprised usually by a filler and some kind of aqueous protein glue (animal glue or casein). This substrate was of great importance in order to produce a properly smooth and reflective surface for painting. Sometimes an intermediate canvas was adhered to the panel before the application of the ground. In the Norum painting it is hard to know if the panel was presized, however, with the help of the X-radiographies no canvas was detected.

The ground detected in the samples of the Norum painting is white and fine-textured (fig.47-51). A general convention about the color of the ground is that the white, light-reflecting ground was mostly applied during the fourteenth and fifteenth centuries and its practice was almost universal.¹⁵¹ From the sixteenth century grounds were often colored, with the dark grounds applied south of the Alps and the light grounds north of the Alps.¹⁵²

The ground is approximately 1mm thick, and was applied smoothly and evenly on the surface of the panel. As a general practice, the ground was applied –by old masters but even today in certain kinds of panel painting such as icons– in a few layers without long drying periods between the applications. In the observation of the sample cross-sections from the Norum painting, no certain number of ground applications can be observed, at least with the application of visual light spectra. The use of ultraviolet (UV) light would eventually give more detailed information not only about the layer succession of the ground layer but of the whole stratigraphic structure of the cross-sectioned chips.

Concerning the ground and the qualitative characteristics of its filler and medium the analysis was based exclusively on the microscopic observation of the sample cross-sections and the examination of the X-radiographic images. In the examination with the optical microscope the ground is presented as smooth, powdery, white and transparent. The transparency of the chalk ground is based on its low refractive index and that also explains its poor covering power.¹⁵³ This fact is getting more evident if compared with the lead white particles on the same samples (fig.48,51) and based on the fact that lead white has a very good covering power.¹⁵⁴ The chalk ground in the samples is homogenous and there are no visible coccoliths. Generally and at high magnifications (400 to 500x) and with a scanning electron microscope fossiliferous

¹⁴⁹ Vadum, J. (1998), p.150

¹⁵⁰Klein, P., "Zum Forschungsstand der Dendrochronologie europäischer Tafelmalerei", Restauratorenblätter: *Holztechnologie und Holzkonservierung, Möbel und Ausstattungen* 10:35-47

¹⁵¹ Abrahams, P. (2008), p.25

¹⁵² *ibid*

¹⁵³ Gettens, R.J. (1966), p.104

¹⁵⁴ Doerner, M. (1969), p.53

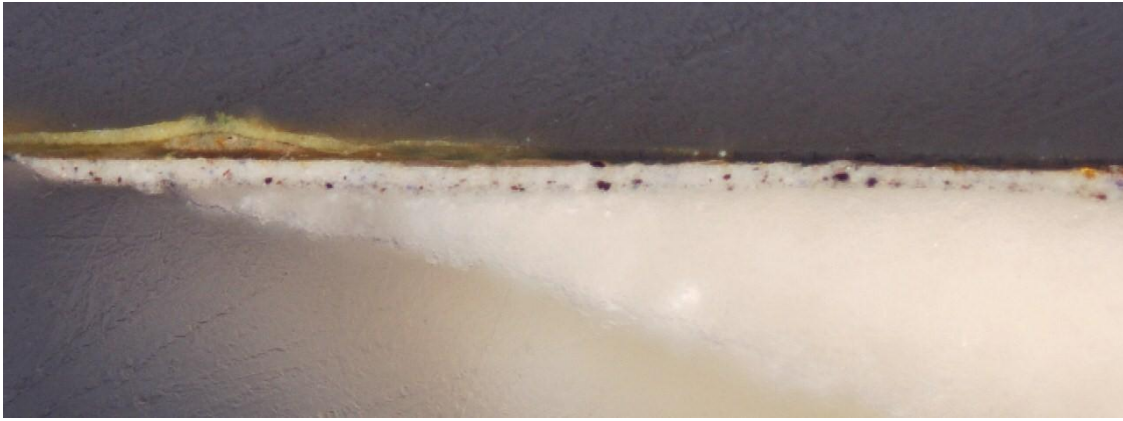


Fig. 47. Cross-section of sample A/Christ's carnation (see fig.35-A). The fine-powdered white ground is followed by a layer mainly composed of a white filler –lead white– with the sporadic appearance of black, brownish and yellowish pigment particles. This layer could serve the function of an *imprimatur*. The second layer is thinner and has a dark, brown-greenish hue. It does not contain any distinct pigment particles. It is probably a *glaze* containing some brownish colorant. This layer is followed by a light gray-colored layer containing orange pigment particles. At last, a white-yellowish layer consisted of powdered pigments is taking place. (Photo: Polyxeni Papadopoulou)

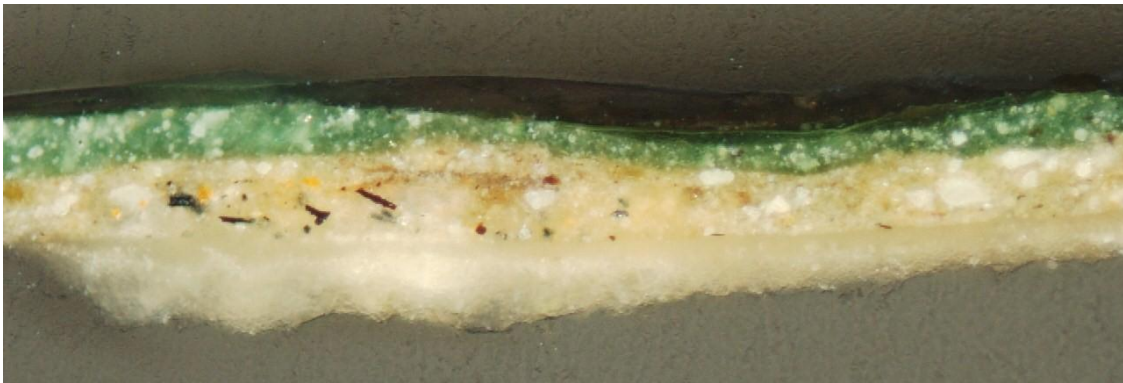


Fig. 48. Cross-section of sample B/John the Evangelist's green robe (see fig.35-B). The fine-powdered chalk ground is impregnated in its upper part by a transparent substance, probably an isolation layer. The ground is followed by a light beige layer with sporadically dispersed particles of lead white, ochre, yellow, green and red pigments. The next layer is also light beige and consists mainly of ochre and big white lead particles dispersed homogenous. Then it follows a green layer comprised of a fine grounded green pigment and lead white particles. Finally, a thin and transparent green glaze is applied before the application of the varnish. (Photo: Polyxeni Papadopoulou)



Fig. 49. Cross-section of sample C/Mary Magdalena's red dress (see fig.35-C). The chalk ground is followed by a light red layer composed of white lead, orange and dark red pigment particles. Then a thin red color layer follows. (Photo: Polyxeni Papadopoulou)

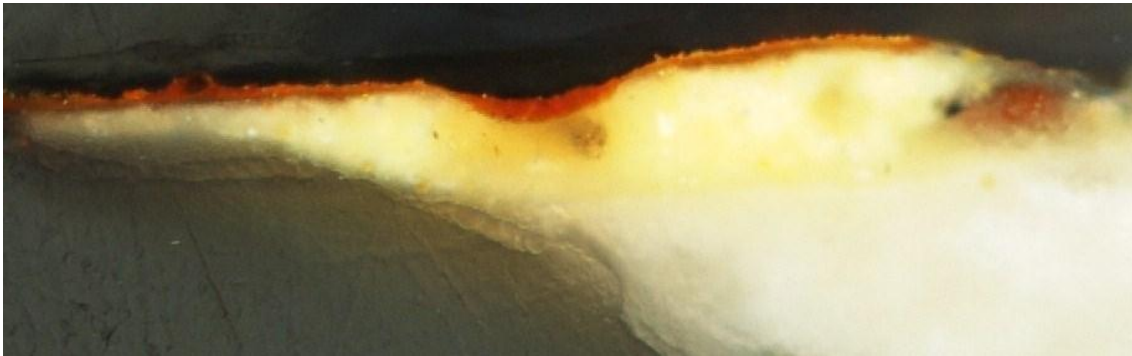


Fig. 50. Cross-section of sample D/Gold background-edge of the painting (see fig.35-D).The fine-powdered white ground is followed by a light ochre layer (?) containing black, white, dark red and yellow particles. The subsequent layer has a brown-red color. The upper part of the white ground is impregnated with a translucent yellowish substance. This is a random incident, thus not representative for the painting. (Photo: Polyxeni Papadopoulou)

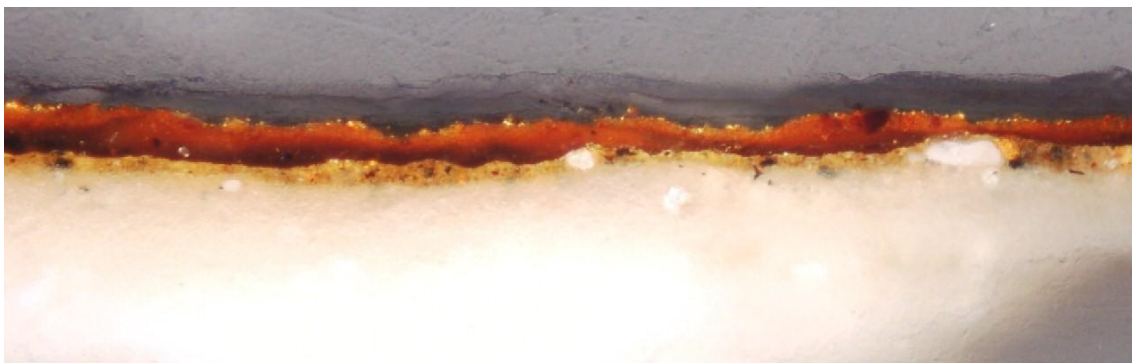


Fig. 51. Cross-section of sample E/Gold background-central area of the painting (see fig.35-E). The fine-powdered white ground is followed by a light ochre layer containing black, white, dark red and yellow particles. Then there is evidence of previous gilding. The subsequent layer has a brown-red color and no pigment particles can be distinguished. Gold leaf makes up the final layer of the stratigraphy of the sample cross-section. The contrast between the opaque white color of the lead white particles and the chalk ground is clearly pronounced. (Photo: Polyxeni Papadopoulou)

remains in the shape of tiny, hollow shells can be seen, proving that chalk is of natural origin.¹⁵⁵ Nevertheless, regardless of the magnification power it has to be taken under consideration that up to 1850 only natural sources were exploited; then an artificial form was produced as a precipitate of calcium carbonate.¹⁵⁶ The Norum painting is expected to have been constructed before 1850 so the chalk used in the preparation of its ground has to be of natural origin. Now concerning any admixtures to the ground, in the West, lead white was widely used as a component of the ground.¹⁵⁷ By the examination of the painting's X-radiographies no lead white was detected in the ground's composition –at least not significant proportions so as to be clearly detected. The case here is that in the X-radiographies the use of lead white in the paint layer is evident through its sharp contrast with the rest of the less heavy substances of the different layers. If there were included lead white in the ground, then that should minimize the contrast of the lead white of the paint layer in the X-radiographies.

The ground has been preserved in a good state and in the whole painting including its edges. The ground and the painting layers cover the surface of the panel evenly until its very edges which means that the painting was fully executed and then framed. In the

¹⁵⁵ Bomford, D. (2006), p.28

¹⁵⁶ Fleming, S.J. (1975), p.59

¹⁵⁷ Craddock, P. (2009), p.294

Wittenberg workshop where Cranach the Elder was a member, there was a common practice –but not holistic– to frame the paintings before the application of the ground.¹⁵⁸

Cranach applied most often on his panels a ground of white color bound with animal glue and containing calcium carbonate as a filler.¹⁵⁹ This was generally speaking the most common practice in northern Europe¹⁶⁰ (There is the general rule that north of the Alps it was used chalk -calcite, i.e. calcium carbonate- while south of the Alps it was used gypsum –calcium sulphate dihydrate. This rule is based on strong evidences; however, there are always exceptions to a rule).¹⁶¹ The absence of any fossil shells (natural sedimentary chalk) in the majority of Cranach's works supports the assumption that the source of the finely grained calcium carbonate may have been adequately prepared local limestone.¹⁶² He also applied reddish-colored grounds but in a lesser degree than the white ones.¹⁶³ Considering the fact that Cranach may have applied local limestone instead of chalk new questions come up about the character of the Norum painting's ground (it has the same smooth character and absence of fossil shells). However, Heydenreich does not mention the magnification power of his samples so a sufficient comparison cannot take place here.

Isolation layers: Isolation layers were used after the application of the ground, in order to reduce its absorption before the application of the paint. The isolation layer could be an aqueous binding media, an oil or oil-resin-based layer. In some of Cranach's works and in cross-sections of samples, the upper part of the ground appears to be translucent yellowish to grayish, suggesting either an oil, oil-resin-based isolation layer or a layer formed by the oil binding medium from the paint.¹⁶⁴ The oil penetrating the ground provides also for a stable adhesion of the paint film, thus increasing its durability.¹⁶⁵

In the D-gold sample from the Norum painting, the upper part of the white ground is impregnated with a translucent yellowish substance (fig.50). The case here is that the ground was most probably randomly impregnated with the paint layer's binding medium/oil. As it is getting evident in part 5.3.3, there is no color scene under the gold background. Nevertheless there has been detected another gold layer which seems to constitute the original background covering. An isolation layer is thus unnecessary because such a layer is used before the application of paint in order to reduce the absorption of the paint's binding medium.

In the B-green color sample, however, there is evidence that the upper part of the ground has been impregnated with a transparent substance. The function of this layer can be the one of an isolation layer. Nevertheless, this layer has been observed only in the B-green color sample and not in the other two color samples (A-carnation, C-red color sample).

¹⁵⁸ In the paintings "Johannes Cuspinian and His Wife Anna" (c.1502/03) by Lucas Cranach the Elder, the paintings were framed before the application of the ground and this created the so-called *priming barb* close to the edges of the panel. Heydenreich, G. (2007), pp.40-41,86

¹⁵⁹ Heydenreich, G. (2007), p.93

¹⁶⁰ Pinna, D. (2009), p.54

¹⁶¹ Townsend, J.H. (2008), p.3

¹⁶² Heydenreich, G. (2007), p.93

¹⁶³ *ibid*, pp. 93-97

¹⁶⁴ *ibid*, p.98

¹⁶⁵ *ibid*

Imprimatura

The term *imprimatura*¹⁶⁶ is Italian and in the context of the work of Lucas Cranach the Elder, it notifies an overall translucent toning of a ground that has been applied to the whole surface –except for the water gilding or silvering passages.¹⁶⁷ In his works he used mostly a light–reflective white imprimatura or even a light reddish one.¹⁶⁸ In the cross-sections of the samples from the Norum painting –at least in the color samples nr A,B,C it cannot be identified such a mutual layer in connection to the ground. However, there are indications of undermodelling. They will be closer exemplified and analyzed in part 5.3.4.2.

5.3.2 The underdrawing

Generally speaking, underdrawings have been executed with different styles and materials. Styles could vary in accordance to each artist's individual way of working, from free hand sketches to methodical drawings. On a white ground artists usually carried out their underdrawings with carbon black in powder (spolvero), in chalk (freehand or ruled drawing) or dispersed in a medium (brush drawing).¹⁶⁹ The nature –dry or liquid– of the medium of the underdrawing can be detected with the application of IR reflectography.

In the following passage, Gunnar Heydenreich describes the underdrawings detected in the works of Lucas Cranach the Elder:

*“The majority of examined paintings by Cranach the Elder includes underdrawings made with a pointed brush and a black pigment in a liquid medium. Cranach drew outlines and volumes mostly with relatively short, impulsive, curved strokes. Occasionally shadows are indicated by hatching (parallel lines). Violent cascades of lines on the earliest works reflect his extraordinary dynamic working method. Precision of detail and anatomical accuracy are subordinated to expressiveness and elegance of contour as well as harmony of composition. The underdrawing delineates individual forms without determining conclusively the borders for the application of the paint. Nonetheless, in some of the earliest works the linear underdrawing was integrated efficiently in the painting process”.*¹⁷⁰

In order to detect the underdrawings of the Norum painting IR2 reflectography was applied. The surface of the painting was divided in 21 parts, 7 height x 3 width, however, only 18 photographs were taken. The top part of the painting (divided in 3 parts) representing the background of the painting and being exclusively covered by gold leaves was not photographed. Even if a background motif exists under the gold, the usefulness of its underdrawing would not be of greater importance than the one of the painting's figures, at least for a comparison with the oeuvre of Cranach.

¹⁶⁶ In the context of this thesis, the term *imprimatura* will be used in the same way as Gunnar Heydenreich defines it, for obvious practical reasons. The word is Italian and its equivalence with the German *Imprimatur*, the Netherlandish *Primuersel* and the English *Priming* is ambivalent. Heydenreich (2007), pp.98-99

¹⁶⁷ *ibid*, p.99

¹⁶⁸ *ibid*, pp.99-101

¹⁶⁹ Pinna, D. (2009), p.14

¹⁷⁰ Heydenreich, G. (2007), pp.105-7

Unfortunately the photographs acquired by the IR2 reflectography did not provide any information about the painting's underdrawing (fig.55). The resulting photographs have recorded the paint layers and the retouchings instead. That the underdrawing was not detected depends on the sensitivity of the method which is determined by the thickness and the type of paint layer.¹⁷¹ In the particular case the IR light did not penetrate the paint



Fig.52-56.(Photos: Ingalill Nyström, Polyxeni Papadopoulou) **(52)** Top left: Visual spectra-color **(53)** Top right: UV fluorescence. With the application of UVF, the retouchings on the cape of Mary that were carried out after the application of the varnish became clearly visible. The dark line on Mary's face is a scratch on the varnish layer. **(54)** Centre left: Visual spectra-b/w, **(55)** Centre right: IR reflectography. In the particular case the application of the method provided insufficient information about the underdrawing layer - on the other hand, the presence of some dark pigments is enhanced as well as the later retouchings on Mary's cape. **(56)** Bottom: UV reflection. With the application of UV reflection additional information is provided about the surface details. Mary's blue cape has a distinctively more coarse paint surface than her white veil and face.

¹⁷¹ Gilardoni, A. (1994), p.105



Fig. 57. Detail-Mary. X-radiography. Mary's blue cape has almost equal proportions of lead white as her white veil (bottom left). (SVK, Carin Petterson, Polyxeni Papadopoulou)

layers but it was either absorbed or reflected by them. This is a factor depended on the nature of the pigment and the pigment volume concentration. The thick varnish layer and the retouchings have also acted as a restricting penetration factor for the IR light. If these were removed then the IR light would possibly penetrate to a deeper extend. Some of the retouchings of the painting absorbed the IR light¹⁷² and thus they concealed any underlying information.

5.3.3 The gold background

The gold background of the Norum painting is made up of gold leaves of the approximate dimensions of 3-4.5cm height and 6-6.5cm width (fig.58). The leaves regularly overlap each others' periphery. While the leaves on the left side of the painting (left from the Cross) are placed in a horizontal position, the leaves on the right side (right from the Cross) are placed diagonally. This is a practical choice ruled by the dominance of the diagonally placed escalator in this half of the background. The application of gold paint is also visible in the perimeter of the head of the Virgin. The gold is generally preserved in a good condition with the exception of its exfoliation in the cracked areas (fig.59) and some random scratches and abraded areas. In the cracked areas the exfoliated parts were overpainted with the help of a



Fig. 58. Part of the gold background with the gold leaves clearly visible (Photo: Polyxeni Papadopoulou)

¹⁷² E-mail contact with Ingalill Nyström Larsson (4th October 2010)



Fig. 59. Gold background, detail from the crack on the left of the Cross. The exfoliation of the gold layer took place alongside the crack and the lacunae were overpainted with a bronze color (Photo: Polyxeni Papadopoulou)

color with a bronze nuance, apparently of irrelevant matching quality with the gold of the background.

In part 4.3.2 an attempt is made to evaluate the function of the gold background as well as its unity with the rest of the compositional elements of the particular painting. The background, as Till-Holger Borchert expressed it *“it does not look authentic”* and he continues *“that does not mean that there was not a gilded background originally, although it is unlikely”* (see Appendix 7).¹⁷³ With these two phrases Borchert stresses two basic facts: that the gilded background looks like a later addition (this statement is most probably based on the fact that the gold overlaps the color in the perimeter of the figures –see next paragraph) and that it does not match with the rest of the composition. For Borchert the painting *“certainly looks Flemish”*¹⁷⁴ and in the Flemish art of the 16th-17th centuries a gilded background was not a usual element. Moreover and as it is already developed in part 4.3.2, the renaissance qualities of the

painting seem to find an antipode in the abstract character of the gold, an element which is strongly prominent in medieval art instead.

By initiating the technical examination it was noticed that the gold partially overlaps the color layers of the figures in the areas of their outline (fig. 60). That is an unexpected fact which contradicts with the wide practice of applying the gold in advance, before any color layer is applied. The stereomicroscopic examination revealed that underneath the abraded parts of the gold there is a uniform red-brown layer –maybe a bolus.

By the exposition of the painting to X-rays radiation it was mainly intended to examine some technological characteristics of the panel as well as the painting technique and the preservation state of the painting. X-rays radiation is obstructed by all metal and mineral compounds and these areas are presented white in the X-radiographies. Nonetheless X-rays penetrated the gilding of the Norum painting. This happened apparently due to the exceptional thinness of the gold leaves in combination



Fig. 60. Detail from the hair of Mary Magdalena. The gold leaves overlap the brown color of her hair. This is an unusual fact which contrasts with the wide practice of applying the colors after the application of gold is completed (Photo: Polyxeni Papadopoulou)

¹⁷³ Personal contact with Till-Holger Borchert, (22nd Mars 2010)

¹⁷⁴ *ibid*

with a rather powerful kV (30). However, a tricky question came up: is there enough evidence that the material of the leaves is gold and not brass? In the case of brass the X-rays radiation would easier penetrate its gilding without any unexpected results. An examination of the qualities of each metal took place and the acquired facts were actually convincing that the metal leaves are made of gold. Brass leaves have much bigger dimensions (8x8cm up to 16x16cm) in comparison to gold leaves that are up to 8x8cm –in the Norum painting the biggest side dimension is c6.5cm.¹⁷⁵ Moreover, the dimensions are relevant to the thickness of the metal leaves; gold can be 1/5000 to 1/8000mm thick while brass is 10 to 100 times thicker.¹⁷⁶ Gold leaves would not be possible to handle if they had the same big dimensions as brass. That the gilding of the Norum painting is composed of very thin leaves became evident during the stereomicroscopic examination. The metal leaves are so thin that the underlying red-brown layer is clearly visible in almost the whole metal-covered area. An additional fact supporting the existence of gold is that the overlapping areas of the leaves are hardly visible even with raking light. On the other hand, an important defectiveness of brass leaves is that they do not overlap each other regularly but they create ‘weavy’ joints.¹⁷⁷ Finally and most important –if the color nuance is neglected based on the different gold qualities (karats), the different brass qualities (alloy proportions) and the frequent application of different imitation colored varnishes– the brass would most probably have been corroded in places where the varnish is exfoliated. However, this does not happen concluding to further evidence about the allegation that the background is constructed by gold leaves.

Proceeding with the X-rays radiation, it penetrated the gilded areas and recorded the wood grain, thus no other information from the underlying layers became accessible. After a general overview of the recorded information in the painting’s X-radiographies it became apparent that lead white was extensively used in the painting process (fig.38,57). Under the scope of this evidence it would not be irrelevant to hypothesize that if there was another background scene under the gold it would probably consist of varied proportions of lead white. Especially in the realistic version of the depiction of the sky this reasoning would have a profound basis. Nevertheless the X-radiographies presented a completely uniform underlying layer where lead white is not present.

Sample-taking and preparation of cross-sections were carried out and their examination with an optical microscope provided the investigation of the background with additional information. Two samples were taken, one from the edges of the painting and one from a central delaminated area (fig.35-E). Sample E (central area, fig.51) presents the following stratigraphy: The fine-powdered white ground is followed by a light ochre layer containing black, white, dark red and yellow particles. Then there is evidence of previous gilding. The subsequent layer has a brown-red color and no pigment particles can be distinguished. Gold leaf makes up the final layer of the stratigraphy of the sample cross-section, before the varnish layer, that cannot be distinguished in the photograph. Sample D

¹⁷⁵ Nowadays the most usual dimension is 8x8cm. In the past they could be even smaller.

¹⁷⁶ Tunander, P. (1997), p.16

¹⁷⁷ *ibid*, p.22

(edge, fig.50) has in general terms¹⁷⁸ the same stratigraphy with the addition of the impregnated ground layer by a yellow transparent substance. Now, going back to the previous problem statement about the quality –gold or brass– of the gilding, the conclusion is that the X-rays radiation was actually very powerful because it penetrated the areas of the underlying layer of metal/original gilding as well. The material of this layer is unknown; nevertheless it is presumably made up of gold leaves. This first, original gilding was probably deteriorated and for that reason a new background was applied. In the case that the top gilding was made of brass leaves then the underlying gold gilding –if it is true gold- should be present in the X-radiographies. However, the X-rays were not obstructed by any gold metal and because there is enough evidence that the background is actually made of gold leaves, the conclusion is that the X-rays radiation was powerful enough to penetrate the gold.

There is now sufficient evidence that the gilding on the top of the stratigraphy is not authentic but a later intervention. The underlying brown-red layer is probably some substance aiming to the consolidation of the gilding. The choice of brown-red color probably aimed in providing the gold background with a warm tone equivalent to the one achieved with bole. The original gilding is directly applied on the ochre-colored layer. The application of this layer has to be connected with the application of the gilding –as a preparatory layer, however, no qualitative analysis was undertaken in order to determine its nature.

About Lucas Cranach the Elder, gilded surfaces formed an important part of his compositions until the early 1520's because later gold leaf was mainly used in the decoration of frames.¹⁷⁹ Traditionally in his works the gold leaf was used to enhance haloes (fig.22) and the illusionistic effect and precious nature of metal objects, such as crowns and jewellery.¹⁸⁰ Nevertheless, he occasionally reverted to the gilded background.¹⁸¹ After the short overview of Cranach's Lamentation scenes in the catalogue of Jacob Rosenberg as well as in the Boston Lamentation (see part 4.2), these scenes do not present any gilding on their background. Their background depicts a landscape dominated by a clear sky and a calm atmosphere. However, these four Lamentations by Cranach are not able to determine the application of gold in his Lamentation scenes and his number of works generally.

5.3.4 *The paint layers*

In this section the painting technique is being analyzed. Firstly, a theoretical approach is taking place, exemplifying the four basic techniques of creating volume in representational painting. Through the observation of the way that volume is created in painting, it is possible to find out more about the stylistic and chronological context of a particular painting. This theoretical part, serves the goal of being a reference point through which the

¹⁷⁸ The magnification of the sample is not sufficient for distinguishing with great detail between the different layers of its stratigraphy. This happened due to technical problems with the camera's software.

¹⁷⁹ Heydenreich, G. (2007), p.115

¹⁸⁰ *ibid*

¹⁸¹ *ibid*

technique of the Norum painting will be analyzed and “filtrated”. Then, the technique of two areas of the painting - the flesh and the draperies are observed. The observations are based both on the layer succession and the brushwork. The areas and extension of examination were limited by the limitations for sample taking and defined by the use of two main analytical techniques; microscopic observation of sample cross-sections and systematic observation of the painting’s X-radiographies. Ultraviolet fluorescence also constituted a useful tool applied for the detection of later interventions, thus parts of the painting that are not related to the original synthesis.

5.3.4.1 The four basic techniques for creating volume in representational painting

The artists used different painting techniques in accordance to the specific art historical period they belonged to. The morphology and properties of the painting support played an equally important role. Depending on the support, the painting medium differs and the artistic results differentiate substantially. Oil painting on a wooden panel follows another way of paint elaboration than aquarelle on paper or al fresco mural painting. The creation of volume through specific art processes shows probably it’s most refined and subtle expressions through oil painting in representational art.

The Norum painting belongs to the category of representational art and more specific to figurative painting. With the term ‘representational art’ it is simply referred the kind of art including all imagery which represents an identifiable object or series of objects.¹⁸² The particular painting except for being representational has also been thoroughly elaborated as it concerns the creation of volume and perspective. From the parameters volume and perspective, volume is the one directly connected to the elaboration of the painting medium, and that’s the reason which is being developed in this particular part of the thesis.

The creation of the illusion of volume in representational art and in painting is accomplished through the juxtaposition of dark and light values, and of highlights and shadows.¹⁸³ According to Sylvana Barrett and Dusan Stulik, this illusion is traditionally accomplished through one of four basic techniques, which has led to a standardization of the visual examination of paintings; *The basic technique (tempera)*, *The transparent oil technique*, *Highlighting with impasto white* and *Direct surface blending/a la prima*.¹⁸⁴ The Norum painting is carried out with the transparent oil technique. In order to make this statement clear, basic information about the three other techniques is outlined here; The basic technique is expressed by tempera paintings in Italy of the 14th century. Here the painting effect has a rather opaque character and it is possible to distinguish between the individual color values of the paint layers. On the other hand, highlighting with impasto white is a technique applied by the Baroque masters. It has a dramatic character, with prominent chiaroscuro.¹⁸⁵ Moreover, because the paint elaboration advances from dark to

¹⁸² <http://www.visual-arts-cork.com/representational-art.htm>

¹⁸³ Barrett, S. (1995), p.7

¹⁸⁴ *ibid*

¹⁸⁵ Barrett, S. (1995), p.7

light color values, the dark areas have a thin and transparent effect while the highlights define volume and appear visibly raised from the painted surface.¹⁸⁶ Finally, in the work of the Neoclassicists, direct surface blending –ala prima– of the pigments creates an opaque effect in contrast to the luminous character of colors in the multilayered approaches.¹⁸⁷

The technique of the Norum painting has none of the characteristics of the above mentioned techniques. It is a rather representative example of the transparent oil technique which was basically exemplified by the Flemish and Netherlandish masters.¹⁸⁸ The technique was widely applied in the northern Renaissance. This is clearly obvious by simply observing the painting. The painting technique has followed a systematic approach with the juxtaposition of clear color layers and glazes. The admixture of different colors in a paint layer is limited and based mostly on lead white tints –mixture of a color pigment with white lead. The artist has worked on a highly reflective, white ground layer. All these facts can additionally be confirmed by the microscopic observation of the sample cross-sections.

5.3.4.2 Elaborating the flesh tones

A sample was taken from a part representing the flesh of the body of Christ. The exact point that the sample was taken is positioned in the lower part of the connection of the second with the third plank (fig.47). The ground and the color layers placed on the connection of these two planks, show partial flaking and brittleness due to the mechanical stresses which took place between the planks.

The sample is composed of a fine, white powdered ground, and four layers of painting. The first layer is mainly composed of a white filler –lead white– with the sporadic appearance of black, brownish and yellowish pigment particles. This layer could serve the function of an *imprimatur*. The second layer is a thin glaze which has a dark, brown-greenish hue. This layer is followed by a light gray-colored layer containing orange pigment particles. At last, a white-yellowish layer consisted of powdered pigments is taking place. The technique apparently belongs to the category ‘‘the transparent oil technique’’ with a white, highly reflective ground, a grayish *imprimatur* and a methodical application of thin color layers and glazes. Moreover, it is possible that the artist has applied a gray-toned underpainting (as a gray-toned version of the final image) in the flesh parts instead of an underdrawing, and that can also be the case in part 5.3.2 with the absence of an underdrawing in the IR reflectographies.

In the oeuvre of Lucas Cranach the Elder, the most representative and remarkable painting technique is found in the elaboration of the flesh tones. Cranach used the wide-practiced painting technique (north of the Alps) in which the artist varied the color and light intensity of the flesh color over a light, mainly white, ground or *imprimatura*’’.¹⁸⁹ However, the diversity of techniques used by Cranach is wide, and as many other artists,

¹⁸⁶ Barrett, S. (1995), p.77-8

¹⁸⁷ *ibid*

¹⁸⁸ *ibid*

¹⁸⁹ Heydenreich, G. (2007), p.194

he often proceeded both from light to dark and from dark to light color values.¹⁹⁰ Heydenreich describes Cranach's technique;

*“On a number of paintings, there is a remarkably free and thick first application of light flesh paint, then Cranach continued to model grayish or brownish shadows into this layer. Highlights containing high proportions of lead white were used to clarify the form and the illumination. Some faces were completed with a few glazes, other areas of flesh were instead built up laboriously in layers. Sometimes highlights were applied over brown modelling intermediate layers, with the formation of volume proceeding both from light to dark and from dark to light”.*¹⁹¹

The main pigments that Cranach used to model the flesh tones were; lead white, vermilion, vegetable-derived carbon black, ochre, red-brown iron oxide and a brown organic colorant¹⁹². These pigments seem to be familiar in hue with the pigments detected on the sample from the Norum painting. Moreover, the flesh tints are composed of a limited number of pigments, 2-4, a fact that the investigator encounters both in the works made by Cranach and in the Norum painting.

The layer elaboration and the color qualities seem to be rather common between the Norum painting and the oeuvre of Cranach. Additionally, in the Norum painting it is being evident through the examination of the cross-sections that the artist proceeded both from light to dark and from dark to light values as it could be the case in the works of Cranach. These facts contribute towards a general technique categorization of the Norum painting and a distinct similarity with Cranach, however, this technique was a widely applied practice in Northern Europe during the Renaissance. Thus the similar technique in elaborating the flesh tones is of limited value for any comparison to take place.

What is interesting to compare between the Norum painting and Lucas Cranach's oeuvre, is the flesh elaboration particularly between different faces on the same painting. Cranach used to differentiate the faces of different figures in the same painting by elaborating diverse color-layering sequence and brushwork. In that way he also lends varying personality and age characteristics to his figures as well as he increases the expressive content of the whole scene. The following example of the painting ‘St Valentine and a kneeling Donor’ (fig.61-64) depicts this diversity of techniques applied by Cranach. As Gunnar Heydenreich analyses it, it is not only the final glazes and the light accents that differentiate the characters, but also the layer sequence.¹⁹³ Of course, this particular painting of Cranach does not constitute the most representative example of flesh elaboration in comparison to his wide number of figurative paintings. One can say that this is an example where the diverse flesh elaboration reaches one of its highest peaks. Nevertheless, it is a clear example manifesting the individual features that the artist attached to his figures.

¹⁹⁰ Heydenreich, G. (2007), p.194

¹⁹¹ *ibid*

¹⁹² *ibid*

¹⁹³ *ibid*, p.195

Now proceeding to the Norum painting, it is being noticeable without much observation that the artist has applied the same flesh elaboration in the three of the four faces of the painting; the Virgin, Mary Magdalena and John. The age and personality of these three figures does not differentiate by the painting technique. Additionally, this lack of character differentiation would create a problem of identification of the historical persons of the painting if it was not the case of a wide recognizable religious art subject. It is mostly the way that the composition is arranged and the kind of clothes the figures wear that give some attribution characteristics to them. Concerning the paint layering of the flesh of Christ, this follows the same basic technique as in the other three figures, with some variations in the flesh tints and glazes, aiming in the depiction of the lifeless body of Christ.



Fig. 61-64. Lucas Cranach the Elder, "St Valentine and a kneeling Donor" c1502/03. Panel, 91.1x49.1cm. Vienna, Gemäldegalerie der Akademie der bildenden Künste. This painting by Lucas Cranach the Elder illustrates the variety of techniques that the great artist used in elaborating the flesh tones. Layer elaboration, color values and brushwork, all contribute in rendering individual characteristics to Cranach's figures.

5.3.4.3 Draperies-Layer elaboration

Two samples were taken from the draperies of the figures' vestments. In the sample B-green (fig.48) the chalk ground is impregnated in its upper part by a transparent substance, probably an isolation layer. The ground layer is followed by a light beige layer with sporadically dispersed particles of lead white, ochre, yellow, green and red pigments. The next layer is also light beige and consists mainly of ochre and big white lead particles dispersed homogenously. Then follows a green layer comprised of a fine grounded green

pigment and lead white particles. Finally, a thin and transparent green glaze is applied before the application of the varnish.

Mary Magdalena's internal vestment has the same green color. The green areas are preserved in a good condition state with the exception of the exfoliated parts in the joins of the planks (fig.37). In the areas of the exfoliated paint (in the connection of the second with

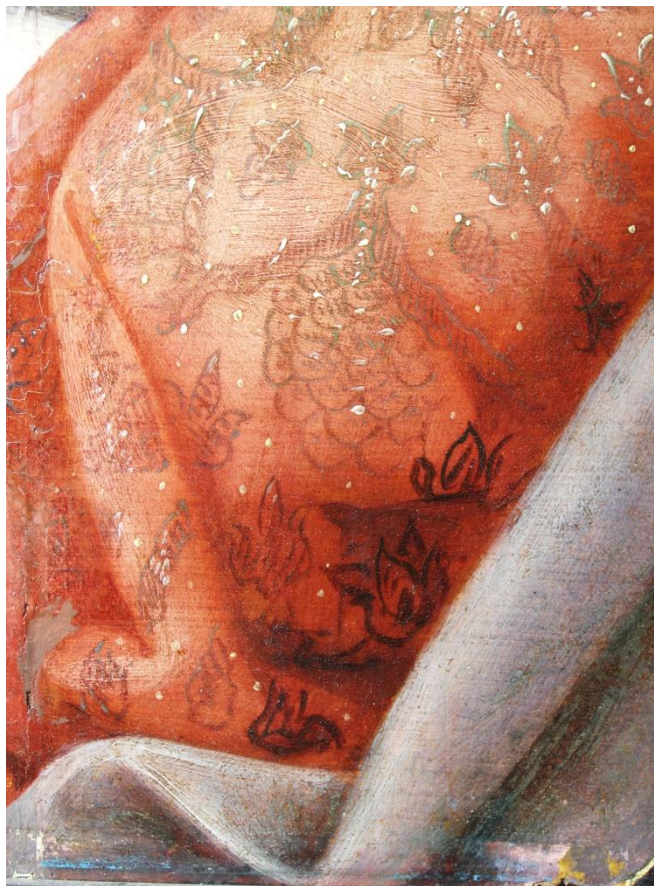


Fig. 65. Mary Magdalena's embroidered dress with flower pattern. The pattern has been accentuated with a dark, brown-black color in some folds of the vestment, probably to render additional volume plasticity to the drapery (Photo: Polyxeni Papadopoulou)

the third plank) the white ground became visible and thus the area was retouched with a green color. This color has an irrelevant nuance in comparison to the original green color.

In order to highlight the folds of the green vestments, the artist applied a transparent ochre-white layer dispersed in a significant amount of binding media –oil.

In the C-red sample (fig.49), the ground is followed by a light red layer composed of white lead, orange and dark red pigment particles. Then a thin and translucent red color layer follows. Mary Magdalena's dress has the same tinted orange-red undermodelling layer in all its areas. Then the artist formed the volumes and the folds of the drapery with thin and transparent red color (fig.65). On the top of the paint layers the artist added the embroidered flower pattern with grey-green color and he stressed

the details of the flowers with opaque lead white applied with fast and short brushstrokes. Distinct is the fact the pattern has been accentuated with a dark, brown-black color in some areas, probably with the intention to render additional volume to the drapery. The flower pattern is completed with small lead white and ochre dots. The braid details of Mary Magdalena's dress and cloak, John the Evangelist's mantle and the Virgin's cloak are also pronounced with slightly impasto lead white-ochre color that resembles gold (fig.66).

John the Evangelist's red mantle is also red, but of another, darker nuance than Mary Magdalena's red dress. The artist has evidently used different pigments for the formation of these vestments. On the other hand, layer elaboration seems to be similar; a light red undermodelling layer covers the whole area and then thin color layers has been applied in order to form the volume and the folds of the drapery.

Another red color is observed on the Virgin's dress. Here, the color has an even darker, red-brown hue. The layer elaboration seems to slightly differentiate in this case, with distinct white lead highlights on a darker background red color.

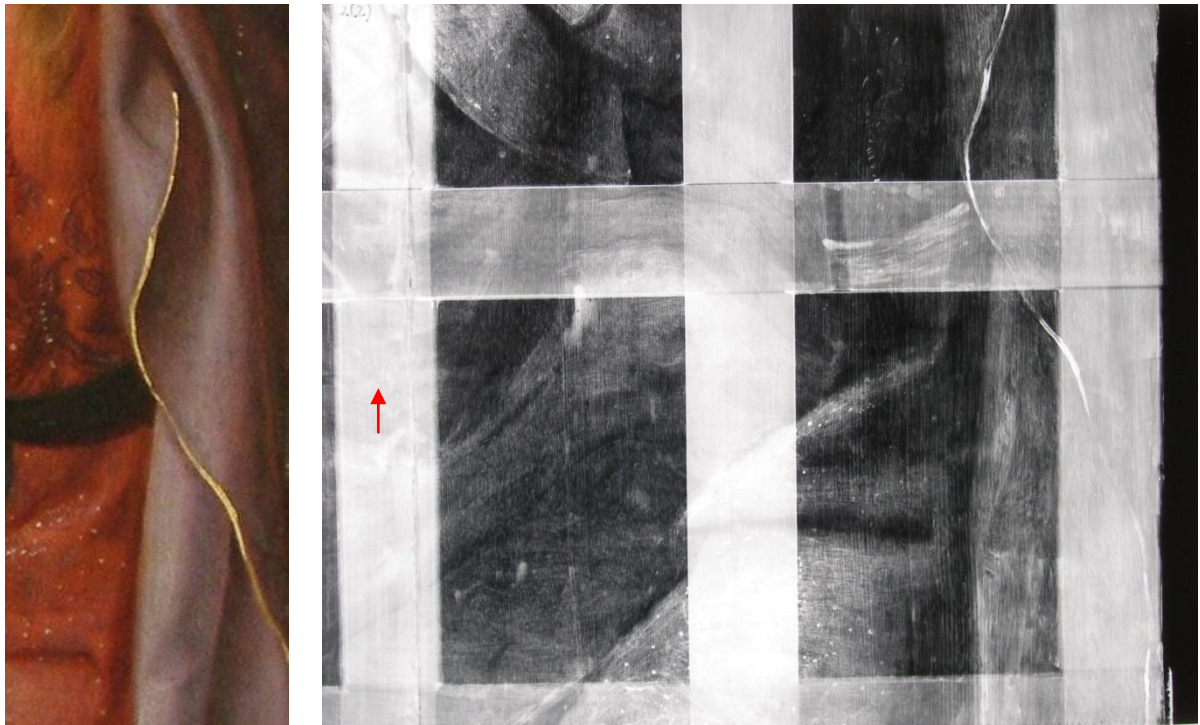


Fig. 66-67. (66) left: Detail from Mary Magdalena's light purple cloak with its characteristic braid. The color of the braid resembles gold and it contains important quantities of lead white. This is getting clearly evident in the X-radiography (fig.67,right). Moreover, the light dots on the flower patterned dress are also distinct in the X-radiography, a fact that stresses their construction material, lead white. Finally, a dowel is visible on the left vertical slat of the X-radiography. The dowel is pointed with a red arrow. This dowel can be found in the third vertical slat and between the fifth and the sixth horizontal crossbars (reverse side). (Studio Västsvensk Konservering, Carin Petersson, Polyxeni Papadopoulou)

In the oeuvre of Lucas Cranach the Elder, apart from the flesh paint, no other passages reveal a greater diversity of painting materials and techniques than his red draperies.¹⁹⁴ As with the flesh tones, the artist used to thoroughly elaborate the red draperies by using a wide range of different pigments, undermodelling and layer succession. Even in one and single painting one can find different painting techniques in a variety of red draperies. Cranach used to differentiate fabrics made of wool, velvet, moiré and shot silk, and in order to succeed this he used pigments such as vermilion, red lead, red iron oxide, lake pigments, vegetable-derived carbon black, soot black, lead white and lead-tin yellow.¹⁹⁵ In the Norum painting, a differentiation in red color nuances is apparent, however, there cannot be detected any systematic effort for particular fabric differentiation. Furthermore, one cannot detect the same high level of perfectionism in the most subtle details of the red draperies, a quality that Cranach was strongly supporting together with Dürer:

*“You must paint in such a way that a red object is overall red and yet sublime...and not in such a way that someone can say: look how beautifully red the garment is in one part but has white paint or pale spots on another...The shadow must also be done in such a way that no one can say that a lovely red has been botched with black...”*¹⁹⁶

¹⁹⁴ Heydenreich, G. (2007), p.183

¹⁹⁵ *ibid*

¹⁹⁶ *ibid*, p.184, after Heimberg 1998, 45, after Rupprich 1966, 393

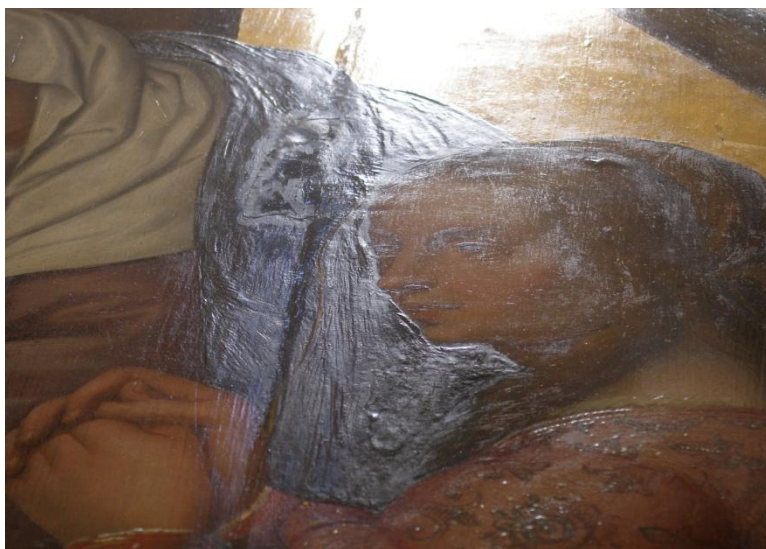


Fig. 68. Mary's blue cloak creates ridges in the connection with its surrounding areas. The paint layer of the cloak is sufficiently thick in comparison with the rest of the paint layers and has a much more coarse character (Photo: Polyxeni Papadopoulou)

Continuing with the drapery description in the Norum painting, the luminous white shroud of Christ, his loincloth, and the veil of Mary, consist of high proportions of lead white and this is getting clearly evident in the X-radiographies (fig.57). Surprisingly enough, the X-radiographies showed that Mary's blue cloak contains almost equal proportions of lead white with that of Mary's white veil (fig.57). Such a big concentration of lead white

has not been noticed in any other of the color draperies. A different kind of painting technique has probably been applied for the formation of the Virgin's blue cloak. Visual observation also points to this direction. The blue cloak has an opaque character, and the methodical multilayered painting technique/transparent oil technique of the rest of the draperies is not clearly distinct here. Moreover, the surface of the paint layer is coarse if compared with the rest of the painting's color layers, and it creates clear distinguished ridges with the surrounding areas, if observed with both incident and raking light (fig.68). In the ridges the blue paint layer is very thick and it is obvious that it was applied after Mary Magdalena's face was completed. A common practice of methodical painting is that the artist forms gradually and simultaneously the main areas of a painting. If it is supposed that the blue cloak is original, then it seems very peculiar that the artist completed a central area of the painting –Mary Magdalena's face– and then applied the main body of paint in the neighboring area –the Virgin's blue cloak.

This layer's disparate and unique character is totally unrelated with the rest of the painting technique of the Norum painting, and raises questions about its authenticity. An attempt to detach a paint sample from Mary's blue cloak was canceled due to the layer's brittleness. However, the outcomes of the visual observation are sufficient so as to strongly support the fact that the blue paint layer constitutes a later intervention.

5.3.4.4 Brushwork

About the painting execution in the flesh parts, the X-radiographies of the Norum painting reveal that the painter worked with short, careful brush strokes, especially in the faces. Here, the brush strokes are laboriously executed and the painting technique is less free and impulsive. On the other hand, other areas and especially the body of Christ were painted

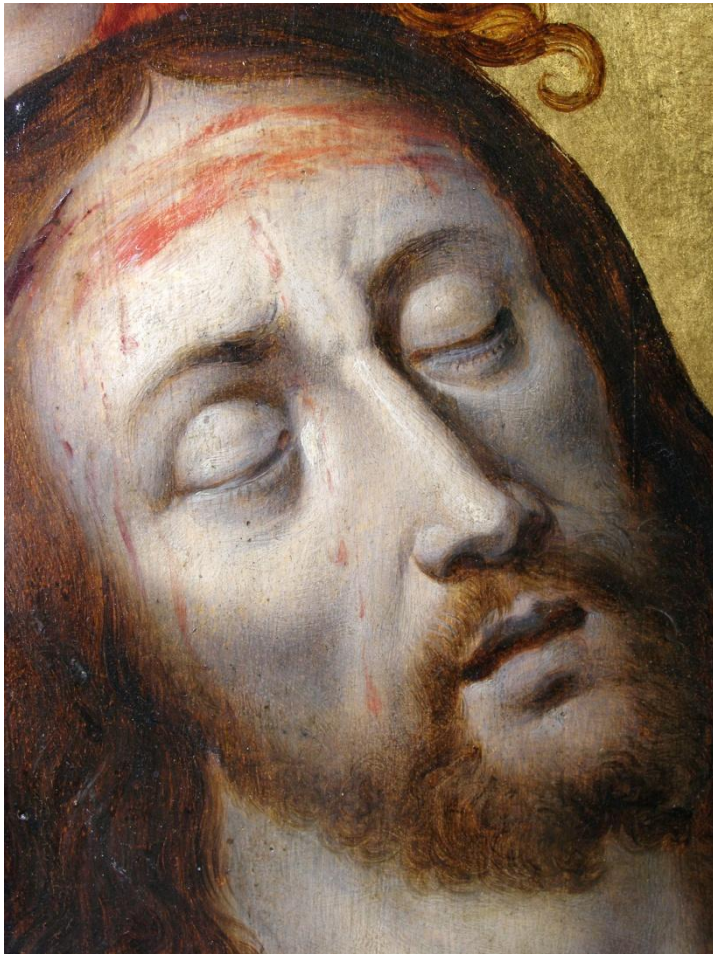


Fig. 69. Detail from the face of Christ. The flesh parts have been executed with short and blunt brush strokes. The final highlighting was carried out with lead white and short, careful brushstrokes. The beard is here executed with great attention to detail (Photo: Polyxeni Papadopoulou)

rapidly with longer brushstrokes and with a broader brush than the one used in the faces. Here we meet a greater degree of spontaneity (fig.70).

The faces are painted without distinct shade-light contrasts and with a rather limited chromatic scale. In the X-radiographies the virtual relief of the faces is not particularly pronounced (fig.38).

The hair of the figures is laboriously executed with great detail (fig.69). In the draperies, the artist has applied in general terms a much more free and spontaneous technique, with wide and long brushstrokes (fig.71-72). For the formation of the green draperies' folds, the artist applied a light yellow glaze (fig.37). Here, the form of each individual brush application is clearly visible and it has an artistically more spontaneous character, at least in comparison

with the smooth overall effect of the brushwork in the rest of the painting. The formation of the draperies' braid is also characterized by a "flowing" brush application (fig.66-67).

Cranach's technique varied significantly and in a much greater degree than the technique of the Norum painting, with some faces executed with rapid and impulsive brush strokes and others showing a much smoother brush application (fig.62,63,64). In the last case the X-radiographies present the faces with a very pronounced virtual relief. Cranach's paintings have generally an inner tension, being a result of his capacity for poignant composition and the interplay of color and tonal values.¹⁹⁷ This is obvious in his compositions as a whole. Moreover, according to Gunnar Heydenreich;

"In the panel paintings, gently dispersed passages of paint contrast with clearly visible brushwork, stippling application is juxtaposed to a stroking or hatching technique, slightly 'pastose' touches of paint accentuate enamel-like smoothness and barely differentiated passages of paint contrast with those in distinct graphic detail".¹⁹⁸

¹⁹⁷ Heydenreich, G. (2007), p.189

¹⁹⁸ *ibid*

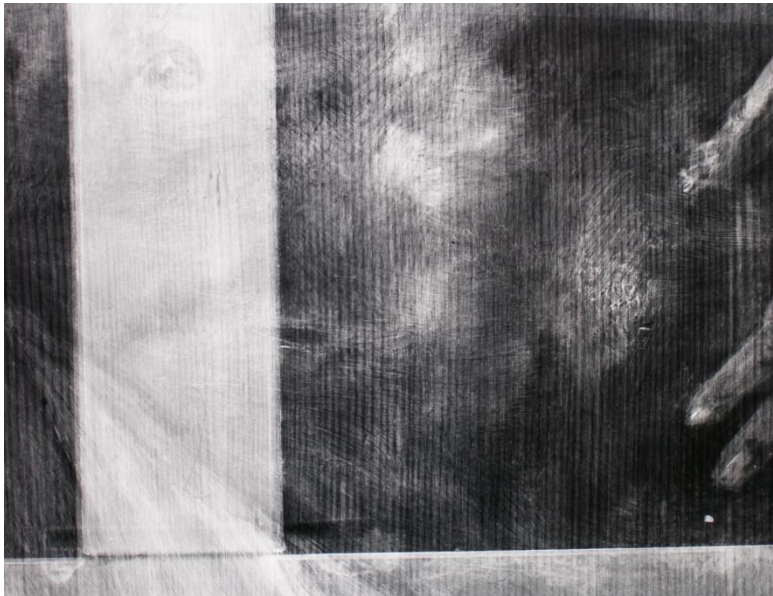


Fig. 70. X-radiography, detail from the body of Christ. Here, a much more free and spontaneous brushwork has been applied, at least in comparison with the execution of flesh parts in the faces of the figures. On the down part of the vertical slat, one can observe the existence of a dowel. The specific place of the dowel is on the fifth vertical slat and between the fourth and fifth horizontal crossbar (reverse) (Studio västsvensk Konservering, Carin Petersson, Polyxeni Papadopoulou)



Fig. 71-72. (71) Far left: Detail from Christ's loincloth. (72) Left: Detail from X-radiography. The artist has applied here wide and spontaneous brush strokes (SVK, Carin Petersson, Polyxeni Papadopoulou)

5.3.5 *The varnish layer and the detection of retouchings*

The Norum painting is covered with a varnish layer. This fact is obvious with naked-eye examination and is further verified in the UV fluorescence images. From the UV images it is getting evident that the varnish was applied with a big brush and with brushstrokes towards different directions, including diagonal (fig.73). That the varnish layer is not the original becomes clear in one of the UV images. Here, a number of retouchings laying under the varnish layer can be visible (fig.74,75). It is possible that there are more retouchings laying under the varnish layer –such as parts of the Virgin's blue cloak, but the varnish layer obscures them and the UV fluorescence lighting cannot in this case detect them. Unfortunately, the removal of the varnish was not possible to carry out in the frame of this thesis and thus much of the underlying information remained concealed.

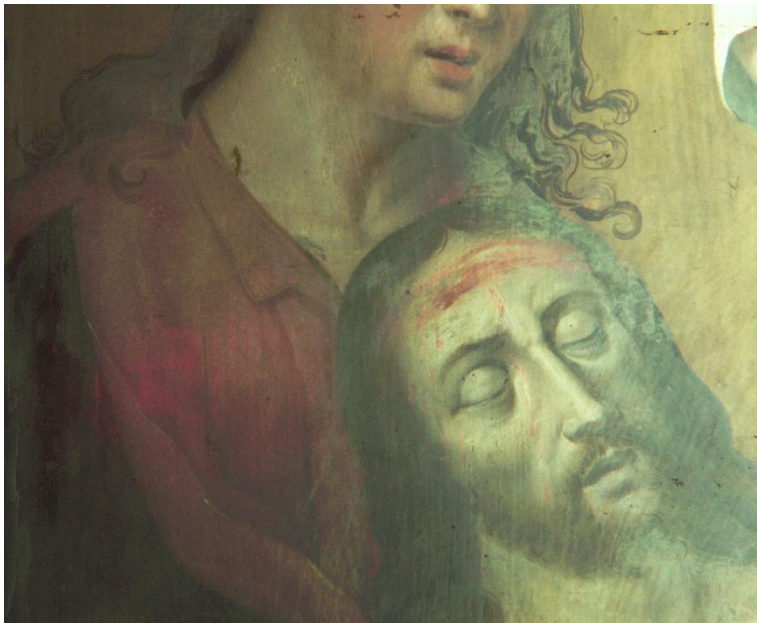


Fig. 73. UV-fluorescence, detail with John the Evangelist and Christ. The painting is covered with a varnish layer applied with a wide brush towards different directions. The darker areas in the hair of the Evangelist are later retouchings that were carried out upon the varnish layer (Photo: Ingalill Nyström, Polyxeni Papadopoulou)

On the other hand, all the retouchings that had been carried out on the varnish layer were easily detected. The retouchings that were applied in order to cover lacunae created by the cracks were easily observed with naked-eye examination. However, now their precise extent was uncovered. As it is often the case with retouchings, they do not only cover the exact area of the lacunae but they are extended in their adjacent areas. By this way they conceal original color layers.

By further observation, the painting's investigation came across another, more important revelation: extended parts of John the Evangelist's hair had been overpainted. (fig.73) These retouchings were obviously carried out by a rather skilled hand, and that is the reason why without the application of the UV fluorescence they would not had been detected. The hair of the Evangelist had another character before the application of the retouchings –most probably a more straight one, with less pronounced locks. The person that carried out the retouchings wanted obviously to render a more vivid feeling to the scene, with the hair of John to be slightly taken off by a gentle breeze. This revelation is of minor importance for the investigation process and the comparison with the oeuvre of Cranach. However, it constitutes an important fact about the character and aesthetic qualities of the painting and should be taken under consideration in future studies.



Fig. 74. UV-fluorescence, detail from Mary Magdalena's green, left sleeve. The extend of the retouching carried out on the crack between the second and the third plank is clearly visible here. However, one can detect that there is a former retouching covering the same area of the crack and being placed under the varnish. The former retouching is pointed with an arrow (Photo: Ingalill Nyström, Polyxeni Papadopoulou)



Fig. 75-76. Detail from John's red cape. (75) left: photograph in the visual spectra, (76) right: photograph taken with UV-fluorescence. Although it is possible with naked-eye examination to detect the retouchings, it is further possible with the use of UV-fluorescence to distinguish between the retouchings under the varnish layer from the retouchings over the varnish layer (Photo: Ingalill Nyström-Larsson, Polyxeni Papadopoulou)

5.4 Provenance studies II: The cradle, documentation and technology

The panel substrate of the Norum painting bears a sliding cradle on its reverse. Cradle or parquetage (French), constitutes an auxiliary reinforcing construction being laid on the reverse of a panel painting. The original construction purpose of a cradle is to keep a painting flat without restricting its lateral movements that take place due to environmental changes. However, its good results are widely questioned nowadays. David Bomford alleges that *“The paradox of this type of treatment is that, if a cradle functions correctly, the panel was probably strong and stable enough not to need it in the first place”*.¹⁹⁹

However, as the history of conservation witnesses, cradling served more than the above fundamental reason; while it started as a functional object, it eventually became an aesthetic one.²⁰⁰ The Norum painting's cradle and its technology is being studied in this particular ‘provenance studies’ part of the thesis because it is considered to be a later addition; The painting was most probably created during the 16th or 17th century, while the first cradles started to be constructed in the second half of the 18th century.²⁰¹

5.4.1 Technological development of cradling

The first cradles were evidently rigid constructions, while the first movable/sliding cradle dates back to 1770, when Rubens's *La Kermesse*, in Louvre, was cradled by Jean-Luis Hacquin.²⁰² Bergeon, explains the original philosophy of the sliding cradle; *“The sliding cradle is a great French discovery of the eighteenth century; the cross-grain crossbars, which ensure the real security of the panel, are mobile and slide in fixed slats, which are*

¹⁹⁹ Bomford, D. (2009), p.36

²⁰⁰ Marijnissen, R.H. (1967), p.46

²⁰¹ Schiessl, U. (1998), p.216

²⁰² Bergeon (1998), p. 270, Brewer, Forno (1997), p.211, Nicolaus (1999), p.59

glued in the direction of the grain of the support.²⁰³ The purpose of these cradles was to hold a panel flat while avoiding splits through the use of the sliding crossbars.²⁰⁴ The movement of the wood is always happening along its width and because of this, the sliding horizontal crossbars are the ones that are not glued and adhered solidly to the panel.

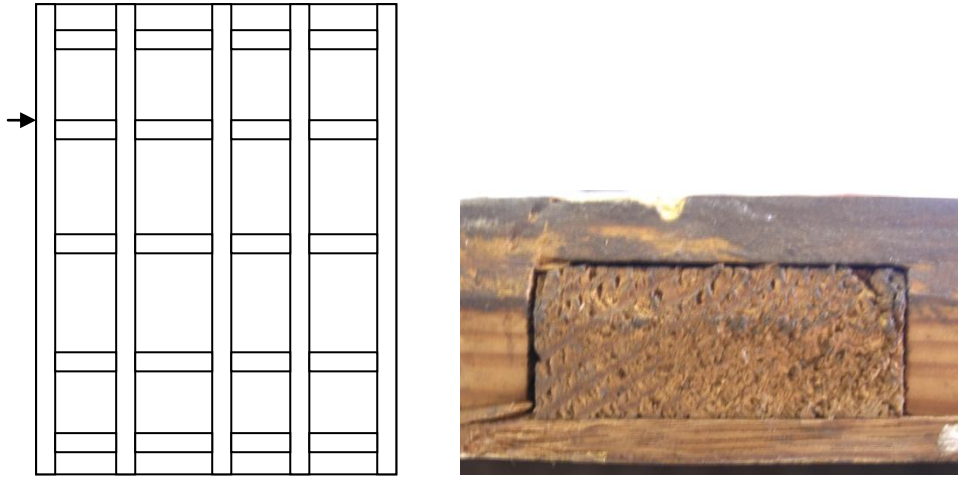


Fig. 77 (left): Schematic representation of a sliding cradle. The vertical, fixed slats are glued in the direction of the grain of the support and the horizontal, cross-grain crossbars, are held in place by the fixed slats. The horizontal crossbars transfix the vertical slats as it is presented in figure 78 (right). The picture is taken from the left side of the panel, as it is pointed with the arrow in fig.77. The bottom part is the panel of the painting superimposed by the cradle. The middle part constitutes the horizontal crossbar (Schematic representation and photo: Polyxeni Papadopoulou)

Thinning of the support

Before the placing of a cradle the panel had to be thinned down. In the case of an already deformed panel, the thinning would allow it to easier be flattened without any immediate obvious damage occurring.²⁰⁵ Bergeon describes the thinning process as it follows; ‘*The wood was first prepared by applying damp linen cloths to introduce moisture to it, then letting it dry under pressure and, if necessary, inserting pieces of wood to prevent it from resuming its previous curvature*’.²⁰⁶ The thinning of the panel was done with the help of a saw and then the saw marks were usually smoothed with a tooth plane or smooth plane.²⁰⁷ Under this procedure even the larger-sized panel could be thinned down to 2-5 mm.²⁰⁸

Main kinds of cradling

Knut Nicolaus divides the kinds of cradling that have generally been constructed in four main categories, putted in a chronological order; the *flat cradling*, the *raised, sliding cradling*, the *button cradling* and the modern *roller-mounted wood/plastic/metal cradling*.²⁰⁹ The oldest form of cradling is the one of the flat cradling which developed in the second half of the 18th century;

²⁰³ Bergeon (1998), p.269

²⁰⁴ *ibid*, p.270

²⁰⁵ Bobak, S. (1998), p.371

²⁰⁶ Bergeon (1998), p.270

²⁰⁷ *ibid*

²⁰⁸ *ibid*

²⁰⁹ Nicolaus (1999), p.59

Here the fixed slats are broad and flat and the glued area is rather extended. By this way and because the fixed slats restrict the panel from its moving flexibility, the flat cradling is more prominent to cause damage than the raised cradling.²¹⁰ The raised cradle is a development of the former technique and here the glued area is limited and the system has a greater mechanical stability.²¹¹ In the button cradling the glued area is distinctively reduced to the minimum, and instead of longitudinal slats, individual glued buttons were used to hold the cross-slats in place.²¹² Finally, in the roller-mounted cradling the buttons are made of wood or plastic and they are fastened with screws instead of glue.²¹³ The cross-slats are made of some kind of metal and they run on either rollers or ball bearings.²¹⁴

5.4.2 Cradling in Germany

To study the main characteristics of cradling and its development in Germany is an obvious choice when comparing to the Norum painting. The Norum painting was in Germany and Potsdam until approximately 1949. There is no other formal evidence to prove that it could have been in another country before this and while cradlings were still being applied.²¹⁵ Moreover, the practicing of cradling seems to have been an extended restoration measure in Germany.

According to Schiessl,

*“sliding cradles started to be used in Germany in the eighteenth century and cradling was the normal procedure after double-sided paintings were split; it was also the classic system used to reinforce thinned panel painting supports. During the nineteenth century there was no discussion about the quality of cradling; it was a common and unquestioned practice and in some collections, all or most of the panel paintings were systematically cradled”.*²¹⁶

A fact about the popularity of cradles is mentioned by H. Dietrich of the Hochschule für Angewandte Kunst in Vienna. He mentions that oral legend, reports that between 1825 and 1835, most of the panel paintings in the Kunsthistorisches Museum in Vienna were treated, thinned, flattened, and cradled.²¹⁷ If paintings were damaged, the cause was usually attributed to a technically incorrect cradle.²¹⁸ The first discussions about cradling and its possible negative effects can be found in the literature during the 1930s.²¹⁹

The quality of the wood species used for the cradle’s slats along and across the grain may be significant; however, a wide range of wood species were used: some laboratories used softwood cradles, while others preferred cradle slats of the same wood species as the

²¹⁰ Nicolaus (1999), p.59

²¹¹ *ibid*

²¹² *ibid*

²¹³ *ibid*

²¹⁴ *ibid*

²¹⁵ The construction of cradles was gradually limited during the 20th century.

²¹⁶ Schiessl, U. (1998), p.217

²¹⁷ *ibid*, after Dietrich 1994

²¹⁸ Schiessl, U. (1998), p.217

²¹⁹ *ibid*

original support.²²⁰ It was proposed that the slats glued along the wood grain should show growth-ring structure in a perpendicular position with respect to the support.²²¹

5.4.3 *The cradling of the Norum painting*

The Norum painting has a sliding, raised cradle (fig.3), with its slats having the approximate width of 3.1-3.4 cm. The slats, especially the rigid ones, are not placed in fair distances with each other; wider spaces are interchanged by narrower spaces between them. Concerning the kind of wood it seems to be pine.²²² By observing the limited unpainted parts of the cradle, its wood has a pale yellow color, is moderately soft and has a smooth surface. Except of these characteristics –which are representative for pine wood, this has some qualities that make it a good choice for the construction of a cradle: It is easy to elaborate and it ranks high in stability –it presents no warping and low shrinkage.²²³

It is obvious that the cradle was placed on the panel for functional reasons. The painting's planks had started to show disruptive stresses with each other²²⁴ -being evident in the ground and paint layer's exfoliation in the cracks, and the cradle was constructed in order to keep the panel substrate in place and minimize further deterioration. This conclusion is additionally derived from the fact that the rigid slats are directly placed along the connection of the planks (fig.35,67). That the rigid slats were not placed at these specific positions by chance is enhanced by the shorter and additional slat on the lower-right corner of the back of the panel (fig.39). This slat was added so as to offer supportive strength to a crack running along the middle of the particular plank. The slat has the same length as the crack.

The cradle is generally preserved in a good state, however, there have been noticed a limited insect attack in the X-radiographies (fig.38). No insect attack was observed externally on the reverse of the panel. Nevertheless, dust and spider nets were rather extended on the reverse and in the corners of the cradle (fig.10). The first vertical slat (front side) has been pierced by worms and the tunnels are identified by dark tones in the X-radiography. This happens because the wood in these areas has been weakened.²²⁵ There has also been a further but very limited insect attack in the seventh vertical slat. The insects have perforated the cradle and not the panel because their action is limited in the area of the cradle. However, the precise depth of the tunnels is unknown because X-radiography does not provide depth-resolved information. The insect activity seems to have stopped and if there were remnants of dead insects they were probably removed during the transportation of the painting from the church to the K-Konservator laboratory.

²²⁰ Schiessl, U. (1998), p.217

²²¹ *ibid*

²²² Personal contact with Leif Berg (17th March 2010)

²²³ Regis M. (2007), p.1-12

²²⁴ There is flaking of the ground and color layers in the areas along the connection of the planks.

²²⁵ Pinna, D. (2009), p.31

5.5 Evaluation of the results from the technical analysis

Before drawing the final conclusions and discuss about the degree that this thesis managed to achieve its goals, it is important to carry out a preliminary evaluation of the results acquired by the technical analysis. The selection of the analytical tools was made based on my own background and knowledge of art historical applications. In the end of the chapter a synopsis and discussion took place about the new possessed knowledge. However, the goal was to derive as much information as possible from the Norum painting in its tangible form. All the individual parts of the object –from the panel support to the varnish layer had to be thoroughly examined and compared with the oeuvre of Cranach. The limitations of this examination are mostly depended on the available equipment and literature determined by the prerequisites of a master thesis, rather than my own cognitive knowledge and experience.

All the information that was possessed after the technical examination of the Norum painting and can contribute to the thesis’s investigation goals is presented here;

Table 4, Evaluation of the results from the technical analysis

	Main parts of the painting that have been investigated	Acquired result from the examination of the Norum painting	Comparison with the oeuvre of Lucas Cranach the Elder	How decisive is the result for the attribution of the Norum painting to the Cranach workshop and why? Further implications?
1	Dimensions of the panel	104.8x73.7/ Ratio of height to width 4:3 (relation to the Pythagorean numbers and the Renaissance art ideal)	The ratio 4:3 is often met in the oeuvre of Cranach	The result has no decisive value. The dimensions of a panel play a limited role in the particular investigation. They have an abstract character without further implications, at least for the current point of the investigation
2	Panel planks’ width	Approximately 25cm	No comparison took place	A comparison would not have a decisive value for the comparison with the oeuvre of Cranach. However, the width of the Norum painting’s planks shows a relevancy with the width of the planks in panel paintings of the 15 th -17 th centuries in the Northern countries (25-29cm)
3	Panel construction-joining technique	Butt join aligned with dowels	Butt join was the main technique applied by Cranach/his joiner. Occasionally butterfly keys and pegs have been detected. Application of dowels is not mentioned in G. Heydenreich’s book (2007)	The result has moderate decisive value. There have not been detected any dowels across the joins of the panel paintings attributed to Cranach. The fact is solely based on the investigation carried out by G. Heydenreich (2007)
4	Panel support - kind of wood	Oak	Mostly beech and lime. There are very few and uncertain occasions where Cranach used oak.	The result has high decisive value. The kind of tree used by a painter is mostly related to the tree resources of his geographical area. With that reasoning and concerning the geographical areas that this thesis

				cover, oak tree was mostly used in the Low countries, in the Rhineland around Cologne and in south Germany
5	Preparatory layers - ground	Chalk ground	Chalk ground	The result has a low decisive value. Chalk ground has been widely applied north of the Alps
6	Area of the support covered with the ground layer	Fully covered including the edges of the painting	Priming barb (untreated area in the edges of the painting – the panel was inserted into its frame before the ground had been applied) and incised lines often met.	The result has moderate decisive value. In the workshop of Cranach the sequence of panel and frame production was not consistent
7	Preparatory layers - isolation	Detected in one of the five samples - B-green sample	Applied often	The result has no decisive value. No conclusion can be reached due to insufficient sampling and lack of equipment. Additionally, the application or not of an isolation layer would hardly have further implications for an attribution process
8	Preparatory layers - imprimatura	No mutual imprimatura layer was detected in the A,B,C color samples	Overall translucent toning of the ground of a painting. Light reflecting white or reddish imprimatura	The result has no decisive value. The application or not of an imprimatura would hardly have further implications for an attribution process
9	Underdrawing	Could not be detected due to method limitations –IR reflectography	Mostly use of a pointed brush and a black pigment in a liquid medium. Short, impulsive, curved strokes. Hatching,	No result
10	Gold background-subsequent	Not original	No comparison can be carried out in this case because the gold background is not original	No result
11	Gold background-original	Original background	Gold backgrounds were not favored by the artist. Concerning the five detected Lamentations , none of them bears a gold background	The result has a moderate decisive value due to the lack of insight in the whole oeuvre of Cranach.
12	Painting technique on the whole/transparent oil technique	Transparent oil technique	Transparent oil technique	The result has no decisive value due to the vast application of the technique in the Northern Renaissance in general
13	Layer elaboration in the flesh parts	Proceeding both from light to dark and from dark to light color values –A-sample/flesh (with some reservations about how representative the sample is). In any case a common layer elaboration and pigment choice has been applied in most of the flesh parts of the painting	Proceeding both from light to dark and from dark to light color values has widely been applied by Cranach	The result has high decisive value especially if combined with the results in (14) and (16). The mentioned technique was widely practiced and does not have further implications. However, Cranach differentiated the layer sequence between the different figures in one and the same painting, both in terms of layer succession and pigments used
14	Layer elaboration in the red draperies	Three different red draperies in terms of color and pigments used.	Pigments used: vermilion, red lead, red iron oxide, lake pigments, vegetable-	The result has high decisive value especially if combined with the results in (13) and (16). Cranach

		Although the pigments vary, the common layer elaboration resulted in relevant fabric-quality effect	derived carbon black, soot black, lead white and lead-tin yellow. The artist gave special attention in rendering different fabric effects between the different red draperies in one and the same painting. In order to succeed this he varied significantly the layer elaboration both in terms of layer sequence and choice of pigments	gave special attention in rendering different fabric effects between the different red draperies in one and the same painting
15	Blue drapery/Mary's cape	Most possible not original but subsequent	No comparison with the oeuvre of Cranach can take place in this case	No result
16	Brushwork	Short, careful brushstrokes in the faces. Brushstrokes with a wider brush in the body of Christ. More impulsive brushwork in the draperies. The brushwork in the four faces of the figures is identical	Interchange of rapid, impulsive and clearly visible brushwork with smooth application/enamel-like smoothness even in one and the same painting	The result has high decisive value especially if combined with the results in (13) and (14). Cranach used to give special attention in the elaboration of the brushwork in order to render individual characteristics (especially in the faces) to his figures even in one and the same painting
17	Varnish layer	Not original but subsequent	No comparison with the oeuvre of Cranach can take place in this case	No result
18	Retouchings in the hair of the Evangelist	Subsequent	No comparison with the oeuvre of Cranach can take place in this case	No result

In the evaluation, the bigger importance for the attribution process, possess the results from the examination of the layer elaboration and the brushwork. This happens because here it lays the artistic identity of the painter. At this point, one can confront the basic difference between the Norum painting and the oeuvre of Lucas Cranach the Elder. Cranach applied diverse painting techniques in order to render individual characteristics to the different elements of a painting. This fact cannot be met in the Norum painting, where the technique variations are limited and there is a striking uniformity throughout the painting.

Information about the execution and material of the underdrawing would potentially be of a great benefit for the investigation; here it also lays the "fingerprint" of the artist. On the other hand, the materials and the construction method of the panel can definitely serve the investigation process with important evidence; however, their results can many times be highly ambivalent. For example, the general absence of oak panels in the oeuvre of Cranach cannot exclude the possibility of using it in isolated cases. On the contrary, if there is enough evidence that a painting can be attributed to a specific artist, and the painting bears the wooden support that this artist most usually uses, then this fact can constitute an additional evidence supporting the specific attribution.

Concerning the choice and application of other materials such as the chalk ground, that has in the specific case no great value for the comparison with Cranach. Chalk ground was widely used in Northern Renaissance. In this case the investigation does not proceed

further. However, if the ground was not chalk but gypsum then the investigation would take a whole new turn and an attribution to Cranach would be highly questioned.

Additional results could be achieved with the elementary analysis of the pigments of the Norum painting. A comparison with the pigments used by Cranach could aid the whole investigation. Nevertheless, such a process would demand to carry out extended studies, far beyond the frame of this master thesis. Moreover, if the results of the investigation are satisfying so far, then no further analysis needs to be carried out.

6. Final conclusions and discussion

In the course of this Master thesis, valuable new knowledge has been acquired concerning Renaissance art history, technical documentation of panel painting with scientific methods, and insight in the oeuvre of Lucas Cranach the Elder. Nevertheless, the decisive factor for achieving the thesis's demanding goals was basically lying on combining this knowledge through the application of critical thinking. By answering to the main questions about the Norum painting and its attribution hypotheses, what I personally gained above all, is to understand how complicated an actual attribution process would be, and how a conservator has to act professionally by weighting constantly the pros and cons of his/her conservation background. By intending to apply a multidisciplinary analytical model for this thesis, the difficulties and problems that I met were numerous; the construction of a suitable art historical model was a complicated process limited by both my existing, though limited art historical knowledge, and by the numerous limitations that the examined object set to the investigation. On the other hand, the unknown background of the painting in combination to no previous professional examination carried out on it, minimized the usefulness of advanced technical and scientific applications. But let us take a detailed view in the final results;

The Norum painting is, in a wider sense, placed among the artistic expressions of the Northern Renaissance art. The painting's composition follows the Renaissance ideal for symmetry and balance, geometrical perspective and naturalistic representation. The artist has applied the "transparent oil technique", with tint color layers and glazes being elaborated on a highly reflecting, white ground/chalk.

The original gold background –lying under the subsequent gold background, is a common medieval element and contrasts to the otherwise Renaissance character of the painting. This fact combined with the kind of wood of the panel's support –oak, are the two elements that could possibly support an attribution to Cologne school (oak was used for panel-making in the Rhineland around Cologne). However, this hypothesis needs to be further investigated in potential future studies.

Concerning the hypothesis about the attribution of the Norum painting to Lucas Cranach the Elder, it can be alleged with great certainty that the painting was not produced in his workshop. This fact is mainly based on the prominent humanistic qualities of his oeuvre, and the way that he managed to convey these through vibrant compositions (including his Lamentation scenes) and a detailed painting technique stressing individual characteristics. By employing creative means such as layer elaboration and brushwork, the artist managed to render individuality to each single constituent of his paintings. The Norum painting on the other hand, has a less vibrant composition, with constraint gestures and uniformity in terms of style and technique. The flesh elaboration follows the same layer stratigraphy and the same color pigments –with the exception of the pale flesh color of the dead Christ. Specifically about the draperies, after excluding the possibly subsequent blue drapery of the Virgin's cape, the rest have been elaborated applying a technique that resulted to a common effect/fabric quality. No great diversions can be detected here in terms of layer elaboration. Proceeding further, an additional striking element that

eliminates a possible attribution to Cranach is the gold background. Gold backgrounds were not favored by Cranach, however the case here develops further; Cranach paid special attention to the elaboration of landscape details. This is a critical point since in the art of the Reformation (Cranach had a close relationship with Martin Luther and produced numerous portraits of the reformer and his family) detailed representation of nature was an important element. Lamentation scenes traditionally take place in a landscape depicting Golgotha, and in the four out of five Cranach Lamentations detected in this thesis, nature has thoroughly been represented. So, although an acquaintance with the oeuvre of Cranach has been limited in terms of literature resources, it is unlikely that he would apply a gold background to his Lamentation scenes. Another, even more concrete argument, is related to the oak support of the Norum painting which contrasts to the kinds of wood favored by Cranach; beech and lime. Although other similarities and differences have been detected as well (construction methods), they do not constitute determining factors for clarifying the hypothesis about the attribution to Cranach.

The most realistic attribution hypothesis so far, has been proposed by the curator of the Groeningemuseum in Bruges, Till-Holger Borchert. According to Borchert, the Norum painting certainly looks Flemish. Through our communication, he proposed that the composition of the Lamentation scene of the Norum painting is relevant to that of Flanders of the beginning of the 16th century. By observing art from that period, like the panel paintings of the Netherlandish Gerard David, a common composition structure seems to be relevant. The color nuances and painting technique are also related. However, no further relation can be detected, at least for the moment. The gold background of the Norum painting does not find respective examples in the Flemish art of the particular period. Moreover and according to Borchert, the execution seems to be somewhat later from the late 16th or early 17th century. Borchert recognizes a slight similarity between the faces of the figures in the Norum painting and the ones in the oeuvre of Peter Paul Rubens. An influence from the art of Rubens seems to be possible, especially based on the faces' characteristics such as the round eyes and lips. Nevertheless, the disparate character of the Norum painting is present in this case as well, and no connection with the excessive composition and vibrant technique of Rubens can be alleged. Though, an additional final element that justifies the possible Flemish identity of the Norum painting is its oak support. After studying the wood of the panel in detail, the conclusion about the nature of the support was reached. The support is made of good quality oak planks cut radially (from the three planks the one is radial and the other two close to radial). Borchert was justified in this case since he proposed that the support would be oak from the very beginning.

The technical examination, offered the investigation together with the detailed documentation of the painting, the additional benefit of getting insight about possible subsequent interventions. Thus, the application of the UV fluorescence revealed that the locks of St John the Evangelist are subsequent and not original. This is a very important fact that although it had no specific benefit for the current investigation, it could be of valuable help for future examinations. In certain cases it could mislead the investigator towards wrong attribution paths.

The Norum painting combines elements from different periods and techniques. That the execution seems to be subsequent in comparison to the composition, points towards the

realistic possibility of the painting being a copy. Under these circumstances, the existence of the authentic gold background with its old, medieval character, makes the comparison with the much later execution (late 16th early 17th century) to be even more disparate. The possibility that the painting is a copy gains in that way even more supportive evidence. Copies were a very common phenomenon in the art of that period and an extended export trade of devotional panels from Netherlands had already started to take place in the beginning of the 16th century. A restricting factor that could potentially be of important aid for the investigation of the painting's origin is its reverse. However, this has been thinned down in connection to the cradle as a later intervention, and important evidence has been lost forever. Possible tool marks, stamps, seals, inscriptions or even painted scenes is that were once placed there, and the fact that they would constitute valuable sources for the attribution process is indisputable. The only information that the reverse bears currently, is the information which supports Christina Grimpe's quotation that the painting was once in Potsdam, Germany (stamp). Further inscriptions (numbers and characters) were hard to decode since the painting is now in Stenungsund, Sweden, and these inscriptions were most probably written in Potsdam, were the painting was probably cradled. Cradling was widely practiced in Germany of the 18th century and because the painting was in Germany before 1949, it is suitable to hypothesize that the painting was cradled there.

Systematic approaches to reach Karl Teodor Friedrichs descendants (Christina Grimpe) and experts in art history were of a valuable help for this investigation, but on the other hand, they were limited in extend due to restrictions set by time and e-mail communication. Future investigation could probably provide more information about the painting's provenance.

This has been the first systematic approach in examining the panel painting from Norum church, depicting the Lamentation of Christ. New important evidence has come to light and many "mysteries" have been solved. The high possibility that the painting is a copy makes its attribution examination a hard and complicated task to carry out, however, the acquisition of new knowledge has set new, specific investigation directions and has excluded it from invalid attribution hypotheses. Further future studies of the painting's technique and especially its painting materials, can possibly lead to the acquisition of new knowledge, and by this way come even closer to its chronological and topographical determination.

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Figure 51, Cross-section of sample E/Gold background-central area of the painting (see fig.35-E). The fine-powdered white ground is followed by a light ochre layer containing black, white, dark red and yellow particles. Then there is evidence of previous gilding. The subsequent layer has a brown-red color and no pigment particles can be distinguished. Gold leaf makes up the final layer of the stratigraphy of the sample cross-section. The contrast between the opaque white color of the lead white particles and the chalk ground is clearly pronounced. (K-Konservator, Photo: Polyxeni Papadopoulou)

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Figure 63, Detail from fig. 61

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Figure 71, Detail from Christ's loincloth (Photo: Polyxeni Papadopoulou)

Figure 72, Detail from X-radio-graphy. The artist has applied here wide and spontaneous brush strokes (SVK, Carin Petersson, Polyxeni Papadopoulou)

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Figure 75, Detail from John's red cape. Photograph in the visual spectra (Photo: Polyxeni Papadopoulou)

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Table 1, Samples

Table 2, Panel dimensions

Table 3, Plank dimensions

Table 4, Evaluation of the results from the technical analysis

APPENDIX 1

Norum församling/Norum kyrka/Dokumentation/Inventarier 1980 N:8

INVENTARIEUPPGIFT		
Datum 19800730		
		Kod eller inv.nr och sida i inv.förteckn 141502:26
		Sign
Kyrka Nörum		
Socken/Församling Norum		
Föremål		Tillverkningsår eller ungefärlig datering
Oljemålning. Nedtagande fr.korset.		1500-tal.
Höjd ¹⁾	Bredd/Diam ¹⁾	Djup/Tjocklek ¹⁾
1140 mm.	820 mm.	
Material (t ex trä, björk, silver, olja på duk, förgyllt trä o s v)		
Beskrivning (t ex kyrkbänk av furu marmoreringsmålad i grönt, kalk av silver med 6 infattade röda halvädalstenar)		
Jesu nedtagande från Korset.		
Möjl. arbete av Kölnerskolan.		
Gåva 1949 av Karl Theodor Friedericks, Stenungsund.		
Särskilda identifikationsuppgifter (t ex stämpel, signatur, märkningskod)		
1)Se bild på baksidan		Var god vänd
Foto 9 x 9 cm (svartvitt)	Foto 9 x 9 cm (svartvitt)	

APPENDIX 2

Norum/Kyrkorådets Protokoll 1925-1963 KIII:5

Norum's Kyrkoråd den 18 april 1949.

Närvarande: Alla utom Hr Oskar Olsson.

§ 1.

Alla justera dagens protokoll uträgas Kyrkorådena.

§ 2.

Till Kassör för kyrkostyrkan under år 1949 valdes
Kåradslomare Ragnar Berndtson, Stenungsund, Stenungsund.

§ 3.

Kyrkorådet beslöt uttala Norrums församlings värma
tack till Dir. Erik och fru Eriks i Stenungsund
för den synerligen vackra och värdefulla gåvan - en
äldre målning i olja föreställande brådsarens nedtagande
från korset - församlingens lyrlia följande måttaga till
en firade Långfredag.

§ 4.

Besluts att till bekryggande löppis löjta brand-
försäkring för kyrkans inventarier nödskilt med hän-
syn till den av Dir. Erik och fru Eriks skänkta olje-
målningen, den av Kyrkoråd och fru Ingemarsson skänk-
ta brudkronan, samt med hänsyn till att Nat. värds-
silvret är för lågt försäkrat. Brudkronan skulle även
stödd försäkras. Det uppdrags åt Kåradslomare Berndtson
att verkställa beslutet.

§ 5.

Kyrkorådet beslöt hemställa till Småkapitlet
att under den tid Stenungsunds kapell restuarens
gudsögnarna måtte få förläggas till kommunal-
huset i Stenungsund och i regel hållas på c. m.

§ 6.

Beviljadeskallskatt dels till Västlunds försam-
ling och dels till Småkyrkostiftelsen i Göteborg.

§ 7.

Till sammantrådet erbjöd sig Fabrikör Werner
Olsson att skänka en gåvobok till kyrkan (i vilken även
skulle införas äldre hända gåvor), för vilken Kyrkorådet
beslöt uttala församlingens värma tack.

§ 8.

Kyrkorådet möttes och beslutades genom Kyrkoråd

APPENDIX 3

Inventariebok Norumkyrka 1962- N:3

1	2	3	4	5	6	7	8
Inv. n:r	Inventariernas antal och namn (även fragment upptagas)	Förv. plats	Inventariets skick	Inköpspris Silvervikt	Alder el anskaff- ningsår	Inv. i bruk: Ja el. Nej	K. Se anv.
	<u>Tavlor:</u>						
	"Skattepenningen"	S			1913 1500- talet	Ja	
→	Tavla hängd å södra kyrk- väggen. Oljemålning på ek: Nedtagandet från korset. Tyskt arbete (Kölnerskolan)?	K			1949	Ja	K
	Tavla uppsatt i sakristians tak,		Renoverad		1700- ts mitt?		
	<u>Minnestavlor:</u>						
	Tavla över kyrkans nybygg- nad 1847.	V					
	2 begravningsplåtar	T					

APPENDIX 4

1984-01-20/Inventariebok Norumkyrka 1962- N:3

<u>Mattor och övriga texti- lier</u>	Inom altarrunden. Broderad matta i rutor, petitspoints, från 1939.
<u>Övriga grav- minnen</u>	Gravvård av trä från 1848. Undanställd i tornkammaren. Otillgängligt placerad!
<u>Tavlor</u>	På sydväggen. Oljemålning på pannå, Kristi nedtagande. Möjli- gen ett tyskt arbete av Kölnerskolan daterat till 1500-tal. Skänkt 1949 av Karl Theodor Friedericks i Stenungsund. För- gyllt ram. H. 114, Br. 83.
<u>Möbler</u>	Ståndur i koret. Fodral av ek dekorerat i plattskärning och målat i grått. H. 240. Från 1913. Karmstol av ek klädd med gyllenläder. Barock. Kista av ek med välvt lock. Järnbeslagen. 1600-1700-tal. L 119.
<u>Klockor</u>	1. i tornet, enkel utan inskrift med två parallella ränder och troligen ett avtryck av pilgrimsmärke på kroppen möjligen 1300- tal. Se Åmark a.a. Används vid tacksägelseeringning. 2. i tornet, ej upphängd, användes ej. Otillgängligt placerad 1500-tal? 3. i tornet, gjuten 1926 av M. och O. Olsson i Ystad. H. 85. 4. i tornet, gjuten 1926 av M. och O. Olsson i Ystad. H. 100.
<u>Byggnadsdetaljer och föremål i museisamlingar</u>	Dopfunt av sten från 1100-talet. I Statens Hist. Museum, Stock- holm. Se kopia av S.H.M:s register. Medeltid och Nyare tid . Föremålsbestånd.
<u>Restaureringar</u>	Gravvalv omgjort till columbarium 1943. Konservator C.O. Svens- son. 1895. Efter att ha varit vitkalkad målades kyrkan i marmorerade fält. Ny orgel. 1932. Restaurering efter förslag av Axel Forssén. Återinvigd 1943. Den ursprungliga vita färgen kom åter till heders. Cent- raluppvärmning. 1970-talet exteriör och interiör renovering.
<u>Källor och litteratur</u>	J. ROOSVAL: Dopfuntar i Statens Historiska Stockholm 1917. JOHN HALLIN: Norums kyrka ur Stenungsunds fyra socknars krönika. sid. 122-130. MATS ÅMARK: Bohusläns medeltida kyrkklockor i GBFT 1946. sid. 13 Biskop EYSTEINS jordebok från 1300-talets slut. Visitation 1388. SVEN AXEL HALLBÄCK: Medeltida dopfuntar i Bohuslän. Vänersborg 1961.
<u>Avbildningar</u>	Kyrkans inventarier genomfotograferade för kyrkans arkiv. För- varas på pastorsexpeditionen i Stenungsund.

APPENDIX 5

E-mail contact with Urban Ullenius/2010-04-18

Hej Polyxeni!

Vi restaurerade kyrkan i slutet av nittioalet.

Jag kommer väl ihåg målningen, men den restaurerades aldrig då detta inte ingick i vårt uppdrag. Däremot utfördes en lättare avdämning av ytan iallafall.

Jag tyckte emellertid att målningen var av sådan kvalitet, samt att även jag hörde talas om att ngn påstod att det kunde vara en målning Lucas Cranach och att man därför borde undersöka dess ursprung lite mer grundligt.

Jag tillfrågade en expert han trodde dock inte det var en målning utförd av Lucas Cranach.

Vi kom dock aldrig vidare med vare sig det ena eller andra.

Sannolikt gick man vidare själva.

Mvh/Urban Ullenius

APPENDIX 6

E-mail contact with Christina Grimpe via Helena Lindholm/2010-04-07

Hej Helena

Den info som jag kan få fram är följande.

Tavlan skall vara en Lucas Cranch d.ä.!? Den ägdes av Karl Heinrich Friedrichs Kommerzienrat och hans fru Karolina. Karl Heinrich var den tyske kejsarens personlige rådgivare i industrifrågor Familjen bodde i Potsdam (sydväst om Berlin) Tavlan hängde i "Blå salongen" ovanför dörren!

Karl Heinrich var konstsamlare (tavlor, tenn och fayance) Hur tavlan har kommit i familjens ägo vet vi inte.

När mina morföräldrar flyttade till Sverige, i samband med andra världskriget, följde en del av Karolinas (som då var ensamstående) bohag med då hon också skulle flytta till Sverige. Tyvärr kom hon aldrig hit utan deporterades till Theresinstadt.

Tavlan skänktes av Karl-Theodor och Erika Friedrichs till Norum kyrka på Kristi Himmelfärdsdagen 1949.

Det skulle vara jätteroligt att få reda på vad konservatorn kan få fram för ytterligare upplysningar.

Hälsningar

Christina Grimpe

APPENDIX 7

E-mail contact with Till-Holger Borchert/2010-03-19

Dear Polyxeni Papadopoulou,

Thank you very much for sending the pictures. Here are some remarks:

I agree that it's not swedish, nor scandinavian for that matter (nor greek ;-)

The golden background is new I guess

The composition is old/Flemish around 1500, the execution seems somewhat later, i.e. Late 16th or even early 17th century.

The way the paint is applied and especially the manner of highlighting by using what I guess is lead white is comparable to works produced in Antwerp in the 17th century. Especially Saint John (in UV) almost looks a bit like Rubens. I can't link it to anything early 16th century really, or even mid-1500s. Nothing really compares to for example Key, Pourbus, Claeissens. The whole painting certainly looks flemish, almost like a 17th century copy of an original from about 1520. I don't really think this is German. What about the support? I guess it's oak. Can you see panel marks on the reverse? If it's not oak, we have to think again.

Hope this helps a bit. If you have reasons to believe that I am wrong in terms of dating, let me know.

Yours sincerely

T

E-mail contact with Till-Holger Borchert/2010-03-22

No problem. The panel indeed has been thinned from what I can see in the pics you send, with a mechanical scraper. And colored of course. So you won't find any marks of panelmakers.

Regarding the gold-ground: yes indeed. It looks strange, not authentic. That doesn't mean that there wasn't a gilded background originally (although it is unlikely), but you would need x-rays (and samples) to confirm.

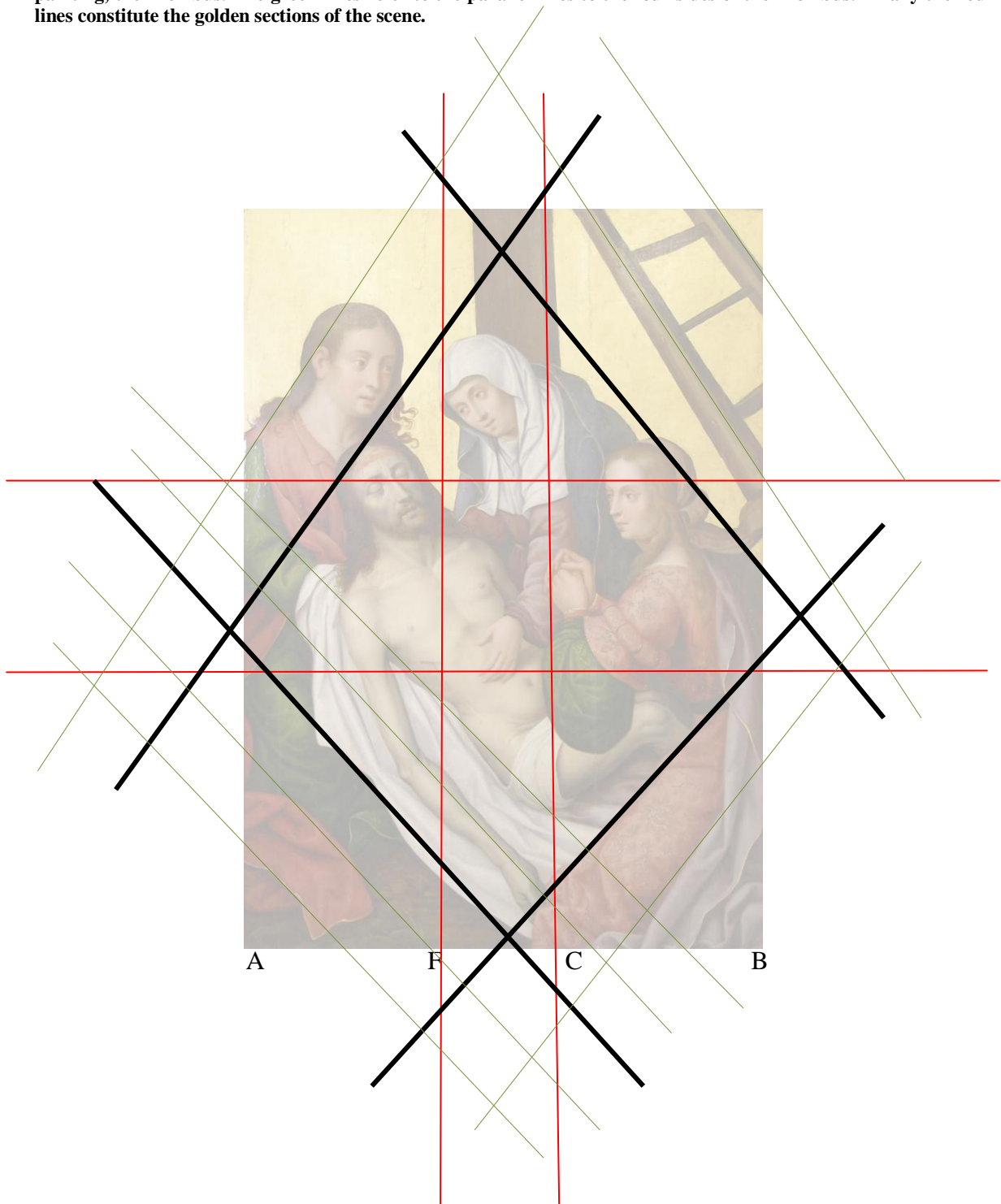
Best wishes

T

met vriendelijke groet | meilleures salutations | with kind regards |
Till-Holger Borchert| conservator| conservateur en chef| chief curator
Musea Brugge | Groeningemuseum | Dijver 12 - 8000 Brugge |

APPENDIX 8

Geometrical structure of the painting. With the black color lines it is mentioned the central structural form of the painting, the rhombus. The green lines refer to the parallel lines to the four sides of the rhombus. Finally the red lines constitute the golden sections of the scene.



APPENDIX 9

Illustration to complement description and condition report of the Norum painting's panel

Butt join aligned with dowels

The panel of the Norum painting is composed of three planks joined/glued together. Additionally, three dowels have been detected (X-radiographies) in the connections of the planks. The place of the lines is approximate.

connections of the planks — *dowels* — *cracks* - - - *wood loss* 



APPENDIX 10

Illustration to complement condition report of the Norum painting – Cradle

The cradle is preserved in a general good condition state. However, insect attack has been detected in two areas. The X-radiographies show the approximate area that these have been found.

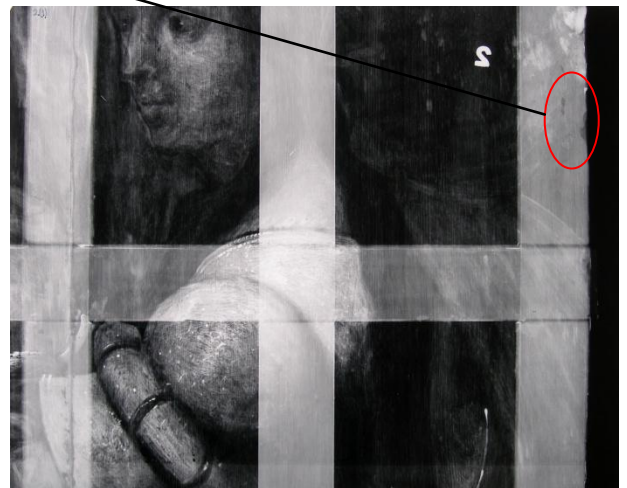
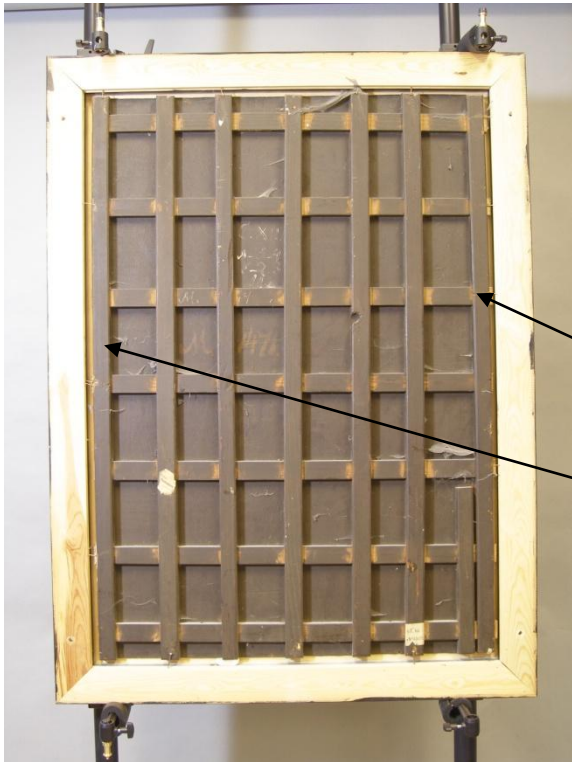


Fig.3 above/Fig. 38 top right/ Fig.79 bottom right

APPENDIX 11

Illustration to complement condition report of the Norum painting – Ground and paint layer

The ground and paint layers of the Norum painting have been preserved in a general good condition. The main damages are related to ground and paint exfoliation and loss. This deterioration has taken place across the main cracks of the painting, which on their turn are related to the connections of the three planks. Mechanical stresses between the three planks led to ground and paint layer loss across their connection. However, the precise extend of loss has not been evaluated for the moment because the deteriorated parts have been overpainted.



**Fig. 1 above left/ Fig.59 above right/ Fig.37
bottom left/ Fig.36 bottom right**

APPENDIX 12

Illustration to complement condition report of the Norum painting – Overpaintings/retouchnings

The retouchings have been carried out in order to integrate the lacunae created by the paint layer loss in the areas of the cracks. With the help of UV fluorescence the retouchings were detected on the top of the varnish layer. The cracks had already taken place before the application of the varnish (subsequent intervention) and this is obvious by the retouchings that were carried out in the areas of the cracks and lie under the varnish layer. Unfortunately, the exact extend of the previous retouchings cannot be evaluated because the varnish layer obscures them in the UV fluorescence images. Additionally, the Virgin's blue mantel has most probably been overpainted. The painting technique differs distinctively in this area, with a more opaque color effect and a coarse paint elaboration. However, no concrete conclusions can be reached for the moment because this intervention lies under the varnish layer. Finally, the locks on the hair of St John the Evangelist are a later intervention.



Fig.1 above left/ Fig.73 above top/ Fig.53 above middle/ Fig.76 above bottom/ Fig.80 far left/ Fig.74 left