



5b

The Van Eycks' Creative Process

The Frames: an Exceptional Polychromy

Anne-Sophie Augustyniak, Laure Mortiaux and Jana Sanyova

As Leon Battista Alberti explains in his treatise *De Pictura* (1435),¹ the painted image is the window and the frame is the border that signals to the viewer the boundary with the real world. The polychrome decoration on the frame plays a crucial role in this, marking the transition between depicted space and real space.² Fifteenth-century artists, Van Eyck in particular, knew this and often took as much care with the frame as they did with the painting.³ When painted in *trompe l'œil*, when imitating dressed stonework or marble, or when the painted image extends onto the frame, the polychromy serves to transgress the border created by the frame. Likewise, in order to challenge the spectator's impression of what he is looking at, the frame can be extended into the painted image.

If we study Van Eyck's works in their original state, the importance accorded to the frames is abundantly clear, and so is the subtlety with which the polychromy is handled. However, this delicate decoration had become imperceptible on the exterior panels of the *Ghent Altarpiece* before its restoration. Although original, the darkened frames created vertical breaks between the scenes, and since the frames' original polychromy was masked by overpainting – as were the letters constituting the famous quatrain – it was no longer possible to view the painted image and the frames as an ensemble.

The conservation and restoration treatment of the frames (fig. 5b.1) carried out in parallel with the work on the paintings, has revealed the relationship, so important in Van Eyck's works, between the frame and the painting.⁴ Today, this rediscovery has made it possible not only to appreciate the original polychromy on the frames of the exterior panels, but also to gain a better understanding of the creative process. While the frames of the open polyptych are gilded, the imitation stonework of the exterior consists of silver leaf covered in coloured glazes, in tones modulating from yellow to red and heightened by touches of colour. The choice of silver leaf as a base for the simulated dressed stonework has raised a number of questions, about both the technique, and the symbolic significance of this choice.

Fig. 5b.1. (facing page) The original polychromy of the frames imitating dressed stonework (after treatment)

FRAMES AND POLYCHROMY

The frames of early Netherlandish paintings have been consistently disregarded or relegated to the background; most have disappeared by now, or have survived in an altered state, a shadow of their former appearance. Nevertheless, a number of works by Van Eyck, including the *Annunciation Diptych* (1433–1435),⁵ *Saint Barbara* (1437; fig. 5b.2),⁶ the *Portrait of Margaret van Eyck* (1439; fig. 5b.3)⁷ and the *Virgin and Child at the Fountain*⁸ (1439; fig. 5b.4) have come down to us in their entirety. These examples demonstrate the concern for realism shown by Van Eyck in his representation of the stonework, and the degree to which the subtle link between the frame and the painting gives a characteristic dimension to the work. It is relatively easy to identify the stone varieties that inspired Van Eyck. Often, they are jasper or porphyry, or different types of marble.⁹ In the latest edition of her technical study of Southern Netherlandish panel painting of the fifteenth and sixteenth centuries, H el ene Verougstraete devotes a long chapter to this subject.¹⁰ It is the skilful handling of the brush and the subtle use of glazes that breathe life into these illusory materials. And so, likewise, the question arises as to the status of the frames of the *Ghent Altarpiece's* exterior panels.

The original polychromy on the exterior panels imitates a dressed masonry construction with black joints added every 12 to 17 centimetres. The illusion of stonework is created by a succession of stone blocks in colours that differ slightly thanks to subtly varying glazes of yellow, green and pink. The stone is speckled with black flecks heightened in a lighter colour (also varying between yellow, green and pink) which gives each stone its individual rough quality (fig. 5b.1). Today the colours have altered and darkened: the appearance and colour of the polychromy currently make the stonework appear more aged and patinated. Our aim in this article is to keep in mind the impact that this *trompe l' eil*, with its dazzling reflections given off by the silver leaf and coloured glazes, must have had at the time.

Imitation stonework was frequently used by Van Eyck and his contemporaries to decorate the frames¹¹ of both small paintings and large polyptychs. One example is to be found on the exterior wings of the carved *Passion Altarpiece* in Ambierle, painted in 1466 by a follower of Van der Weyden.¹² Although this type of decoration is usually painted, the technique used on the exterior panels of the *Ghent Altarpiece* is not as straightforward and has, as a result, caused some scholars to doubt its authenticity.¹³ A detailed study thus had become indispensable; it was carried out in two phases: with the binocular microscope at the beginning of the treatment, and then, after the cleaning, in greater depth, in close collaboration with the laboratories of the KIK-IRPA.¹⁴

THE PREPARATORY LAYERS

As was customary at the time, the preparatory layers were applied with the panels already in their frames.¹⁵ A layer of glue was applied to the wood (layer 1) before the ground made of chalk and animal glue (layer 2). In this case, the layer was relatively thin, varying in thickness between 100 and 200 microns. Some samples reveal a pigmented layer which impregnates and seals the upper part of the ground (layer 3) (fig. 5b.8).

Fig. 5b.2. Jan van Eyck, *St Barbara*, 1437 (Koninklijk Museum voor Schone Kunsten, Antwerp). Detail of the painted frame imitating jaspis or porphyry (?)

Fig. 5b.3. Jan van Eyck, *Portrait of Margaret van Eyck*, 1439 (Groeninge Museum, Bruges). Detail of the painted frame imitating marble or jaspis (?)

Fig. 5b.4. Jan van Eyck, *The Virgin and Child at the Fountain*, 1439 (Koninklijk Museum voor Schone Kunsten, Antwerp). Detail of the painted frame imitating marble



5b.2



5b.3



5b.4



5b.5 a



5b.5 b

Fig. 5b.5 (a and b). Stereo photomicrographs demonstrating the presence of hairs in the ground of the frame of *Joos Vijd*



5b.6 a



5b.6 b

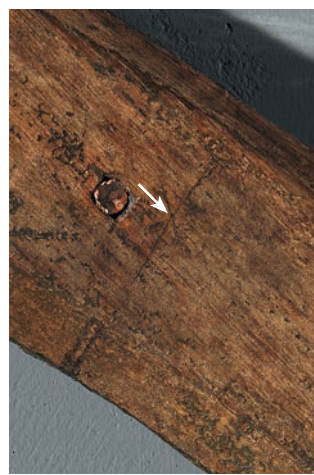
Fig. 5b.6 (a and b). Incised line marking the position of a joint on the left stile of frame of the *Archangel Annunciate*



5b.7 a



5b.7 b



5b.7 c

Fig. 5b.7. Incised lines and cross marking the position of joints in the arched top of frame of the *Interior View*

The preparatory layers were probably applied with a spatula as well as a brush, the latter evidenced by the numerous bristles embedded in the material (fig. 5b.5).¹⁶ Where the fake joints occur, the preparatory layer presents horizontal incisions across the width of the frame to mark their location (fig. 5b.6). However, in the arched part of the frame of the *Interior View*, as well as incised lines, crosses have been cut into the ground, which could be the traces of reference points for a compass (fig. 5b.7).

SILVER LEAF ON MORDANT

The technique of applying an oily mordant to the ground as a base for the silver leaf is often described as matt gilding/silvering, to differentiate it from the polished look of gilding/silvering applied to an aqueous ground layer – the bolus. Only metal leaf applied on an aqueous underlayer could be burnished to great sheen with the aid of an animal's tooth or an agate. However, in the case of the exterior panels of the *Ghent Altarpiece*, the effect sought by the polychromers was not a matt appearance, but more likely the light lustre of a satin finish.¹⁷ This surface could be obtained by sanding the ground extremely finely, or by polishing it and applying glazes on the metal leaf. The silver leaf could also be smoothed delicately with cotton – a process mentioned in medieval recipes,¹⁸ notably by Cennini¹⁹ – before the glazes were applied.

The oily layer onto which the silver foil was applied is today called *mixtion* in French and *mordant* in English. The French term derives from the fact that this layer contains a mixture of pigments and ingredients intended to create a special colour, whereas the English term refers to its adhesive function and corrosive effect. This layer is designed to enable the metallic foil to stick and to lend it the tone required by the artist. Artists were conscious of the influence the background tone had on the colour to be perceived after the foil had been applied. The chromatic function of the mordant is clear, and in medieval technical treatises the terms used to define this layer are often connected with colour: *couleur d'or* (French), *goutverwe* (Dutch) and *goltvarwe* (German). As a matter of fact, the polychromers could vary the colour (from white, beige, yellow to orange, red and, less frequently, brown), its intensity (from transparent to opaque) as well as its thickness.²⁰ Ideally the pigments and other ingredients recommended for these layers should have siccative properties,²¹ and the binder was nearly always oil-based, sometimes with the addition of resin in a fairly high concentration.²²

The mordant revealed here was applied in two oily layers (see fig. 5b.8): the first layer applied on the ground is orange in colour and contains a mixture of minium, calcium carbonate and a little ochre. The frames in the lower register sometimes contain other ingredients in minute quantities, including white lead, lead-tin yellow, or powdered glass (layer 4). The second layer (layer 5) is lighter; it contains more binding medium and is therefore more transparent. This layer contains the same ingredients but with the addition of white lead. It is quite thick in some places (30–40 microns), in others so fine as to be almost invisible. The role of the first layer is to give colour, but it also acts as an isolation layer, rendering the ground impermeable. The second layer, on the other hand, appears to have an adhesive function. It could also have been used to modify the colour of the first layer if this were judged to be too intense. The chemical composition of the two layers is very similar, except for the

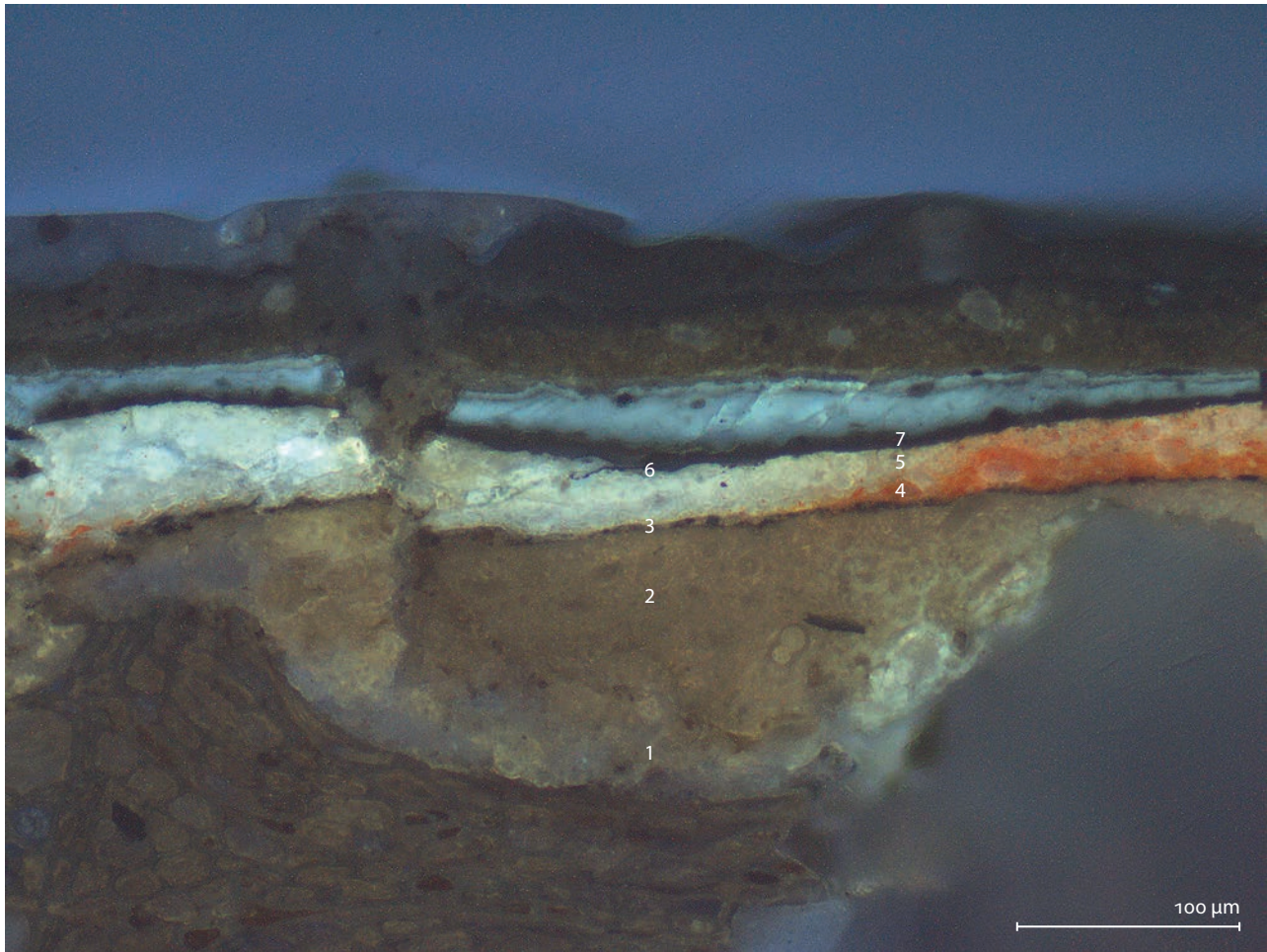


Fig. 5b.8. Cross section (sample from frame of the *City View*) showing the irregular thickness of the mordant layer

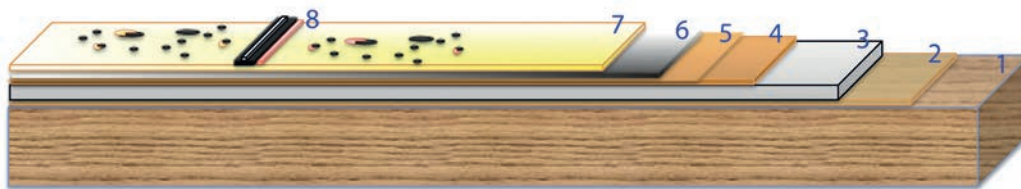


Fig. 5b.9. Diagram of the stratification of the original polychromy: 8. Black and coloured accents; 7. Glaze; 6. Silver leaf; 5. Mordant; 4. Red lead-based layer; 3. Ground layer; 2. Glue layer; 1. Wooden support in oak

proportion of the binder which is higher in the upper layer. Minium and white lead provide colour as well as being siccatives.

In this connection, it is worth bearing in mind that it was this *mixture* in two layers that in 1951 made Paul Coremans suspicious about the authenticity of the polychromy on the frames and, as a consequence, of the authenticity of the quatrain.²³ He saw the two base layers – ‘*deux assiettes*’²⁴ – as evidence of two different interventions. Astonished not to find any remnants of gilding, as existed on the frames of the open polyptych, he advanced the hypothesis that the first application might be the base layer of an earlier gilding process, eliminated by sanding during a previous cleaning, and that the second layer could have functioned as a base for the silver leaf during a later intervention, and thus was not original. During the current investigation, however, no traces of earlier gilding or polychromy have been found. Therefore, this double layer with its triple function – chromatic, isolating and adhesive – understandable enough from a technical point of view, can be regarded as a single intervention. If we consider other works of art of the same period, this stratigraphy in several layers – oily mordant on an intermediary pigmented layer – does not seem so unusual.²⁵ It can be found under the original gold leaf on the frames of the wings of the open polyptych.²⁶ In addition, images representing painters in their studios also provide an explanation for the double coloured layer: although it is generally agreed that the painter executed his painting on a framed panel covered in a white ground, as can be seen for example in the background of the *St Luke Drawing the Virgin and Child* attributed to the workshop of Bouts and now in the Bowes Museum,²⁷ a painting of the same subject by Derick Baegert, dated 1480–85, now in the LWL – Museum für Kunst und Kultur in Münster, also demands our attention.²⁸ St Luke is seen painting the Madonna on a panel whose integrated frame is painted red. If we discount the idea of a finished red frame, quite common in Germany at that time, it could be deduced that the painter had applied a layer of colour to the frame during the painting process; the frame would then receive a second layer of mordant for the adherence of the metal foil and to complete the polychromy.²⁹ The suggestion that the mordant layer was applied in two stages – the coloured underlayer during the painting process and the coloured mordant after its completion – could account for the double layer on the stratigraphic sections in the *Ghent Altarpiece*. On the other hand, there is little doubt that at least one of the orange underlayers as well as the silver leaf were applied after completion of the paintings or during the finishing process. Evidence of this can be found in the many fragments of silver leaf found on the surface of the painted arches and columns in the lower register, the traces of the orange substrate on the paint layers at the edges of the panels, and finally, the overflows of original paint on the white preparatory layer of the frames, covered by the polychromy.

THE COLOURED GLAZES

On top of the fine silver leaf, which is of a consistent thickness of about 1 micron,³⁰ the *trompe l'œil* imitation of the varied tones of the ashlar masonry is rendered using coloured glazes modulating from yellow to red (fig. 5b.9). In addition to their aesthetic value, these coloured glazes certainly played a part in preventing the silver leaf from

oxidizing or tarnishing. No other protective layer has been detected between the layer of silver and the coloured glaze. Although they are visible under the microscope, the modulations in the tonality and the intensity of these glazes cannot be accurately evaluated today because of material degradation.³¹ Examination of a few samples has nevertheless allowed some of the components of the glazes to be identified. Regularly found is calcium carbonate combined with red lake, carbon black and ochres. A sample of the pink highlights from the frame of the *Virgin Annunciate* has revealed the presence of a red lake prepared from the waste of dyed wool. This coarse-grained lake, on a protein-containing substrate, was frequently used by painters in the fifteenth and sixteenth centuries.³² It has also been detected in two other paintings by Van Eyck, the *Portrait of Margaret van Eyck*, now in the Groeninge Museum in Bruges and treated at the National Gallery, London, and the *Washington Annunciation*.³³ Infra-red spectroscopy has revealed the presence of a large quantity of calcium oxalate, a degradation product which substantiates the degraded appearance of the glazes.

OPAQUE HIGHLIGHTS AND INSCRIPTIONS

Opaque highlights were added to the coloured glazes to complete the imitation stonework. Joints, consisting of three lines – a black line with a white line on top, and a pink, yellow or green line below according to the colour of the glaze – were placed at fairly regular intervals, every 12 to 17 centimetres on the flat faces and bevelled edges. Generally speaking, on the rails (horizontal members) the coloured highlight is placed to the left of the black joints; on the stiles (vertical members) the highlight is placed just below the black line (figs 5b.10 and 11). A scattering of irregular black flecks heightened with a light colour – yellow, pink or green – plus some very fine veining here and there suggest the rough surface of the stone. The rhythm is ensured by the alternating glazes and coloured highlights. The pigments employed are the same as the pigments identified in the paintings, which is to say lead white, lead-tin yellow, carbon black, earth pigments and calcium carbonate. It was during this stage that the quatrain and the inscriptions, of which the examination is described elsewhere in this volume,³⁴ were painted.

Although the appearance of the imitation stone, obtained by the use of small black flecks heightened with light colours, has altered today, the rendering of the stone seems nevertheless to differ slightly between the lower and upper registers (fig. 5b.10). In fact, in the lower register the black flecks are small and more numerous and are accompanied by coloured highlights in green, yellow or pink varying from one stone to the next. The black joints with a white line on top are also underlined by the same type of coloured highlights as the green, yellow and pink dots (see figs 5b.12 and 13). On the stiles the alternation of 'green-yellow and pink' highlights is not always repeated consistently. On the other hand, we have identified a similarity between adjacent members of the frames. For example, the right stile of the frame of *Joos Vijd* and the left stile of the frame of *St John the Baptist* present exactly the same pattern of coloured highlights. The same goes for the right stile of the frame of *St John the Evangelist* and the left stile of the frame of *Elisabeth Borluut* (fig. 5b.11). This similarity between the stiles and the scattered flecks completes the illusion of a succession of the



Fig. 5b.10. Details of the imitation stonework using small black touches heightened with bright colours show a subtle difference between the upper and lower registers after treatment

same blocks of stone from one frame to the next. There can be no doubt that the frames of *Joos Vijd* and *St John the Baptist* and those of *St John the Evangelist* and *Elisabeth Borluut* were painted side by side and treated in pairs. Like the joints, some of the veining is carried over from one frame to the next, and all of it is executed with the same firm confidence.

With regard to the upper register, the dots are broader and form more widely-spaced flecking. The black specks are heightened with broad strokes of yellow or pink, occasionally white. By contrast, no coloured highlights can be detected along the joints. The arched parts of the frames in the upper register are handled slightly differently, in a manner akin to that of the polychromy in the lower register. Here again we find flecks and joints accompanied by coloured highlights – green, yellow or pink, varying from one stone block to the next to provide the same repetitive rhythm. Worth noting is that the alternating coloured highlights can be found right along the left stile of the frame of the *Archangel Annunciate* and across the upper rail, whereas they are not present on the stiles and rails of the other frames. The distribution of coloured highlights on the frames in the upper register is summarized in the diagram (fig. 5b.12). Certain areas are marked with a question mark – these areas show paint losses and no longer provide sufficient information about the colour of the highlights. Some of the stone blocks bear no coloured highlights and present solely black flecks. It is difficult to be certain whether these highlights have disappeared or whether they were absent from the start; the hypothesis could be advanced that the flecking and speckles on the frames in the upper register, designed to be placed higher up, might have been deliberately accentuated in order to be distinguished with the same intensity as those in the lower register.

INTERPRETATION

At the end of this study and of our examination of the successive layers on the bevelled edges, we can conclude that the polychromy, which covers the whole of the frames including the edges and the hinges,³⁵ was applied after the panels were painted, as was the usual practice at the time.³⁶ Indeed, the diagram (fig. 5b.14a) shows that, to begin with, the ground (layer 1) was applied to the panel in its frame. Next, the painting (layer 2) of the panel was executed. Once the painting was finished, the polychromy (layer 3) was applied to the frames:³⁷ orange underlayer, mordant, silver leaf, coloured glazes, opaque highlights and inscriptions. Examination of the quatrain and the inscriptions led us to deduce that the letters were contemporaneous with the rest of the creative process.

WHY WAS SILVER LEAF CHOSEN AS THE BASE FOR THE IMITATION OF STONE?

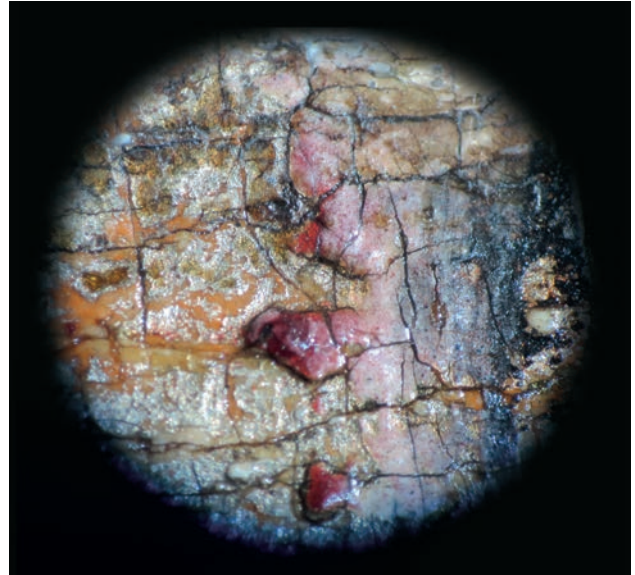
The use of silver rather than gold leaf for the polychromy on the frames of the closed polyptych – gold was nobler and more expensive – has given rise to some queries and continues to do so, not only with regard to its authenticity but also from a technical and aesthetic point of view, as the basis of imitation masonry.

Worth remembering is that silver leaf was widely used in Europe well before the period of Van Eyck. In fact, early treatises³⁸ mention the use of silver for inscriptions and illuminations, for the decoration of sculpture in altarpieces,³⁹ for the representation of the reflections of metal objects or opulent fabrics in painting,⁴⁰ or as a technique for imitating gold, in which case the foil is covered with yellow glazes. The technique of using a less costly material as a substitute for gold leaf – whereby silver or tin foil was polished and then coloured with pigments ground in oil to obtain a golden sheen – is mentioned in the *Leyden Papyrus* as early as the third century⁴¹ and was revived by Theophilus,⁴² Heraclius and Cennini. Unn Plahter also mentions, for example, that in thirteenth-century Norway, silver foil covered with yellow glazes was used more frequently to imitate gold than gold itself.⁴³ Interestingly, the rules laid down by the guilds were very strict with regard to these ‘fraudulent’ practices and forbade the use, for example, of saffron or other colourants to imitate gold – the perpetrator risked prosecution.⁴⁴ Cennini suggests using silver leaf for practising gilding rather than gold ‘because it is less of a loss’.⁴⁵

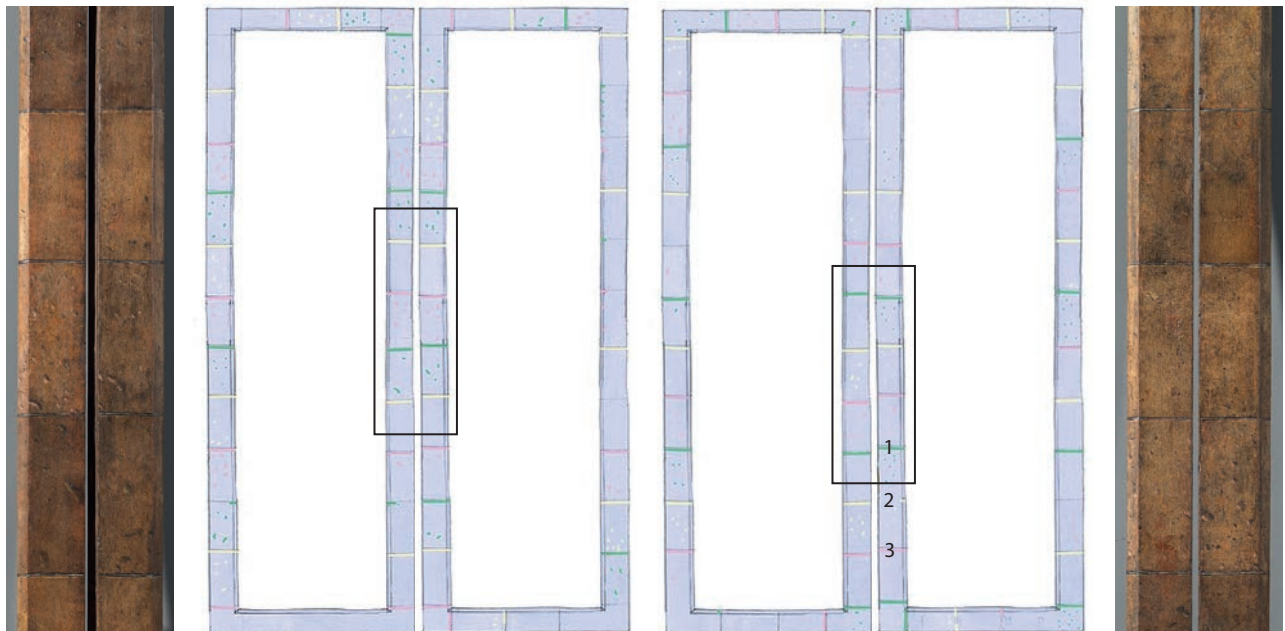
Leaving aside the economic aspect, there is evidence that the techniques of silvering on bolus or mordant, whether or not polished and/or glazed, were widespread throughout Europe, not only in Italy⁴⁶ or Spain,⁴⁷ but also in the Low Countries on carved altarpieces⁴⁸ and, particularly in Germany and Scandinavia, on paintings and polychrome sculpture.⁴⁹ Although aqueous techniques are most often described, the use of silver leaf on mordant in combination with glazes as described by Cennini⁵⁰ was particularly popular in Italy in the second half of the thirteenth century.⁵¹ A rigorous technical examination of works of art from Cologne, accompanied by a catalogue of painted works dating from between 1400 and 1450 published in *Let the Material Talk* (2014),⁵² demonstrates that the same popularity pertained in Northern Europe, where silver leaf was used in the same way as gold, or the two were combined in a technique known as *or parti* or *zwichgold*.⁵³ Innumerable examples bear witness to its local application on an oil-based mordant to imitate the reflection of metallic objects in details such as arms and armour,⁵⁴ keys, the tips of lances, saucepans and plates,⁵⁵ inscriptions and armorial bearings,⁵⁶ or sometimes floor tiles – as can be clearly seen in the upper register of the *Ghent Altarpiece* in the open position.⁵⁷

Nevertheless, the tendency of silver to tarnish rapidly and grow dull, well-recognised by painters and artisans of the period,⁵⁸ its less noble reputation and restrictions on its use laid down by the guilds must certainly have played their part in its relinquishment in favour of gold.

After this brief overview of the context, it is not so surprising that Van Eyck should have chosen silver leaf for the reverse sides of the frames of the wing panels. However, the argument put forward by a number of people that silver leaf was used instead of gold to reduce expense seems implausible in the case of such a major and prestigious commission as the *Ghent Altarpiece*. In our opinion, it is more likely that the choice was dictated by the desire to obtain a particular effect and gleam. Silver, used as a background for mirrors, is a highly lustrous metal, reflecting almost all the wavelengths of the visible spectrum. Although the use of silver to suggest metal in the painted representations cited above is quite comprehensible, its use as the basis for creating *trompe l'œil* stone blocks is certainly unexpected, indeed virtually unique. This makes the exceptional nature of this work of art even more extraordinary.



5b.11



5b.12

Fig. 5b.11. The intensity of some of the glazes is still visible under a binocular microscope: remaining traces of red glaze at the edge of a *trompe l'œil* joint in the upper rail of the frame of *Elisabeth Borluut*

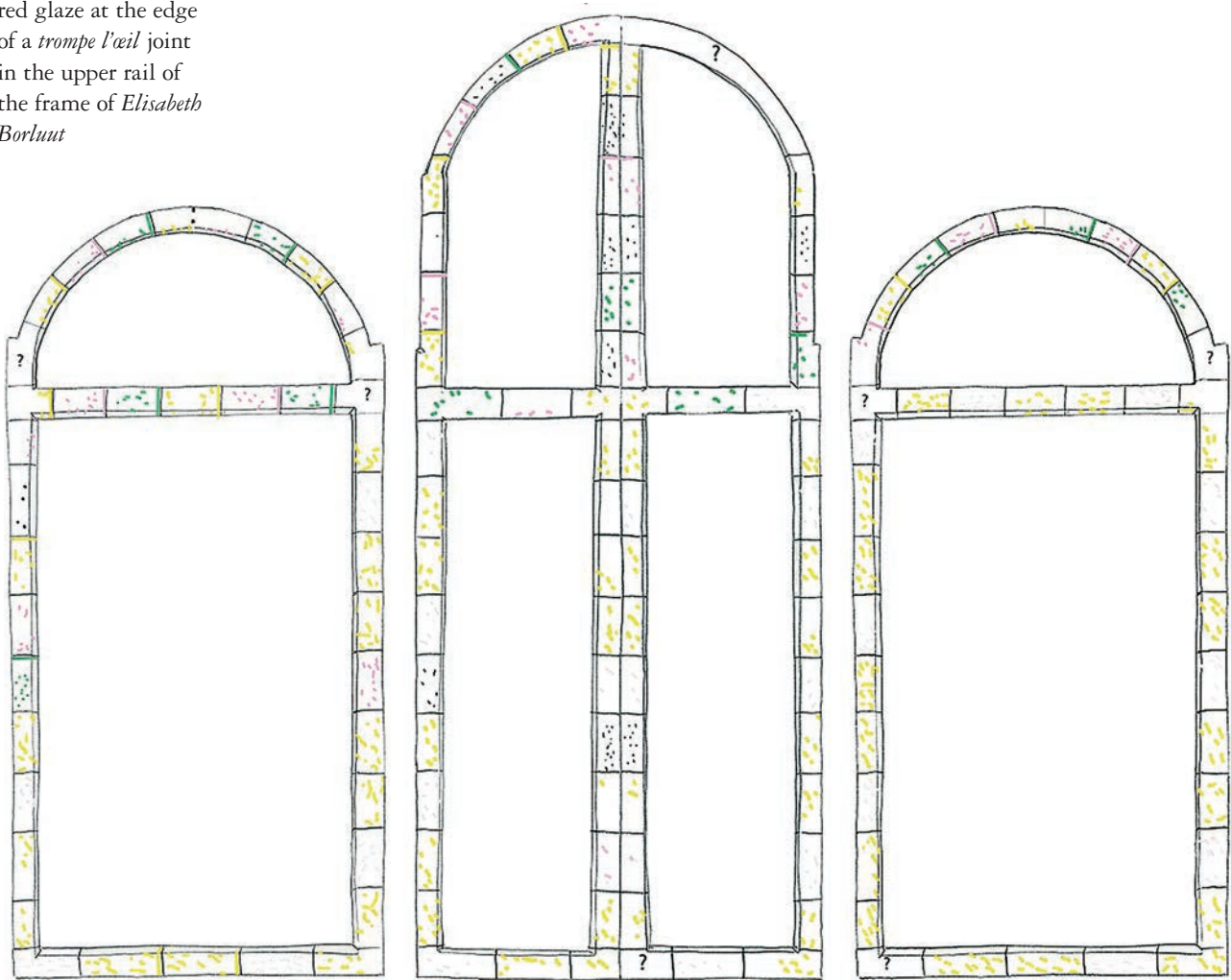
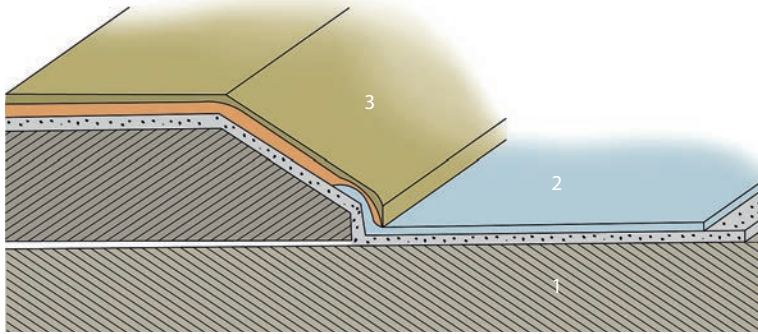


Fig. 5b.12. Diagram of alternately coloured highlights in the frames of the lower register; alternating 'green (1)–yellow (2)–pink (3)' highlights below the black joints of the left stile of the frame of *John the Evangelist*

Fig. 5b.13. Diagram of coloured highlights in the frames of the upper register.

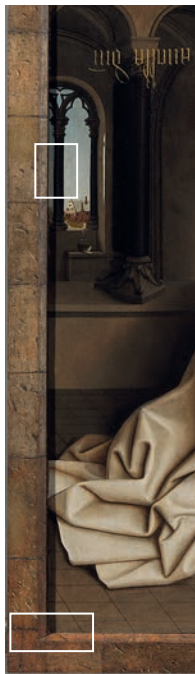
5b.13



5b.14 a

Fig. 5b.14a. Diagram showing that the blue paint is covered by the orange base layer of the frame's polychromy

Fig. 5b.14b. In the *Virgin Annunciate*, the blue sky spills on the chamfer of the left stile of the frame. The blue paint is covered by the orange base layer of the frame's polychromy (1-3). The orange underlayer is visible at the lower left corner of the frame and on the surface of the panel (4).



1.



2.



3.



4.

5b.14 b

In the absence of examples of this technique on other frames,⁵⁹ we need to consider the choice of silver for its intrinsic aesthetic qualities in two other paintings: Bernardo Daddi's *Coronation of the Virgin* of about 1340, in which the lining of the Virgin's mantle and that of Christ are painted using a green glaze on silver leaf, laid on an oily mordant;⁶⁰ and the fascinating *Portrait of Philippe de Croy*, painted by Rogier van der Weyden in 1464, where the entire background consists of silver leaf covered with a green glaze.⁶¹ As on the frames of the *Ghent Altarpiece*, Van der Weyden does not seem to be imitating the metallic reflection of any object or material; he uses the reflection of light on the silver leaf to obtain a particular pictorial and visual effect. Although these green backgrounds, in Daddi's painting as well as in that of Van der Weyden, have darkened and no longer glow as they used to, the effect they must have produced on their contemporaries when they were first painted may well have been comparable to that produced by the dazzling polychromy on Van Eyck's frames. Polychromy on silvering, bright and luminous in tone, will surely have increased the impression of the frames projecting in front of the painted surface, and thus also must have given the impression of a window onto another spatial dimension, luminous and spiritual.

It is clear therefore that, whatever Coremans may have thought,⁶² the coloured glazes modulating from yellow to red and lending a warm tone to the silver leaf, were not intended to imitate gilding. Why, anyway, would Van Eyck have chosen to imitate gilding when he had the means to use genuine gold leaf? Similarly, why would he have gone through the trouble of using metallic foil and the subtle interplay of coloured glazes when he could have managed with a straightforward painted imitation of stone? We should certainly interpret this as the desire for a particular effect: it allowed him to establish a common basis with the gilded frames of the open altarpiece and thus to establish a hierarchical link between the exterior and the interior, a means of dissociating real space from the painted space on the inside of the wings.

THE STONE REPRESENTED: SUBLIMATED REALITY?

Meanwhile, in addition to the symbolic dimension of the metal foil, we know that Van Eyck excelled in the art of *trompe l'œil*, and of reproducing different materials. Although some are of the opinion that no attempt should be made to identify the varieties of painted stone in fifteenth-century frames – and that we should simply assess their decorative effect⁶³ – the question of the nature of the stones represented here has inevitably arisen.⁶⁴ Our early attempts led us to make comparisons with travertine, a sedimentary calcareous rock, white in colour but sometimes veering towards grey, yellowish, reddish or brown, according to the impurities present within it, and characterized by small vacuoles dispersed irregularly through it. The dark spots with coloured highlights of the polychromy could be imitating the vacuoles in travertine.

However, a number of specialists in stone, including Marleen De Ceukelaire⁶⁵ and Francis Tourneur⁶⁶ have excluded this hypothesis in favour of Lede stone, also known as Balegem stone⁶⁷ (fig. 5b.15). Lede stone is a calcareous sandstone, varying from grey to light brown in colour, homogeneous in structure and with a very characteristic yellow patina. In olden times, it was quarried over a huge area stretching from Ghent



5b.15 a



5b.15 b

Fig. 5b. 15 (a–b).
Visual comparison
between the imitation
stonework of the
frames and the Lede
stone of the steps of
Sts Michael and
Gudula Cathedral,
Brussels

to Leuven. From the High Gothic period onwards, Lede stone was the most popular building material and used for any number of buildings,⁶⁸ including notably St Bavo's Cathedral. Camille De Clercq⁶⁹ is of the opinion that besides the stone's appearance we should also take account of the masonry construction per se. This broader view permits further comparisons with, for example, ferruginous sandstone (*ijzerzandsteen*), another stone much used in the Low Countries and to be found in many fifteenth-century buildings. This approach invites us also to bring the stone imitations in the paintings in the lower register into the discussion. The St John sculptures seem to imitate polished marble, whereas the trefoil arches could be made of Avesnes or Lede stone. How can we account for such a difference in pictorial treatment between the painted architecture and the frames if the latter also imitate a variety of calcareous stone (fig. 5b.16)? Worth noting is that neither Lede stone nor ferruginous sandstone can be polished on account of their porous nature and friable structure. This would seem to be in total conflict with the use of silver leaf covered with coloured glazes to evoke the brilliance and lustrous appearance of polished stone. Even if the stone represented has no basis in reality, the *trompe l'œil* of the frames visually echoes the stones represented in the paintings. The handling is similar, and the roughness of the stone is rendered with the same precision as in, for example, the paving in the panel of *Joss Vijd* (fig. 5b.18), the border of the niche in the *Interior View* (fig. 5b.17) or the wall in the background of the *Virgin Annunciate* (fig. 5b.19) .

The illusion of painted stone must surely also have had some connection with the immediate context of the Vijd chapel and the cathedral, both of which comprised elements made of the same type of stone. The use of silver leaf on the frames of the

Fig. 5b.16
(a–b). Lower register
after restoration:
a. overall view;
b. detail



5b.16 a



5b.16 b



Fig. 5b.17. The border of the niche in the *Interior View*

Fig. 5b.18. The paving in the panel of *Joos Vijf*

Fig. 5b.19. The wall in the background of the *Virgin Annunciate*



5b.19

exterior panels to give a particular quality of reflection could also be interpreted as a progression from the real space of the cathedral towards the sacred space of the altarpiece, culminating in the interior scenes, whose frames were covered with gold leaf. The use of metallic foils inside and outside the polyptych (whose reflective qualities must have been intensified by candlelight) ensures a visual link between the two levels of the altarpiece, reinforcing their symbolic significance.

In the absence of any conclusive answers following our research into the types of stone represented, other hypotheses could be entertained – for example, H el ene Verougstraete's suggestion about the possible influence of marbled paper from the Middle East, which was used for books and miniatures and made a strong impression on the painters and polychromers of the day.⁷⁰ After all it is not unlikely that instead of rigorously imitating reality, Van Eyck took his inspiration from the fictive marbles and stylized motifs featured on marbled papers. Whatever the truth of the matter, Van Eyck probably wished to sublimate reality, producing a very unusual effect as he did in many of his works.

CONCLUSION

The comprehensive study and treatment of the frames proves once again that restoration, supported by laboratory analysis, provides a privileged insight into early techniques, particularly those of the frames, which are far too often ignored.

Interdisciplinary study and the conservation and restoration work carried out allowed us to (re)discover and reinterpret this exceptional polychromy – which has nevertheless not ceased to challenge many of us. It is exceptional in more than one respect, not only because the choice of silver leaf covered with glazes to suggest stone is unusual in itself, but also because it appears to be unique in the work of Van Eyck and contemporary artists.

If there are those, including Paul Coremans in 1951, who have doubted the authenticity of the polychromy on the frames of the closed polyptych and therefore the authenticity of the quatrain, other elements such as the absence of traces of any earlier polychromy, the evidence of double-layered mordant under the silver leaf – interpreted today as a single application – the similarity of the composition of the pigments of the glazes and the opaque highlights to those of the paintings, as well as the context of the widespread use of silver leaf well before Van Eyck's day all plead in favour of authenticity. And even if the use of silver leaf as the base for the illusionistic rendering of stone in painting seems atypical and raises questions, it is definitely not without importance: here Van Eyck is not satisfied with copying reality, he transcends it. In fact, the stone depicted in *trompe l'oeil* does not seem to be directly inspired by reality: Van Eyck uses the glow and the reflection of the light on the silver leaf to create an unexpected pictorial effect, and to give the closed polyptych a special dimension and symbolism.

NOTES

- 1 Alberti 1992.
- 2 The concept of frame-painting is explored in a number of books and essays by various authors, including Arasse 2002; Beyer 2006; Bjerre 2008; Paris 1990; Mitchell, Roberts, 1996; Penny 2011.
- 3 Verougstraete 2015; Billinge et al. 1997.
- 4 With regard to the restoration treatment of the frames of the exterior panels, see contribution 4b by Augustyniak and Mortiaux in this volume.
- 5 *Annunciation Diptych*, 1433–1435, oil on panel, left wing: 38.8 x 23.2 cm/right wing: 39 x 24 cm, Museo Nacional Thyssen-Bornemisza, Madrid, inv. 137.b.
- 6 *Saint Barbara*, 1437, oil on panel, 31 x 18 cm, Koninklijk Museum voor Schone Kunsten, Antwerp, inv. 410.
- 7 *Portrait of Margaret van Eyck*, 1439, oil on panel, 32.6 x 25.8cm, Groeninge Museum, Bruges, inv. 000.GRO 1621.
- 8 *Madonna at the Fountain*, 1439, oil on panel, 19 x 12cm, Koninklijk Museum voor Schone Kunsten, Antwerp, inv. 411.
- 9 Verougstraete prefers the term 'jasper' to 'porphyry', see Verougstraete 2000, pp. 110–111 nn. 13 and 14.
- 10 Verougstraete 2015, Chapter IV, 'Carved and painted decoration', pp. 83–102.
- 11 On the frames as well as on the painted exterior wings.
- 12 The Ambierle *Passion Altarpiece*, follower of Van der Weyden, 1466, Eglise Saint-Martin, Ambierle. In Coekelberghs 1970; Bücken, Steyaert 2013, pp. 114–117. The photograph of the closed altarpiece on p. 116 clearly shows decoration of *trompe l'oeil* stonework and Griet Steyaert has given us oral confirmation of the originality of the polychrome painting, in spite of a number of restorations.
- 13 Including Paul Coremans who nevertheless admitted that a more thorough investigation of the polychromy on the frames was needed. Coremans 1953, p. 122. The problem of the authenticity of the polychromy will be examined under the heading *Silver leaf on mordant*.

- 14 We would like here to extend our warmest gratitude to the restoration team, and to Cécile Glaude, Caroline Boulord (in the context of the research project financed by Belspo, Action 1-MO/39/011, 'The Mystic Lamb in the laboratory 60 years after Paul Coremans. The contribution of new analytical techniques'), and also to Alexia Coudray (in the context of the project financed by the Gieskes-Strijbis Fund).
- 15 Verougstraete 1989; 2000; 2015; Billinge et al. 1997, pp. 18–20. Large numbers of pictures depicting painters' workshops illustrate this practice. On the subject of the production of the supports and frames of the *Ghent Altarpiece*, see contribution 2 by Ketels, Glatigny and Augustyniak in this volume.
- 16 See contribution 5a by Postec and Steyaert in this volume.
- 17 Nadolny 2006, pp. 148–62.
- 18 Nadolny 2001.
- 19 CXLIII – Chapter 150, in Broecke 2015, p. 182.
- 20 Walcher, Stege, Von Baum 2014, pp. 93–94.
- 21 'The pigmentation consists of a mixture of ochre and lead pigments (lead white, minium, occasionally also lead-tin yellow) in varying proportions. Frequently small amounts of black, cinnabar, azurite, red lakes and chalk were added', in Walcher, Stege, Von Baum 2014, p. 93; see also Billinge et al., 1997, pp. 31–32.
- 22 Nadolny, 2001.
- 23 Coremans 1953, p. 122.
- 24 In French the term *assiette* is used for water gilding and usually describes bolus.
- 25 Walcher, Stege, Von Baum 2014, p. 94.
- 26 Samples lifted from the frames of the Cavaliers and Adam wings clearly display the presence of these two layers of mordants. They will be analysed during the preliminary study and the restoration of the frames of the interior of the open polyptych.
- 27 *St Luke Drawing the Virgin and Child*, workshop of Dirk Bouts, c. 1476, 109.2 x 86.4 cm, Durham, The Bowes Museum, Barnard Castle.
- 28 *St Luke Painting the Virgin and Child*, Derick Baegert (1460–1509), c. 1480–85, oil on panel, 62WKV, Münster, LWL – Museum für Kunst und Kultur.
- 29 This coloured underlayer could also indicate the frame during the execution of the painting, as in the first paintings on canvas covered in size, or in *tüchlein* whose edges were often indicated by a border painted in black, brown, orange or red, a reference to polychrome frames or their underlayers. See Verougstraete 2015, p. 78.
- 30 Whether for gold or silver on mordant, it is recommended to use a finer foil than the foil used for burnishing; see Bomford, Dunkerton 2000, pp. 22–23; Cennini, Chapter 139, 'Which gold, and in what thickness, is good to lay for burnishing and for mordants?' (Broecke 2015, p. 174).
- 31 See contribution 4b Augustyniak and Mortiaux in this volume.
- 32 For more details on this material see contribution 3 by Sanyova et al. in this volume.
- 33 Spring, Morrison 2017.
- 34 See contribution 6 by Jones, Augustyniak and Dubois in this volume.
- 35 The hinges connecting the frames are covered by the same polychromy, which disguises them completely.
- 36 Verougstraete 1989; 2015; Billinge et al. 1997, pp. 18–20.
- 37 Because of the different processes undergone by the frames, it has not been possible to study the transition area along the edges of the frames between the silver leaf, present on the reverses, and the gold leaf laid on the front of the frames. This information was lost when the frames were sawn along the grain and the edges were planed.
- 38 The most important early texts that refer to gilding and silvering techniques are: *Mappae Clavicula* (ninth–tenth century): Smith, Hawthorne 1974; *Schedula diversatum artium* by Theophilus Presbyter (twelfth century), Hawthorne, Smith 1979, particularly Book 3; *The Art of the Metal-worker*; *Il libro dell'Arte* by Cennino Cennini (1390–1435), see Broecke 2015; *Manuscript of Strasbourg* (1400–1570): see Neven 2016; *Experimenta de coloribus*, *Manuscripts of Jehan Le Begue* (1431) and *De coloribus et artibus Romanorum*, Heraclius/ Eraclius (XIII) in Merrifield 1999; See also contribution 5b by Augustyniak, Mortiaux and Sanyova in this volume.
- 39 Especially in the techniques of *sgraffito* or applied brocades; see Geelen, Steyaert 2011 and Stroo 2009.
- 40 Even though Cennini does not advise its use because it tarnishes rapidly (Broecke

- 2015, p. 130), he recommends it for representing rich drapery, by applying a layer of vermilion bound in egg, or lake in oil (Chapter 148, Broecke 2015, p. 181), or ultramarine in glue, on burnished silver (Chapter 149), and then adding gold or silver decoration on mordant if required (Chapter 160, Broecke 2015, p. 182); Hoeniger 1991.
- 41 Halleux 2002.
- 42 See 'De la manière de colorier les feuilles d'étain en sorte qu'elles paraissent dorées et qu'on puisse s'en servir quand on n'a pas d'or' in Théophile 1998, p. 20 and XXIX, *De la peinture transparente*, pp. 21–22. See also Hawthorne, Smith 1979, Book 1, xxiv: 'Tin Leaf', and xxvii: 'Translucent Painting'.
- 43 Plahter 2004, p. 44.
- 44 The prohibition of this practice is mentioned between 1371 and 1397 in Cologne (see Walcher, Stege, Von Baum 2014, p. 92); in Siena in 1355 (see Bomford, Dunkerton et al. 1994, p. 7); in Antwerp in 1470 (see Campbell, Foister, Roy 1997, p. 9); in Ghent the practice was referred to with the terms *tentvelde* or *tintvellen* (see Martens 1986, p. 3).
- 45 Chapter 143: 'If you want to do cloth of silver you should have the same method and conditions for laying silver as for laying gold. In addition, I advise you that if you want to teach lads or young boys to gild, have them lay silver so that they get a bit of practice with it because it is less of a loss' (see Broecke 2015, p. 178). According to Bomford and Dunkerton the price of a sheet of silver was almost one fifth of the price of a sheet of gold; see Bomford, Dunkerton et al. 1994, p. 24 and 201.
- 46 There are numerous examples in Italian painting from the thirteenth century of silver leaf either on bolus or on mordant used to suggest sumptuous fabrics or the metallic glint of armour, as in the three panels of the *Battle of San Romano* by Uccello, c. 1440, 182 x 320 cm, now in Florence, London and Paris; see Roy, Gordon 2001; or to suggest the translucency of a window in the work of the Sienese painter Sassetta (Stefano di Giovanni, 1392–1450), *The Damnation of the Miser of Citerna*, c. 1440, 171 x 89 cm, Musée du Louvre, Paris, RF 1988–89.
- 47 For example, the *Virgin and Child* in which silver leaf decoration on bolus (the lining of the mantle) is combined with gold leaf decoration on bolus and mordant, as well as gold-silver laminate known as *or parti* or *zwischengold*: Master of Burgo de Oisma (Valencian School), *The Virgin and Child Surrounded by Angels*, c. 1430, 171 x 89 cm, Paris, Musée du Louvre, RF 1579; see Martin, Eveno, Ressort 1998.
- 48 The use of gilding but also of polished silver covered with coloured glazes was widespread in the large centres of production of carved altarpieces in the fifteenth and sixteenth centuries in the Low Countries, particularly Brussels, Antwerp and Mechelen. See Serck-Dewaide 1998.
- 49 For Germany, see: Jägers 2016; Nadolny 2006. We cite the case of Norway here because a large number of polychrome sculptures have survived there in a far better state of preservation than those of the Low Countries, thanks to the historical context; they have been studied by a wide variety of scholars; see Plahter 2014, pp. 317–318.
- 50 Broecke 2015, pp. 180–183.
- 51 Hoeniger 1991, p. 155.
- 52 Von Baum et al. 2014.
- 53 Walcher, Stege, Von Baum 2014, pp. 85–131; Billinge et al. 1997.
- 54 In *Saints Gregory, Maurice and Augustine*, Circle of the Master of Liesborn, Westphalia, c. 1465–90, 120 x 67 cm, The National Gallery, London, NG 255, the saint's sword is executed on silver leaf on mordant; see Billinge et al. 1997, p. 55.
- 55 For example, the rendering of the arms in the *Fragment of a Triptych* by the Master of St Lawrence, c. 1420, Wallraf-Richartz-Museum & Fondation Corboud, Cologne, WRF 737, in Von Baum et al. 2014, no. 6, pp. 226–229 and ill. 102, p. 99; or Stephan Lochner's *Last Judgement*, c. 1435, also in Cologne, WRF 66, in which the details of the 'roofs, tip of lance, nails, buckets, cross guard, St Peter's key' are painted on silver leaf on mordant; see Von Baum et al. 2014, no. 18, pp. 274–278, and ill. 83, p. 92; or the plates and saucepans in *The Two Banquets*, Cologne, c. 1450, WRM 862; see Von Baum et al. 2014, no. 13, pp. 253–257.
- 56 Outsides of two wing panels, c. 1435, Bayerische Staatsgemäldesammlungen, Alte Pinakothek, Munich, WAF 501–502; see Von Baum et al. 2014, p. 282 and cross section III.A195, p. 343.

- 57 Coremans (1953, p. 104) mentions the presence of silver foil under the floor tiles in the panel showing God, but as this area has been the subject of extensive overpainting he is doubtful of the authenticity of the application. As it has not yet been thoroughly examined, it is difficult to draw any conclusion. However, whether we are dealing with overpainting or the original, the technique of coloured glazes on metal foil was certainly used to lend a translucent effect to the tiling.
- 58 Broecke 2015, p. 130.
- 59 We have not been able to find any other examples of polychrome frames using silver leaf and coloured glazes to imitate stone.
- 60 Bernardo Daddi, *The Coronation of the Virgin*, c. 1340, egg tempera on wood, 112 x 65 cm, The National Gallery, London, NG 6599; see Di Nepi, Roy, Billinge 2007, pp. 12–13.
- 61 Rogier van der Weyden, *Philippe de Croy*, oil on panel, 49 x 30 cm, Koninklijk Museum voor Schone Kunsten, Antwerp, 254. In Metzger, Steyaert 2009, p. 174; Hand, Spronk, Metzger 2006, Technical Appendix, p. 300. From the point of view of symbolism, the choice of silver could in this case also be linked to the status of the person represented, in relation to the painting that completes the diptych, the *Virgin and Child* from the Huntington Library, San Marino, which has a gold leaf background; Nuechterlein 2013, p. 3.
- 62 Coremans 1953, p. 121.
- 63 Verougstraete, Van Schoute 1994, p. 104.
- 64 Dubarry de Lassale 2000; 2005; Marchi, Tourneur 2002; Cnudde, Harotin Majot 1987; Tordoir 2000.
- 65 Marleen de Ceukelaire is the curator of the geological collections at the Royal Belgian Institute of Natural Sciences, Brussels.
- 66 Francis Tourneur, Doctor of Science (geology), secretary general of the a.s.b.l. 'Pierres et Marbres de Wallonie', member of the CRMS of the Région Wallonne, tutor at the University of Liège and at KUL.
- 67 Camerman 2000.
- 68 *Pierres Naturelles, Notes d'Information Technique* 208, CSTC (Centre Scientifique et Technique de la Construction, September 1997.
- 69 Camille De Clercq, conservator-restorer in the Stone sculpture workshop at KIK-IRPA.
- 70 Verougstraete 2015, pp. 91–96; 1998; 2000, pp. 114–115.

















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Augustin-poussin - St. Johannes van der Waert









Project Participants

Participants of the 2012-2017 conservation/restoration treatment of the *Ghent Altarpiece* (phase 1)

THE PROJECT

Commissioning authority

Churchwardens of St. Bavo's Cathedral, Ghent (KKSBB)

Project planning

Bressers Architects bvba, Ghent (BA), with Christina Ceulemans (KIK/IRPA), Ludo Collin (KKSBB), Anne van Grevenstein (KKSBB, UVA), Maximiliaan Martens (UGent) and Ron Spronk (QU, RUN)

Advisor churchwardens

Anne van Grevenstein (KKSBB, UVA)

Administrative support

Bart Maton (KKSBB), Matthias De Waele (BA)

Advisory committee

Till-Holger Borchert (GM, VKC), Véronique Bücken (KMSKB/MRBAB), Gonda Callaert (AOE), Christina Ceulemans (KIK/IRPA), Ludo Collin (KKSBB), Jozef Dauwe (POV), Ingrid Depoorter (KE), Philippe Depotter (BA, chair), Livia Depuydt-Elbaum (KIK/IRPA), Bart Devolder (KIK/IRPA), H  l  ne Dubois (KIK/IRPA, UGent), Hans Feys (KE), Bart Fransen (KIK/IRPA), Jean-Albert Glatigny (ASAJAG), Anne van Grevenstein (KKSBB, UVA), Margriet Van Houtte (KKSBB), Thomas Leysen (Topstukkenraad KE), Jacques Lust (BELSPO), Madeleine Manderyck (AOE), Maximiliaan Martens (UGent), Pascale De Meyer (MSK), Timothy Naessens (LAF), Anne-Cath  rine Olbrechts (POV), Jo Rombouts (POV), Peter Schmidt (KUL), Leon Smets (formerly FARO), Ron Spronk (QU, RUN), Cyriel Stroo (KIK/IRPA), Johan Vandenbergh   (KKSBB), H  l  ne Verougstraete (formerly UCL), Michel De Vos (POV), J  rgen Wadum (SMK), Matthias De Waele (BA), Linda Wylleman (AOE), Catherine De Zegher (MSK)

Project management

Liesbeth De Belie (KMSKB/MRBAB), Godelieve Van de Castele (DBP), Christina Ceulemans (KIK/IRPA), Ludo Collin (KKSBB), Ingrid Depoorter (KE), Philippe Depotter (BA), Livia Depuydt-Elbaum (KIK/IRPA), Bart Devolder (KIK/IRPA), H  l  ne Dubois (KIK/IRPA, UGent), Bart Fransen (KIK/IRPA), Lieven Gerard (MSK), Anne van Grevenstein (KKSBB, UVA), Maximiliaan Martens (UGent), Bart Maton (KKSBB), Pascale De Meyer (MSK), Lode Van Pee (PCC), Martine Pieteraerens (POV), Jo Rombouts (POV), Cyriel Stroo (KIK/IRPA), Matthias De Waele (BA), Linda Wylleman (AOE)

Site monitoring committee

Griet Blanckaert (UA), Till-Holger Borchert (GM, VKC), Christina Ceulemans (KIK/IRPA), Ludo Collin (KKSBB), Livia Depuydt-Elbaum (KIK/IRPA), Bart Devolder (KIK/IRPA), H  l  ne Dubois (KIK/IRPA, UGent), Ingrid Depoorter (KE, coordination), Hans Feys (KE), Anne van Grevenstein (KKSBB, UVA), Koen Janssens (UA), Madeleine Manderyck (AOE), Evelien Oomen (AOE), Famke Peters (MV), Leon Smets (formerly FARO), Linda Wylleman (AOE)

Working group art history

Till-Holger Borchert (GM, VKC), Bart Fransen (KIK/IRPA-CSFP, coordination), Anne van Grevenstein (KKSBB, UVA) Maximiliaan Martens (UGent), Ron Spronk (QU, RUN), Cyriel Stroo (KIK/IRPA)

Working group climate

Lien De Backer (UGent), Jaap van der Burg (HCS), Ludo Collin (KKSBB), Marjolijn Debulpaep (KIK/IRPA, liaison MSK), Philippe Depotter (BA), Anne van Grevenstein (KKSBB, UVA, coordination), Arnold Janssens (UGent), Shin Maekawa (GCI), Marco Martens (HCS), Bart Maton (KKSBB), Anne-Cath  rine Olbrechts (POV), Michel De Paepe (UGent), Leon Smets (formerly FARO)

Working group communication

Nele Bogaert (POV, coordination), Catherine Bourguignon (KIK/IRPA), Marie-Julie Dellaert (MSK), Bart Devolder (KIK/IRPA), Rik Fabre (KE), Anne van Grevenstein (KKSBB, UVA), Simon Laevers (KIK/IRPA), Bart Maton (KKSBB), Evelien Oomen (AOE), Martine Pieteraerens (POV), Jabez Sinnesael (PCC), Gerrie Soetaert (MSK), Ann Vervaeke (UGent), Vanessa De Vuyst (G)

Working group education

Celesta Dani  ls (KCKK), Bart Devolder (KIK/IRPA), Karen Van Gulik (KCKK), Ann Huyghe (PCC), Ann Langelet (WOCK), Lies Ledure (MSK), Anneke Lippens (POV), Marieke De Munck (BOU), Melanie De Munck (BOU), Els Otte (POV, coordination), Jabez Sinnesael (PCC), Ethel Thuy  n (WOCK), Amand Vilyn (KKSBB)

Working group scientific research

Alessia Coccato (UGent), Livia Depuydt-Elbaum (KIK/IRPA), Bart Devolder (KIK/IRPA), Ann Dooms (VUB-ETRO), H  l  ne Dubois (KIK/IRPA, UGent), Anne van Grevenstein (KKSBB, UVA), Debbie Lauwers (UGent), Maximiliaan Martens (UGent, coordination), Luc Moens (UGent), Anastasia Rousaki (UGent), Jana Sanyova (KIK/IRPA), Steven Saverwyns (KIK/IRPA), Peter Vandenabeele (UGent)

Working group technical imaging and web application

Christina Ceulemans (KIK/IRPA), Bruno Cornelis (VUB-ETRO), Christina Currie (KIK/IRPA), Bart Devolder (KIK/IRPA), Ann Dooms (VUB-ETRO), Bart Fransen (KIK/IRPA), Anne van Grevenstein (KKSb, UVA), Maximiliaan Martens (UGent), Timothy Naessens (LAF), Edwin De Roock (KIK/IRPA), Ron Spronk (QU, RUN, coordination), Frederik Temmermans (UD)

CONSERVATION-RESTORATION TREATMENT AND SCIENTIFIC RESEARCH

Contractor

Royal Institute for Cultural Heritage, Brussels (KIK/IRPA)

Conservation/restoration team

Anne-Sophie Augustyniak (KIK/IRPA), Livia Depuydt-Elbaum (KIK/IRPA, head of team), Bart Devolder (KIK/IRPA, onsite coordinator), H  l  ne Dubois (KIK/IRPA, UGent, coordinator of research and of the international committee of conservation/restoration advisors), Jean-Albert Glatigny (ASAJAG, treatment of supports), Nathalie Laqu  re (KIK/IRPA), Claire Mehagnoul (KIK/IRPA), Marie Postec (KIK/IRPA), Fran  oise Rosier (KIK/IRPA), Griet Steyaert (KIK/IRPA)

Conservation/restoration advisors

Maryan Ainsworth (MMA), Till-Holger Borchert (GM, VKC), V  ronique B  cken (KMSKB/MRBAB), Lorne Campbell (formerly NG), Leslie Carlyle (UNL), Jill Dunkerton (NG), Susan Farnell (independent conservator/restorer), Michael Gallagher (MMA), Nicole Goetghebeur (formerly KIK/IRPA), Melanie Gifford (NGA), Anne van Grevenstein (KKSb, UVA), R  gine Guislain-Witterman (independent conservator/restorer), Babette Hartweg (SMB-GG), Lizet Klaassen (KMSKA), Maximiliaan Martens (UGent), Cathy Metzger (formerly NGA), Uta Neidhardt (SKD), Elke Oberthaler (KHM), Catheline P  rier-d'Iteren (formerly ULB), Marika Spring (NG), Ron Spronk (QU, RUN), J  rgen Wadum (SMK)

Scientific research & imaging KIK/IRPA

Katrien Van Acker (KIK/IRPA, photography), Alexia Coudray (KIK/IRPA, chemical analyses), Christina Currie (KIK/IRPA, head of imaging team), Jean-Luc Elias (KIK/IRPA, photography), Pascale Fraiture (KIK/IRPA, dendrochronology), Catherine Fondaire (KIK/IRPA, X-radiography), Wim Fremout (KIK/IRPA, chemical analyses), C  cile Glaude (KIK/IRPA, chemical analyses), Herv   Pigeolet (KIK/IRPA, X-radiography), Sophie De Potter (KIK/IRPA, infrared reflectography), Jana Sanyova (KIK/IRPA, coordination chemical analyses), Steven Saverwyns (KIK/IRPA, chemical analyses), Marc Vermeulen (KIK/IRPA, chemical analyses)

Image processing web application

Bruno Cornelis (VUB-ETRO), Ann Dooms (VUB-ETRO, coordination), G  bor Fodor (VUB-ETRO), Frederik Temmermans (UD), Iris Vanhamel (UD)

Scientific research GOA (UGent)

Alessia Coccato (UGent, chemical analyses), Bruno Cornelis (VUB-ETRO, image processing), Ingrid Daubechies (DU, image processing), Ann Dooms (VUB-ETRO, image processing), H  l  ne Dubois (KIK/IRPA, UGent, history of conservation), Attila Fesus (UGent, image processing), Debbie Lauwers (UGent, chemical analyses), Maximiliaan Martens (UGent, promoter), Marc De Mey (KVAB, image processing), Luc Moens (UGent, promoter), Aleksandra Pi  urica (UGent, image processing), Ljiljana Plati  a (UGent, image processing), Anastasia Rousaki (UGent, chemical analyses), Tijana Ru  ic (UGent, image processing), Peter Vandenabeele (UGent, promoter), Rujie Yin (DU, image processing)

Macro-XRF (UA)

Koen Janssens (UA, coordination), Stijn Legrand (UA), Geert Van der Snickt (UA)

Additional scientific research

Julie Arslanoglu (MMA), Patrick Bertrand (UCL), Jaap J. Boon (JE), Patrick Dietemann (DI), Claude Poleunis (UCL), Marika Spring (NG), Piotr Targowski (NCU), Bart Vekemans (UGent)

Subcontractors

ArcelorMittal, Ghent
ASAJAG, Etterbeek
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EXHIBITIONS CAERMERSKLOOSTER

Permanent exhibition

Annick Born (formerly UGent), Anne van Grevenstein (KKSb, UVA), Maximiliaan Martens (UGent), Lode Van Pee (PCC)

Temporary exhibitions committee

Anne van Grevenstein (KKSb, UVA), Lode Van Pee (PCC), Jo Rombouts (POV), Jabez Sinnesael (POV, lay-out)

SUPPORT

Financial support
Flemish Government, Agentschap Onroerend Erfgoed (AOE)
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Support in kind

Churchwardens of St. Bavo's Cathedral, Ghent (KKSb)
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