Painting Pairs: Art Historical and Technical Study 2022-23

Follower of Joos van Cleve (Dutch, b. ca. 1485 – d. ca. 1540), *Saint Jerome*, Private Collection

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Introduction to the project

Painting Pairs is an annual initiative at The Courtauld Institute of Art which aims to investigate a given artwork through the combination of art historical and technical research. The painting that will be discussed in the following paper is titled *St. Jerome*, which came to The Courtauld's Department of Conservation and Technology from a private collector. Based compositionally on paintings of Saint Jerome in His Study by Joos van Cleve (ca. 1485 – 1540) and his workshop, the painter of this work is unknown, as are the precise date and location of its production. This report will discuss the preparation and execution of the oil painting on panel, as well as its relationship to the source of its composition and the Antwerp art market.

Introduction to the painting

Figure 1. *Saint Jerome*, Before Treatment, Front, Normal Light

Figure 2. *Saint Jerome*, Before Treatment, Back, Normal Light

Saint Jerome was painted in oil on a Baltic oak support that measures 53.7 x 67.5 cm. The painting depicts a half-length figure of Saint Jerome seated at a table upon which are a skull, coin purses, an extinguished candle in a brass candlestick, writing instruments, and a lectern with books. The saint has a melancholic pose as his right hand supports his head and the index finger of his left-hand points to the skull. In the background, there is a brush (possibly an aspergillum), an unlit candle in a wall sconce, and a shelf of books.[1]

Provenance and state of research

The owner purchased the painting with the attribution to a follower of Joos van Cleve from the Old Master, British & European Paintings sale at Woolley & Wallis on 12th August 2021. The previous owner is known to have inherited the painting; however, there is little else known about its history.[2] The painting

[1] An aspergillum is a liturgical implement for sprinkling holy water. It is also featured in Princeton's *St Jerome in His Study*, though it is thinner and red and green in colour.

[2] Email correspondence with Ed Beer, a paintings specialist at Wooley & Wallis, on 6th June 2022.

has neither a clear date of creation nor an established provenance. In addition, it remains unclear how the English auction house made its attribution, except on compositional grounds. The painting shares a strong visual resemblance to *Saint Jerome in His Study* by Joos van Cleve and his workshop.

Biography of Joos van Cleve

Joos van Cleve was born around 1485-90. He was likely from the Lower Rhenish region or the city named Kleve, from which his name is derived. He began his artistic training in the workshop of Jan Joest around 1505, where he assisted in painting the wings for the high altar of Nikolaikirche in Kalkar. Due to his works displaying the characteristics typical of Bruge painters, he is believed to have moved to Bruges between the years of 1507 and 1511, before settling in Antwerp in 1511. There, he became a free master in the Guild of Saint Luke, acting as deacon until 1529, and is known to have run a large workshop with at least five pupils and other assistants.

The gap in documentation of his activity in Antwerp between 1535 and his death in 1541 is assumed to be filled with travel, as confirmed by a passage in Lodovico Guicciardini's *Descrittione di tutti I Paesi bassi* which states that 'Gois di Cleves of Antwerp' was summoned to paint Francis I of France and Eleanor of Austria.[3] At French court, he is thought to have been acquainted with the works of Leonardo da Vinci as his subsequent works show Italian influences, specifically in his appropriation of the themes and techniques of Leonardo (i.e. his use of sfumato in paintings of the Virgin and Child).

Mainly known for his portraits until 1525, Joos pivoted to creating popular devotional images following the economic crisis in Antwerp. He offered paintings in three standard sizes to appeal to a large group of potential buyers with a variety of budgets, and also took on more journeymen to assist him–specifically between 1523 and 1535.[4] Using spolvero and claco methods of transfer, he was able to expedite production processes and double the production capacity of his workshop to meet the increased demand in the 1530s during the boom of the Antwerp luxury market.[5] After his death, Cornelis took over his studio and continued to produce popular serial compositions like Saint Jerome.

Biography of Cornelis van Cleve

Cornelis van Cleve trained in his father's studio from 1535-40 and may have become a master in the Guild between 1540-41. He struggled as an artist after his father died, joining the guild's mutual aid association in order to continue his father's studio. In 1546 and 47, he is recorded to have had difficulties making payments on his house before eventually selling it and emigrating to England, likely to seek the patronage of Philip II. He has no recorded masters or apprentices in the guild registers.[6]

Cornelis was only active for a 14-year period in Antwerp and London, and much of the works attributed to him are attributed to both him and his father. His paintings are sometimes attributed to 'Sotto Cleve' (or

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[3] John Oliver Hand, 'Joos Van Cleve and the Saint Jerome in the Norton Gallery and School of Art', *Norton Gallery Studies*, Norton Gallery and School of Art (Palm Beach, 1972) and Micha Leeflang, *Joos Van Cleve: A Sixteenth-Century Antwerp Artist and His Workshop*, (Belgium, 2015): p. 173.
[4] Peter van den Brink, *Joos van Cleve: Leonardo des Nordens*, p. 155.
[5] Ibid, p. 147 and 155.
[6] His name does not appear in the guild registers, however the names of newly qualified masters are missing for the year 1541. Max J. Friedländer and Nicole Veronee-Verhaegen, *Early Netherlandish Painting* (Belgium: A.W. Sijthoff, 1967), p. 42.

‘Mad Cleve’) due to reports of a conflict between him and prominent portrait painter Anthonis Mor, whom he asked to plead on his behalf to Phillip II to give him more commissions. Mor’s unsuccessful intercession is thought to be the cause of his insanity. Cornelis was sent back to Antwerp in 1560 where his property gradually dissipated due to his cost of care and died in 1567.

Cornelis predominantly painted religious paintings and–to a lesser extent–mythological scenes and portraits. His later works, which show influences of Raphael, Leonardo, and in particular Andrea del Sarto, suggest travel to Italy in his youth (though there is no documentary evidence). His larger religious scenes did not receive the best reception, or in the words of Jos van den Braden, ‘Cornelis van Cleve had little or no aptitude for composition and therefore betook himself to painting portraits in which he soon excelled.’[7]

Due to the confounding of Cornelis and Joos’s identity, much of the authorship of works attributed to Cornelis are not definitive. Works originally attributed to the notnames ‘Sotto Cleve’ and ‘Pseudo-Lombard’ were identified by Max Friedlander as his and, upon chronological arrangement, show a gradual distancing from his father’s style.[8] Friedlander characterises Cornelis’s style in the dark background; the deep set eyes, heavy shadow on the nose, and 'long handy fingers' in his figures; as well as his use of light which was influenced by the Italian High Renaissance style.

Imagery of Saint Jerome in His Study

The type of Saint Jerome produced by the workshop of Joos van Cleve originates from Albrecht Dürer’s popular painting for Ruy Fernández de Almeida in 1521. Dürer completed his painting of *Saint Jerome in His Study* whilst he was in Antwerp, as indicated by his travel journal. His painting inspired Joos and other Antwerp artists, including Quentin Matsys.[9]

Interest in Jerome during the Northern Renaissance was due to the Reformation and humanist scholars, specifically Erasmus of Rotterdam. Erasmus was thought to parallel Jerome as a biblical scholar as he published his own translation of the bible, the *Novum Testamentum*, in 1518 which itself included Jerome’s Vulgate. Depictions of Jerome became increasingly popular, emphasising his role as church father and exemplar of penitence and humanistic scholarship in the wake of the exegetical discourse. Joos is credited as the first to combine the distinct patrological interpretations of Jerome as scholar, penitent, and witness.[10] There has been an attempt in subsequent scholarship to show that Joos’ artistic changes parallel the spiritual and intellectual thought of northern Europe during the Reformation, specifically in Jerome’s old age as symbolising the inevitability of death and nearness of the Last Judgement combined with an expression of agitation as a response to the existence of religious leaders who are false prophets.[11]

Two paintings agreed to be autograph versions by scholars of Joos van Cleve are the paintings in the Harvard Art Museum (fig. 3) and Princeton University Art Museum (fig. 4) collections. This conclusion is based on IR imaging of the two which reveals significant compositional changes. Changes made in the

[7] Lionel Cust and F. Jos van den Branden, ‘Notes on Pictures in the Royal Collections–XXX. Paintings by Joost and Cornlieus van Cleve-No. 1’ in *The Burlington Magazine for Connoisseurs* Vol 26 No. 142 (Jan 1915): p. 171-2.
[8] Max Friedlander, ‘Nachträgliches zu Cornelis van Cleve’ in *Oud Holland* Vol. 60 (1943), p. 7-14.
[9] Many paintings of Saint Jerome have been attributed to one and re-attributed to another.
[10] Leeflang, *Joos Van Cleve: A Sixteenth-Century Antwerp Artist and His Workshop*, p. 94.
[11] Ibid.

Harvard Art Museum *Saint Jerome in His Study* include the omission of a bird cage suspended from a wire in the ceiling and decorative frieze with the words 'ANNO 1521,' which further confirms this hypothesis by dating the painting as one of the earliest iterations of the composition. Infrared reflectography in the Saint Jerome in the Princeton Art Museum shows cross-hatching and corrections to the stoppered bottle on the shelf and the placement of the hanging rosary beads. Despite its size, simpler background, and less detailed rendering of light and shade in comparison to the Harvard collection, the 'quality of execution of the painted surface, rendering of texture, thinly painted yet glistening skin tones, and attention to detail,' as described by John Oliver Hand, distinguishes the Princeton version from a copy and classifies the it as a qualitatively superior 'Dürer type.'[12] Dendrochronology conducted on the Harvard and Princeton versions confirm a *terminus post quem* of post-1521, thus dating the paintings to approximately 1528 and confirming the influence of Dürer on Joos.

In comparison to the Harvard and Princeton versions, *Saint Jerome* has a simpler design, both in colour and composition as well as a rougher handling of paint. Joos was known for his 'smooth, almost silky manner' and praised as a colourist for his 'restricted range and subtle nuances,' which suggests that if this painting was indeed made in his workshop, it was likely completed entirely by a pupil or assistant.[13]

Figure 3. Joos van Cleve, *Saint Jerome in His Study*, 1521, oil on wood, 99.7 x 83.8cm, Harvard Art Museums/Fogg Museum. Photo © President and Fellows of Harvard College.

Figure 4. Joos van Cleve, *Saint Jerome in His Study*, 1528, oil on wood, 39.7 x 28.8cm, The Art Museum, Princeton University. Photo: artmuseum.princeton.edu.

[12] John Oliver Hand, "'Saint Jerome in His Study' by Joos van Cleve," *Record of the Art Museum, Princeton University* 49, no. 2 (1990): 8 and Leeflang, p. 95.
[13] Hand, 'Joos Van Cleve and the Saint Jerome in the Norton Gallery and School of Art.'

Materials and Techniques

Framing

The painting was brought to the Courtauld in an English Lely style carved and gilded frame with a slip frame. This frame is unoriginal to the painting. The panel was inserted into a frame after the completion of the painting, evident by the presence of ground and paint layers along the edges. By the second quarter of the sixteenth century, most panels were painted before a rabbeted frame was attached.[14]

Ground

The front of the painting was coated with a single white ground layer which is also consistent with Northern European paintings. SEM-EDX analysis identified the presence of calcium with minor peaks of silicon and aluminium in the ground layer.[15] In paint cross-sections, translucent natural chalk fossils (coccoliths) are visible under UV (fig.5). The ground would have been prepared in thin layers of chalk bound in oil or glue, and then planed or scraped until smooth.[16]

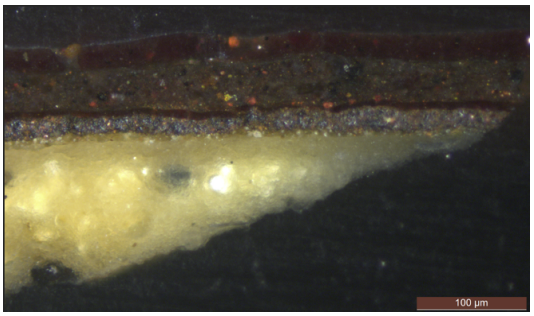

Figure 5. Sample 6 taken from Jerome's red robe after varnish removal under Normal Light

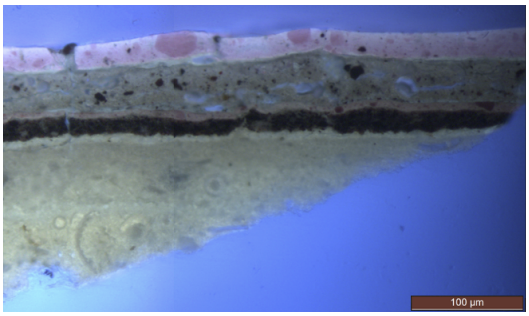

Figure 6. Sample 6 taken from Jerome's red robe after varnish removal under Ultraviolet Light

Underdrawing

A minimal compositional sketch was carried out in a liquid carbon-based medium (fig. 7, 8). It appears that the initial placement of the lines was made with a fine brush, roughly indicating the shapes of the compositional forms. In a later stage, there were changes made to some of the contour lines and the 'correct' lines were reinforced. The underdrawing seems to indicate that the composition was transferred freehand onto the panel. However, it is possible that a reproductive aid with a non-IR absorbing material was used to simplify and speed up the production process.[17] While infrared reflectography detected some of the undrawing, more has become visible in areas of paint loss. Photomicrographs show lines made in a brownish liquid material, with small black particles, in Jerome's robe (fig. 9, 10). Executed with a brush, the curved lines are tapered and economically indicate the rolls in the drapery. The minimal drawing style suggests that the artist intended to develop the forms in the later painting stage due to following a model.

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[14] Ron Spronk, 'More than Meets the Eye: An Introduction to Technical Examination of Early Netherlandish Paintings at the Fogg Art Museum', *Harvard University Art Museums Bulletin* 5, no. 1, (1996), p.19.

[15] Chalk can have minor impurities of $MgCO_3$, SiO_2, and $(FeAl)_2O_3$. Rutherford J. Gettens, Elisabeth West Fitzhugh, and Robert L. Feller, 'Calcium Carbonate Whites', *Studies in Conservation* 19, no. 3 (1974), p. 210. For SEM-EDX analysis, see Sophia Boosalis,'CIA2772 *Saint Jerome* by a Follower of Joos van Cleve'.

[16] Wadum, 'Historical Overview of Panel-Making Techniques in the Northern Countries', p.167.

[17] *Compositions could be transferred onto a panel using squaring, tracing, and pouncing. Ashok Roy et al. 'Methods and Materials of Northern European Painting at the National Gallery, 1400-1550', National Gallery Technical Bulletin* 18, (1997), p. 6-5.

A thin intermediate layer was applied on top of the underdrawing to prevent the oil-based paint from absorbing into the ground. Photomicrographs show that it was transparent enough to allow the underdrawing to remain visible (fig. 9). The intermediate layer in 16th c. Netherlandish paintings usually consist of oil and, in some cases, pigments.[18] Cross-section analysis has found that the layer contains lead white, carbon black, chalk and iron oxide pigments.[19] This layer appears to be consistent with Karel van Mander description of *primuersel*, a translucent flesh-coloured wash of oil-bound paint.[20] The presence of the tinted intermediate layer suggests that the painting was made before the use of colour grounds in 1575.

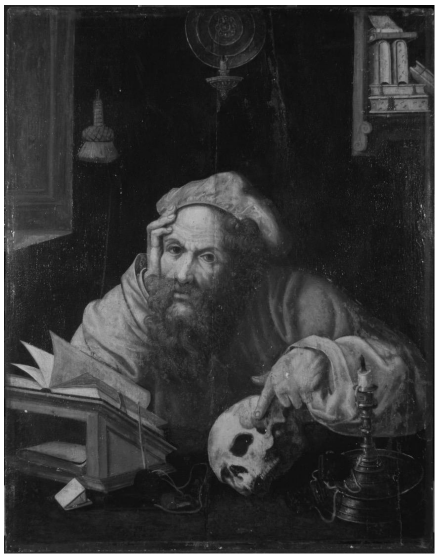

Figure 7. *Saint Jerome,* Before Treatment, Verso, Infrared image taken with modified CCD Camera (750 - 1000 mm)

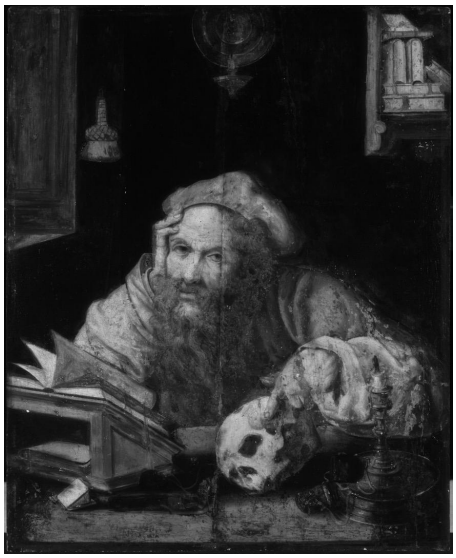

Figure 8. *Saint Jerome,* Before Treatment, Infrared Reflectograph, OSIRIS Camera (1000 - 1600 nm)

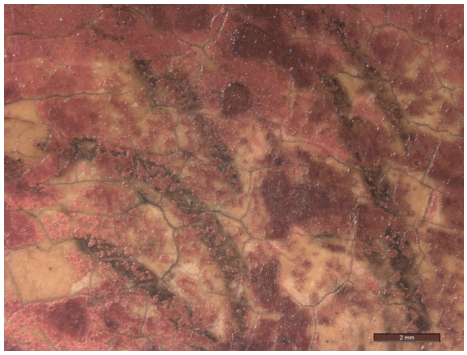

Figure 9. Photomicrograph of the underdrawing in Jerome's right arm after the removal of varnish and retouching

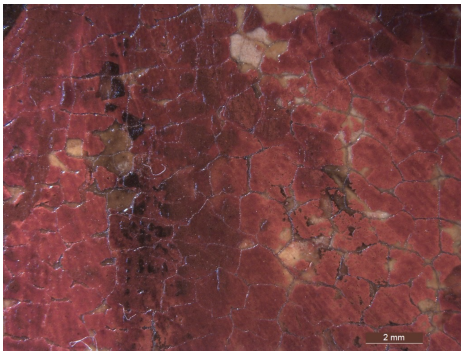

Figure 10. Photomicrograph of Jerome's right arm after the removal of varnish and retouching

[18] Abbie Vandivere, 'In search of Van Mander's primuersel: Intermediate layers in early Netherlandish paintings', in *ICOM-CC 16th Triennial Conference Preprints*, Lisbon, 19-23 September 2011, ed. J. Bridgland (Lisbon, 2011), p. 2-6.

[19] For SEM-EDX analysis, see Sophia Boosalis,'CIA2772 *Saint Jerome* by a Follower of Joos van Cleve'.

[20] Vandivere, 'In search of Van Mander's primuersel: Intermediate layers in early Netherlandish paintings', p. 3.

Paint Layers

In general, the oil bound paint was applied in one or two layers. Elemental analysis has identified the presence of vermillion, madder lake, lead-tin yellow, iron earth, carbon black, and copper containing pigments. The paint appears to follow the carbon-based underdrawing with a few exceptions; for example, the artist omitted some of the details in the panelling of the windowsill in the final composition.

The artist painted the background wall prior to executing the central figure and other features in the composition, as seen in the Osiris image (fig. 6). The wall consists of a modulating grey layer that contains a mixture of lead white, bone black, and a copper containing pigment (fig. 11) The shape and colour of the deep blue and greenish-blue particles suggests the presence of azurite. Azurite is a naturally occurring mineral pigment (basic copper carbonate) which was commonly sourced from Hungary and other regions in Europe.[21] Similar to the wall, the windowsill is made of a single grey layer that contains bone black, azurite, and a larger proportion of lead white.

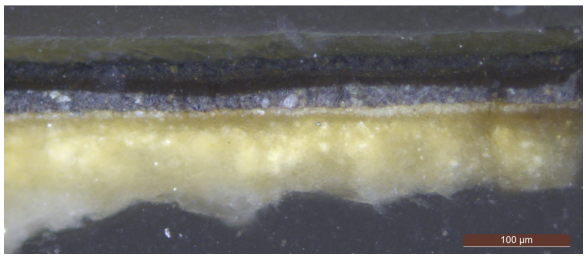

Figure 11. Sample 10 taken from the background wall after varnish removal under Normal Light.

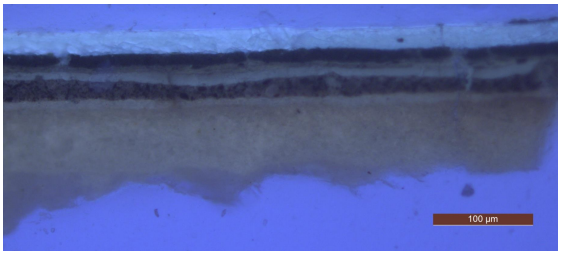

Figure 12. Sample 10 taken from the background wall after varnish removal under Ultraviolet Light.

The artist applied a dark brown paint to block-in the shadows in Jerome's hat and robe before proceeding with a red transparent glaze (fig. 10). The brown layer appears to be streaky and applied with a medium sized brush, evident by the Osiris image (fig. 8). SEM-EDX analysis identified lead and carbon with minor peaks of silicon and iron, suggesting the likely presence of lead white, iron earth, and carbon black pigments. A dark red glaze was applied to achieve the deep reddish tones. The dark red layer is an organic red lake derived from madder, evident by its strong pink fluorescence in UV (fig. 14). The areas of highlight in the red robe consists of a mixture of vermilion and an iron containing earth pigment with a madder lake glaze on top.

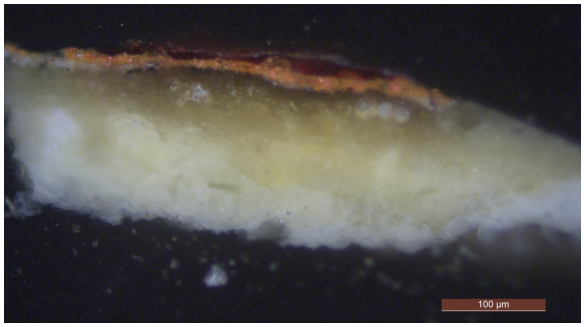

Figure 13. Sample 1 taken from Jerome's red robe after varnish removal under Normal Light.

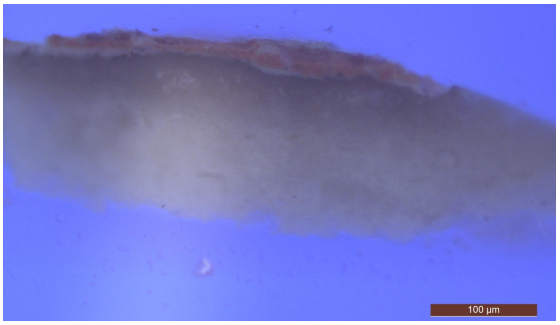

Figure 14. Sample 1 taken from Jerome's red robe after varnish removal under Ultraviolet Light.

[21] Rutherford J. Gettens, Elisabeth West Fitzhugh, and Robert L. Feller, "Azurite and Blue Verditer." *Studies in Conservation 11*, no. 3 (1966), p. 25.

The table is composed of an opaque blue layer with a reddish-brown glaze on top (fig. 15).[22] The greenish-blue layer is a mixture of lead white, iron earth and copper containing pigments. A well-preserved passage of the glaze shows the presence of translucent yellow and blue particles (fig. 16). SEM-EDX analysis identified peaks for copper, lead, and calcium, suggesting the presence of lead white and a copper containing pigment like copper resonate (fig. 17).[23] This is the most likely reason for calcium to be present in the spectrum as it likely formed the substrate of the yellow lake pigment used in copper resinate. A 17th century recipe for preparing copper resonate describes heating verdigris and a yellow lake pigment with linseed oil, pine resin, and oil of turpentine.[24] The semi-transparent brown layer was probably green, but the copper-containing green glaze has deteriorated to brown in the manner typical for copper resinate glazes. A similar deterioration phenomenon can be observed in the green drapery of Joos van Cleve's *St. Jerome in His Study* at The Art Museum, Princeton University (fig. 4).

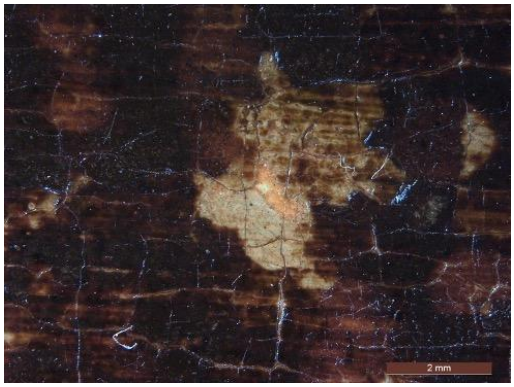

Figure 15. Photomicrograph of the table after the removal of varnish and retouching

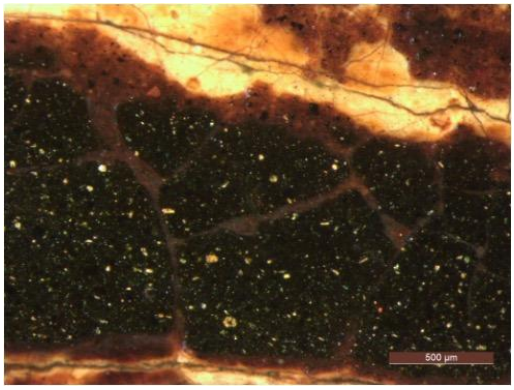

Figure 16. Photomicrograph of a well-preserved green passage in the table after the removal of varnish and retouching

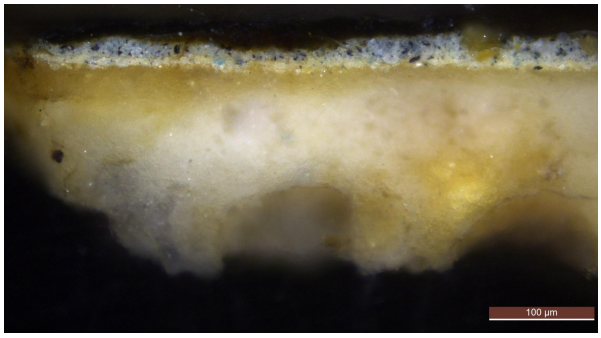

Figure 17. Sample 9 taken from a loss in the table after varnish and retouching removal

[22] Before treatment, the table had a green appearance due to the application of a streaky Prussian blue layer by a previous restorer. This made the painting appear closer to the other version of the composition despite being ahistorical.
[23] For SEM-EDX analysis, see Sophia Boosalis,'CIA2772 *Saint Jerome* by a Follower of Joos van Cleve'.
[24] Hermann Kühn, 'Verdigris and Copper Resinate', in *Artists Pigments*, vol. 2, (London, 1993), p.149.

Previous Restoration and Current Treatment

The panel came to the Courtauld Institute of Art with a degraded natural resin varnish and extensive campaigns of retouching from at least two conservation treatments. The previous restorers took artistic liberties in some of the damaged areas of the paintings, most notably Jerome's beard and the green table.

Figure 18. Photomicrograph of the beard after the removal of retouching and varnish

The removal of the yellow natural resin varnish and extensive retouching revealed the painting's original colour palette and balance. However, an exception to the newly revealed, highly keyed colouration of the composition is the brown discoloured table. The previous restorer applied a streaky layer of prussian blue, an iron blue pigment used by artists in the early 18th century. This made the painting appear closer to the other version of the composition.

The cleaning of the painting has further revealed that the beard is a heavily damaged area of the painting. Jerome's brown beard gave the saint a younger appearance than the other versions of the composition. The brown appearance is contributed by the yellowing of the varnish and semi-transparent retouching over areas of abrasion and paint losses. The cleaning tests show that the artist applied a lead containing paint in curling brush strokes to indicate the strands of the beard (fig. 18). It appears that the artists followed the original composition by depicting Jerome with the 'typical' white beard.

Figure 19. *Saint Jerome*, Before Treatment, X-radiograph

Panel Construction

The panel consists of two thin oak boards with a vertical grain. The direction of the growth rings indicate that the left board is a radial cut while the right board is acutely transverse. The back of the panel retains curved horizontal saw marks from a handheld saw (fig. 2).[25] The two boards have a slightly curved horizontal surface left by the teeth of a handsaw labouring its way through the wood. The dent in the lower right corner further indicates the use of an axe, possibly from the original splitting. In comparison, the reverse of 17th century panels often have evenly spaced, parallel marks created by a machine saw at a sawmill. The introduction of sawmills made it faster and cheaper to produce uniform boards than sawing by hand. The rough and uneven surface of *Saint Jerome* is consistent with the tools used to manufacture boards in the sixteenth century.

The construction of the panel appears to be consistent with Netherlandish panels from the second half of the sixteenth century. The X-radiograph shows that the two vertical wooden boards were aligned by two wooden dowels (fig. 19). This is consistent with thinner panels from the end of the sixteenth century; dowels were frequently used to stabilise and align joins during glueing.[26] The back of the panel has

[25] From the early decades of the 17th century, regular machine saw marks become increasingly common. Machine saws produced parallel marks perpendicular to the grain, see Jørgen Wadum, *Documenting North Netherlandish 17th Century Panel Makers' House Marks*. Poster, p. 2014.

[26] Wadum, 'Historical Overview of Panel-Making Techniques in the Northern Countries', p.154.

bevelling on three sides: top, right, and left. By the second quarter of the sixteenth century, panel supports were often bevelled for later insertion into a frame. The edges were bevelled before the panel was painted in order to facilitate later framing.

A dark pigmented coating was applied to the verso (fig. 2). XRF analysis identified the elemental peaks for lead, iron, and calcium, suggesting the likely presence of lead white, chalk (calcium carbonate), and iron earth pigments.[27] These findings are consistent with the practice of applying chalk and a brown pigmented layer bound in oil.[28] Coatings were frequently applied to the reverse of panels to reduce any tendency for the wood to warp or crack.[29]

Dendrochronology

Dating a painting through dendrochronology is vital in the research into copies of *Saint Jerome in His Study*. As Micha Leeflang observes, the sustained popularity of the image and the nature of workshop production makes it impossible to place a painting within the artist's oeuvre based purely on quality and 'extremely difficult to decide on the correct historical dating.'[30] The use of assistants creates the complication of multiple hands within the same canvas in attribution, thus making dendrochronology an important tool in understanding depictions of Saint Jerome in His Study.

Dendrochronological examination carried out by Ian Tyers has revealed that the two boards came from different trees in the eastern Baltic region, with the latest heartwood ring of 1529.[31] It gives a *terminus post quem* or earliest possible date for the painting to be after c. 1535 and before c. 1569. The boards were likely used after the completion of the seasoning period, approximately two to five years during the sixteenth century.[32] The results of the dendro analysis suggest that the panel was most likely constructed after the death of Joos van Cleve in 1541, and therefore it was likely produced by a follower responding to the demand in the art market.

Saint Jerome and the Art Market

Antwerp emerged as the commercial and financial capital of northern Europe in the 16th century due to the biannual fairs which brought an influx of foreign merchants into the city. The fairs were 'free' markets where local merchants and craftsman displayed their goods on stalls set up on the streets throughout town. The *pand* market was an extension of this principle, providing a platform for merchants to sell to buyers across Europe and test the marketability of their products. In his account of the initial boom of the Antwerp art market in the late 15th and early 16th centuries, Dan Ewing observes that the fairs were 'a symptom and agent of the new practice of producing art on speculation and for the open market.'[33] The

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[27] See Table 1 in Sophia Boosalis,'CIA2772 *Saint Jerome* by a Follower of Joos van Cleve', (unpublished report, The Courtauld Institute of Art, University of London, 2023).
[28] Ibid, p.165
[29] Panels are known to warp over time, especially when the back is purely exposed to environmental conditions and the painted side is protected by the ground and paint layers.
[30] Leeflang, *Joos Van Cleve: A Sixteenth-Century Antwerp Artist and His Workshop*, p. 181-183.
[31] For the Dendrochronology Report by Ian Tyers, see Appendix VII in Sophia Boosalis, 'CIA2772 *Saint Jerome* by a Follower of Joos van Cleve'.
[32] Jørgen Wadum, 'Historical Overview of Panel-Making Techniques in the Northern Countries', in *The Structural Conservation of Panel Paintings: Proceedings of a Symposium 24-28 April 1995*, ed. Kathleen Dardes and Andrea Rothe (Los Angeles, 1995), p.154.
[33] Dan Ewing, 'Marketing Art in Antwerp, 1460-1560: Our Lady's Pand,' *the Art Bulletin* 72 no. 4 (1990), p. 558.

first of Antwerp's fairs was Our Lady's Pand, which operated from 1460 to 1560 and sold paintings, sculptures, books, and prints. The later *Childerpand*, or Painter's Pand, established in 1540, operated on a larger scale than Our Lady's Pand, signifying the growing importance of paintings as a commodity. The increased demand for paintings combined with new means of distribution led to structural changes in workshop production.

Apart from copying techniques, workshops became increasingly reliant on journeymen, leading to decline in apprentices and consequently in free masters and the authority of the Guild of Saint Luke. In her survey of archival sources, Natasja Peeters examines the guild's responses to 'the bulk of ever-growing production of Antwerp high-quality painting [being] done by masters and a phalanx of journeymen.'[34] Taking on apprentices required time and money which journeymen, who were already trained and could be put to work immediately, did not. The lack of new apprentices led the guild, which was 'desperately trying to fill the coffers, to an increase in fees in 1535, which only exacerbated the issue and caused a further decrease in inscriptions.[35] This rule was also not strictly enforced, with many members paying 'half fees' several years following the fee raise and some apprentices exempted from paying full dues.[36] Bert de Munck also suggests that the labour-market regulations are what determined the decline of Antwerp's craft guilds, specifically the regulations limiting the number of new apprentices in quotas or financial barriers.[37] As painting became a more and more important commodity during the 1540s and 1550s during the luxury boom, statutes in the guild regulations continued to regulate working procedures and raw materials, but remained silent on the use of journeymen.[38] Thus the pragmatic turn to journeymen led to a decrease in the number of apprentices and a declining labour force.[39]

In dating *Saint Jerome in His Study* to c. 1535 and before c. 1569, this places the painting after the rise of Antwerp's art market between 1470 and 1537 and before the political, religious, and economic upheaval brought by the Spanish Fury in 1576, furthered by a fire in 1583, which ultimately led to the shift from Antwerp to Amsterdam as the new economic centre. In Koenraad Brosens' and Inez de Prekel's analysis of the changing market through guild regulations, he contextualises the shift through the growing importance of art dealers from around 1585 onwards by comparing regulations between 1470-1537 and 1595-1689.[40] The first are 'primarily concerned with fine-tuning guild fees and monitoring quality issues' while the latter target 'a fair number of interlopers running clandestine workshops.'[41] Apart from indicating Antwerp's 'vitality as a production centre of art' as Brosens suggests, the regulations also seem to respond to the increase 'proliferation of forgeries of works by Quinten Metsys and other famous,

[34] Natasja Peeters, 'The painter's apprentice in fifteenth and sixteenth century Antwerp: an analysis of the archival sources' in *Apprentissages, États et sociétés dans l'Europe moderne - Varia* (Dec 2019), p. 121.
[35] Ibid, p. 13.
[36] Ibid, p. 14.
[37] Brett de Munch, 'Skills, Trust, and Changing Consumer Preferences: The Decline of Antwerp's Craft Guild from the Perspective of the Product Market, c. 1500–1800' in *International Review of Social History* Vol. 53 No. 2 (August 2008), p. 205-206.
[38] Peeters, 'The painter's apprentice in fifteenth and sixteenth century Antwerp: an analysis of the archival sources, p. 17.
[39] de Munch, 'Skills, Trust, and Changing Consumer Preferences: The Decline of Antwerp's Craft Guild from the Perspective of the Product Market, c. 1500–1800,' p. 28.
[40] Koenraad Brosens and Inez De Prekel, "Antwerp as a production center of paintings (1629-1719: A qualitative and quantitative analysis", *Oud Holland – Journal for Art of the Low Countries* 134, 2-3 (2021), p. 132.
[41] Ibid.

deceased Netherlandish painters.'[42] As *Saint Jerome* falls between the two groups of regulations, its economic production reflects both the readymade works of popular compositions sold by artists at the pand as well as the sale of copies and forgeries.

Conclusion

In our material and technical analysis of *Saint Jerome in His Study*, we were able to investigate the changing landscape of painting production and the role of paintings as a commodity in Antwerp. Concluding that the painting was likely not created under the workshop of either Joos or Cornelis van Cleve due to dendrochronology, this report is instead focused on the role of the pand in the trade of paintings as a commodity and the creation (and re-creation) of depictions of Saint Jerome. The research on the different copies of *Saint Jerome in His Study* also helps to inform the ongoing conservation treatment as it aims to present the painting closer to the artist's intention.

This painting is just one of the thousands of Saint Jeromes created both inside and outside the workshop and further material and technical analysis were essential for understanding the artistic production and patronage of 16th-century Antwerp. This research will help to inform further studies on the role of the pand in the trade and production of paintings, the popularity of Saint Jerome during the Northern Renaissance, and the legacy of Joos van Cleve.

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[42] Ewing, 'Marketing Art in Antwerp' in *The Art Bulletin* Vol. 72, No. 4 (Dec 1990), p. 574.

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