The Use of Goldpoint and Silverpoint in the Fifteenth Century

An Van Camp

This essay is a survey of the use of metalpoint in the fifteenth century in the Low Countries. Before discussing the different functions of the metalpoint drawings, a brief description of this technique is given. This is not intended as a complete chronological survey but attempts to illustrate the most relevant examples.

What is metalpoint?

Metalpoint is a drawing technique in which the support must be prepared before drawing with a metal stylus can take place.[1] Wood and vellum had been used as supports in the fourteenth century but were gradually replaced by paper during the fifteenth century. The chosen support is prepared with a ground of bone ash (burnt bones from animals and birds made into powder, sometimes supplemented with chalk) and glue made of animal skin.[2] After this mixture is brushed onto the support – applied in thin or thick layers – it is burnished to obtain a smoother surface. Once the prepared sheet has dried, it is possible to draw on it with a metal stylus, either in silver, gold or copper. The rough texture of the ground microscopically abrades the metal and small particles are deposited where the stylus has been dragged over the surface, creating a visible mark or trace which is greyish matt in appearance as opposed to shiny graphite. The stylus can either be a solid metal rod or can be made of a less expensive metal (such as brass) with one or both ends dipped in the more precious metal. Small metal wires or points are sometimes inserted in handles made of cheaper materials such as wood.[3] The ends of the stylus can be sharp or blunt, fine or wide, depending on the precision desired by the artist. Metalpoint lines initially appear lighter to the draughtsman but become darker within a few months or years after being exposed. When lines do appear lighter over time, this can be explained by damaged or soiled ground or by actual physical loss of the metal particles.[4]

Metalpoint lines display a range of colours due to the different metal alloys used for the stylus, but also by environmental conditions which can cause metals to tarnish differently.[5]

[1] 'Metalpoint' is used here unless the exact metal is known. Leadpoint is a softer metal and does not require prepared paper to leave a trace; it must therefore be distinguished from the hard metals discussed here.
[2] Cennini 1960, p. 7; Meder 1978, pp. 58-75.
[3] Meder 1909, pp. 11-13.
[4] Donnithorne, Russell 2014, pp. 267-282. These 'faded' lines become visible under ultraviolet light.
[5] Schenck in Washington/London 2015, pp. 9-23.

The most common metal in the fifteenth-century Netherlands was silver (mixed with varying quantities of copper), which appears as grey, brown, purple, green and even orange-brown.[6] Goldpoint as a drawing tool is much more stable as the lines retain the same grey colour as when applied by the draughtsman. Goldpoint is, however, found much more rarely than silverpoint as a result of the preciousness of the metal. Only two drawings containing goldpoint have so far been identified, both linked to Jan van Eyck: the drawing known as the *Portrait of Cardinal Niccolò Albergati* and the *Crucifixion*, which forms the subject of this book (see figs. xx). As more drawings are scientifically analysed in the future, this may lead to wider recognition of goldpoint use.

Why artists used metalpoint?

The primary advantage of the metalpoint technique is that the stylus provided the artist with an accurate tool which could create very fine lines and therefore permitted meticulous precision. Other drawing techniques available at the time, such as chalk or pen and ink, were easier to use but did not enable such accuracy.[7] Metalpoint is basically a linear technique, where the lines appear in a great variety depending on the sharpness and size of the metal point used as well as the pressure applied during execution. Faint lines – for instance for a preliminary sketch – can be achieved by lightly drawing the stylus over the sheet, while for stronger strokes it is necessary to trace the same line multiple times. Dense parallel lines or cross-hatching are used for shading, while tonal areas can only be achieved when ultra-fine cross-hatchings or strokes are applied in such a way they almost become invisible to the naked eye and blend into each other.

As can be gathered from this description, metalpoint is a demanding and time-consuming technique which requires the utmost attention from the draughtsman. Apart from having to prepare the support first, it is very difficult to get rid of unwanted lines once drawn onto the ground because metalpoint cannot be erased. Small corrections, however, can be made by gently scraping the ground away or by wetting the ground and wiping the metalpoint line. Careless handling of the metal stylus could potentially also damage the ground.

[6] Meder 1909, p. 22; Schenck in Washington/London 2015, pp. 9-23.
[7] Graphite was only mined commercially from the middle of the sixteenth century onwards and had the advantage that it could be sharpened or ground and moulded in a sharp point (black lead). It was also easily erasable.

Early Netherlandish metalpoint drawings were usually executed on a pale preparation, mostly white, ivory, cream or light-green. This contrasts sharply with the greater variety of pigments used in Italian grounds, but the lighter colours undoubtedly enhanced the clarity of the lines while at the same time resembling precious vellum.[8] The ground could be incised or scratched with a sharp point or knife to create highlights. This practice is only found in drawings from the Low Countries and, because of the pale preparation, its effects are usually very subtle and only noticeable in raking light.[9] Another characteristic of Netherlandish drawings is the sparse use of metalpoint in combination with other techniques such as leadpoint, chalk, ink or white heightening.

Because of these characteristics it is clear that in the fifteenth century metalpoint was favoured for specific purposes, which is reflected in the functions of these drawings. It was clearly regarded as being too time-consuming to work out an entire composition or for spontaneously sketching. Metalpoint's precision, however, was well suited for rendering subjects which require great attention to detail, such as portrait studies or elements meticulously copied from larger compositions, including heads, busts and isolated figures.

Metalpoint is a dry technique, reducing the risk of smudging or staining, which made it very appropriate for use in drawing books, which were evidently practical to use in the workshop as well as outdoors. Indeed, many sheets are prepared on both sides suggesting that such use was anticipated. The prepared ground also made the sheets sturdier and helped them to withstand frequent usage. None of these drawing books, however, have survived as a whole and they must have been discarded or dismantled at a later time.[10] In fact, only around six or seven hundred sheets have survived from the fifteenth century, of which roughly one fifth are executed in metalpoint. Drawings were not widely collected at that time as they had a primarily practical function as part of an apprentice's training, or for use in the workshop. Their repeated use in the studio must have led to damage over time, after which they were thrown away.[11] It can be assumed that most artists made drawings in metalpoint. Although only a few survive by a handful of artists, many more must undoubtedly have existed. It is only really when drawings can be connected to other known works that they can be firmly

[8] Meder 1978, p.70.
[9] In Italy and Germany sometimes a blind stylus is used as underdrawing, lightly indenting the surface without actually incising it.
[10] An early drawing book by Hans Cranach, dated 1536, has survived and is kept in the Niedersächsisches Landesmuseum, Hannover, inv. no. Z-4. It is still in its original binding and is fastened with a metal stylus.
[11] Antwerp 2002, pp. 12-18; G. Messling, 'The Art of Drawing before Van Eyck', in: Rotterdam 2012, pp. 66-68.

attributed. As no surviving drawings are signed, they are judged on the basis of their quality: the most accomplished sheets are given to the master while the lesser sheets to his workshop, circle or followers and so on. This is generally true for fifteenth-century drawings made in techniques other than metalpoint.

In fact only a few fifteenth-century drawings are identified nowadays as original studies which can be attributed to named artists. These are all unsurprisingly described as studies for portrait paintings and rank amongst the most stunning sheets of the period.[12] Their practical use is evident as it is quicker to draw a portrait in silverpoint than paint one, so this might have been the preferred option when the sitter did not have enough time. Metalpoint was moreover better suited for rendering facial features in the greatest detail as opposed, for instance, to studies in pen and ink. These original studies are characterized by their high quality and emotional charge, while the clothing was summarily indicated as this could be painted from stock motifs. They were made in preparation for commissioned portraits, most of which are now lost. The majority of portraits were for diptychs, either displaying pendant portraits of couples or devotional diptychs where a portrait was paired with a religious subject such as the Virgin and Child.

A survey of fifteenth-century metalpoint drawings

The drawing known as the *Portrait of Cardinal Niccolò Albergati* by Jan van Eyck is generally regarded a portrait study for the painted portrait in Vienna, including extensive colour notes drawn in goldpoint (fig. xx).[13] Van Eyck managed to render the finest details and create a very precise likeness of his sitter. Tiny touches in the eye and mouth are executed with a goldpoint and one has to ask whether Van Eyck wanted to highlight these small areas with a different colour. This drawing could have been made because the sitter did not have enough time to sit for the actual painting or as a *vidimus*, a presentation drawing to show for approval to the sitter, before attempting the painting.

Another sheet which is usually described as a portrait study is the stunning *Head of a Woman Wearing a Veil*, nowadays accepted as the only autograph drawing by Rogier van der Weyden (fig. 1).[14] Although no corresponding painting exists, the sitter appears to be drawn

[12] It is likewise possible that metalpoint was also used for portrait medals but no examples seem to have survived.
[13] Staatliche Kunstsammlungen, Dresden, inv. no. C 775. See Dresden 2005, no. 12; Ketelsen 2005, pp. 170-75.
[14] The British Museum, London, inv. no. 1874,0808.2266. See Popham 1932, no. 1; Sonkes 1969, no. A3; Antwerp 2002, no. 15; Washington/London 2015, no. 7.

from life. The successful three-dimensional modelling of the woman's face and her headdress give the portrait a compellingly life-like quality. The many layers of fabric can almost be felt and the pearl pin seems almost tactile. When looking at the drawing more critically, the features are probably too idealized to be a true likeness and it is questionable if it really was drawn from life.[15] It could possibly have been made by Van der Weyden based on earlier female portraits and subsequently used as a model for more generic female heads in his paintings, many of which are similar in style. The *Head of a Woman* probably once had a male pendant as she is looking to the left while holding something in her hand, perhaps a flower.[16]

Metalpoint portrait studies were also made for figures who appeared in larger compositions. Netherlandish artists aimed to depict every person in their paintings, whether protagonists, background figures or donors, with individualized features. Gerard David's small-scale portraits, datable to the end of the fifteenth century, were mostly drawn from life, as is demonstrated by their freshness and the realistic likenesses. They probably once formed part of one or more drawing-books as they are executed on sheets of the same type of paper with equal dimensions and were later numbered in the same way.[17] Many of these faces recur in David's paintings, indicating they were preparatory studies which were then reused.

Many other sheets previously described as original studies are now considered to be high-quality copies. It is indeed extremely difficult to judge whether a portrait was drawn from life by the artist or copied from another painting, either his own or that of another artist.[18] For instance, a group of silverpoint portraits showing *Heads of Men Wearing Tall Hats* is attributed to Dieric Bouts on the basis of similarities to his portrait paintings, even though no exact matches can be found.[19] The drawings have often been described as preparatory for these paintings because of the lack of extensive underdrawing in Bouts's painted portraits.[20] The lack of *pentimenti*, i.e. changes which show that the artist is working

[15] Leuven 2009, no. 24.
[16] A male portrait from a later date and generally accepted to be a portrait study for a painting by Petrus Christus is the *Portrait of the Falconer*, now in Städel Museum, Frankfurt, inv. no. 725. See Sonkes 1969, no. E19; Antwerp 2002, no. 12; New York 1994a, no. 24; Washington/London 2015, no. 5. It is not unthinkable that the clothing and the interior in the background were done separately, possibly based on other sketches.
[17] Ainsworth 1998, pp. 7-26; they are nowadays spread over several collections worldwide, see for instance Washington/London 2015, nos. 15-16.
[18] New Haven 1990, pp. 168-191.
[19] Albertina, Vienna, inv. no. 4845. See Benesch 1928, no. 15.
Smith College Museum of Art, Northampton (MA), inv. no. 1939:3. See Sievers 2000, no. 1; Périer-D'Ieteren 2006, pp. 120-121; Michel 2007, pp. 72-74; Washington/London 2015, no. 12.
[20] Périer-D'Ieteren 2006, pp. 114-120.

out the composition on the sheet, suggests instead that they were probably copied after paintings – which are now lost – either while still in Bouts's workshop or, more likely, later.

Apart from the relatively rare life studies described above, the most frequent use of metalpoint – based on those that have survived at least – was for copies made in the workshop, whether by the master himself or by one of his assistants or pupils. The exacting nature of the technique and the high level of detail it offered were very well suited to reproducing other works of art. Although now the word 'copy' generally has negative connotations, this is not so in the context of fifteenth-century drawings. These works are invaluable for the study of artistic development and working methods since almost no original studies have survived. Some of these surviving metalpoint drawings must be considered as part of an artist's technical training as it was so suitable as a learning tool because of the precision required. It must be questioned how many of the surviving copies were made by an apprentice copying a master's work in order to learn. Although some of these sheets are already quite accomplished, works by less experienced pupils were naturally of lesser quality. While many early exercises must have been discarded at the time, surprisingly some have survived. Two less competent copies have survived of the *Head of a Woman Wearing a Veil* described above, which were possibly executed as part of a pupil's training.[21]

Copying also includes *ricordi* made by the master of his own works, as a way of recording finished compositions with a view to future replication. But copy drawings were equally made from works by other artists, either out of admiration or with the intention of reusing or adapting motifs in the copyist's production.[22] This practice stems from the Middle Ages, during which model books were kept in the workshop as references either for reuse or to show the workshop's range of motifs to prospective patrons.[23] The earliest use of metalpoint can in fact be found in volumes of boxwood panels containing collections of images such as studies of heads and figures, but also larger religious scenes, sometimes arbitrarily arranged on one panel. The sustained and continuous reference to these images over a long period of time meant that they had to be made in durable materials. These

[21] The British Museum, London, inv. no. 1895,0915.1000. See Popham 1932, no. 7; Sonkes 1969, no. C46; Leiden University Libraries, Special Collections, inv. no. PK 2311 (verso). See Sonkes 1969, no. C45.
[22] Buck 2001, pp. 25-26.
[23] Scheller 1995, nos. 19-21.

wooden model books are mostly associated with Flemish manuscript illuminators working for the Burgundian court and are datable to the first decades of the fifteenth century.[24]

It should be noted that no metalpoint drawings have actually been found in illuminated manuscripts as the vellum sheets were not prepared, but the drawings described above must have served as models for them. The earliest metalpoint drawings on paper date from the same period. They are done on a light-green ground, which can be related to earlier examples on wood.[25] These sheets cannot be attributed to a known artist but some of the motifs can be linked to the Limbourg Brothers, Netherlandish illuminators who worked in France. A manuscript now in Wiesbaden contains a collection of silverpoint drawings on paper executed by different artists.[26] The drawings seem to date from between 1380 and 1410 and, although they were not specifically made for the religious texts in the manuscript, they were cut at a later stage and used to illustrate the manuscript.

The majority of fifteenth century metalpoint drawings are copies of heads and busts datable from the 1430s onwards. As portraits are individual to the sitter, they do not always need to be replicated, and more idealized portrayals or those of famous sitters could be reused.[27] It is not always possible to identify the sitters depicted but their dress and pose can often reveal the period in which the original was made. Details such as hands or clothing are often omitted in an abrupt manner reflecting the edge of the original panel or frame.

A very competent drawing for instance is *Portrait of an Unknown Man Wearing a Chaperon* (fig. 2).[28] The man's face with his aquiline nose is so realistically rendered that, at first sight, it seems to be a portrait drawn from life. On closer examination, however, the bust is set against a blank background and there is no indication of a light source, betraying that this is probably a copy after another work. Minutely depicted details, such as the collar laces and the textural rendering of the fabrics, would equally not be necessary in a preparatory study but may well have been copied from a painting. All these elements and the fact that the

[24] The Morgan Library & Museum, New York, inv. nos. M. 346 and 346A. See Scheller 1995, no. 19. Staatsbibliothek Berlin, inv. no. A 74. See Jenni 1987; Scheller 1995, no. 21.
[25] *Death of the Virgin,* National Gallery of Art, Washington, inv. no. 1950.20.2. See Nijmegen 2005, no. 86; Washington/London 2015, no. 2.
Arrest of Christ, The British Museum, London, inv. no. 1883,0714.77. See Popham 1932, p.59, no.1; Antwerp 2002, no. 1; Washington/London 2015, no. 3.
Adoration of the Magi, Rijksmuseum, Amsterdam, inv. no. RP-T-1900-576. See Boon 1978, no. 1; Rotterdam 2012, no. 74; Washington/London 2015, no. 4.
[26] Hessisches Hauptstaatsarchiv, Wiesbaden, inv. no. ms. B 10. See Renger 1987, pp. 390-410.
[27] Gerard David copied *Four Heads* from the *Ghent Altarpiece*, two of which have been identified as portraits of popes. This sheet is now in the National Gallery of Canada, Ottawa, inv. no. 6986; see Ottawa 2003, no. 1.
[28] Kupferstichkabinett, Berlin, inv. no. KdZ 2375. See Buck 2001, no. I.4.

clothing resembles that worn in the *Ghent Altarpiece*, lead to the conclusion that this man is copied from a now lost portrait painting by Jan van Eyck or his workshop.

Besides portraits, religious subjects were also copied in the workshop, either in their entirety or as selected single motifs, which were of interest to the artist for future reference. It is noteworthy that the majority of these fifteenth-century workshop copies are after Rogier van der Weyden, either executed in his workshop or after his death. As regards whole compositions, an impressively large sheet shows a highly worked out *Crucifixion* scene set in a wide landscape (fig. 3).[29] Although the sheet is drawn competently, the lack of *pentimenti* reveals that the artist was copying an existing example. Another characteristic of copies is the painterly, almost textural rendering of the clothing, which is particularly evident here in St. Mary Magdalene's dress. For all these reasons it is very likely that this drawing is after a now lost painting by Rogier van der Weyden or his workshop, of which some versions with minor differences have survived.

The most common type of workshop drawings, however, recorded single figures. A sheet depicting *St. Mary Magdalene* was for a long time described as a preparatory study for the left panel of Van der Weyden's *Braque Triptych*, but differences with the painting's underdrawing (especially in the veil which originally extended towards the back) reveal that the drawing was done after the painting (fig. 4).[30] Copyists often also made mistakes for the simple reason that they did not entirely understand the original image they were copying.[31] In this case the drapery on the inside of the saint's cloak was misinterpreted by the anonymous draughtsman. In another silverpoint copy of the same figure the drapery was worked out more competently.[32] Interestingly a drawing showing *St. John the Baptist*, was also copied from the right hand panel of the same *Braque Triptych*, but by another hand (fig. xxKoreny).[33] These three sheets after the same picture indicate that certain paintings were clearly more copied and thus of greater interest to other artists, even if they were not publicly accessible, such as the Braque Triptych which was a private commission, although accidental survival cannot be discounted. It is unclear whether these drawings were made in Van der

[29] Musée du Louvre, Paris, inv. no. 20645. See Lugt 1968, no.15; Sonkes 1969, no. D19; Washington/London 2015, no. 10.
[30] The British Museum, London, inv. no. Oo,9.2. See Popham 1932, no. 2; Sonkes 1969, no. B23; De Vos 1999, no. B9; Antwerp 2002, no. 19; Washington/London 2015, no. 9. The Braque Triptych is in the Musée du Louvre, Paris, inv. no. RF2063; De Vos 1999, no. 19.
[31] Buck 2001, pp. 28-29.
[32] The British Museum, London, inv. no. 1910,0212.204. See Popham 1932, no. 8; Sonkes 1969, no. B24.
[33] Staatliche Graphische Sammlung, Munich, inv. no. 1936-3. See Sonkes 1969, no. B22.

Weyden's workshop as a *ricordo* of the finished work, as part of his pupils' training or even after the panel had left the workshop, despite the triptych being intended for private use.

The motif of an emotionally charged *Dead Christ* can be linked to Hugo van der Goes due to the many *Lamentations* attributed to him in which it appears (fig. 5).[34] Although previously interpreted as a nude study, it is most likely a workshop copy which was kept in Van der Goes's studio as a pattern. The body of Christ is tilted and the toes of the right foot are trimmed, both features which can clearly be recognized in one of the surviving paintings.[35] The figure has also been trimmed all round which might indicate the edges of the sheet were damaged by excessive handling.

The majority of copies, however, are after paintings which have not survived and this sometimes makes it difficult to assess their quality or attribution. The metalpoint copies thus gain supplementary documentary value, regardless of their quality. They are not necessarily a testimony to the workshop's style, but rather that of the copied original. Some of these have been recognized as typical Van der Weyden motifs as they resemble elements from his paintings and they might have been done by his workshop assistants. One extraordinary motif which has survived in two metalpoint copies is *A Rich Man Being Tormented in Hell by Demons* (fig. 6a-b).[36] This theme is part of a larger scene showing Lazarus in Heaven, seated on Abraham's lap, while the rich man (Dives) begs them to come and help him. The two drawings clearly copy the same original and at first sight look very similar. However, they are executed in a very different way, identifying them as being done by different hands. The London sheet makes extensive and clever use of scratching, which is entirely lacking in the other version. Although no painting has survived, the emaciated bodies of the demons resemble Rogier van der Weyden's *Fall of the Damned* and the motif might have originated in his workshop.

Two further drawings can be stylistically linked to a follower of Rogier van der Weyden. The *Christ Child* and *Virgin* both display the same use of parallel hatching and scratching in the hair in order to create highlights (figs. 7a-b).[37] They are also done on similar

[34] Musée du Louvre, Paris, inv. no. RF5638. See Lugt 1968, no. 41; Lens 2013, no. 55.
[35] Boon 1950-1951, p. 89.
[36] Musée du Louvre, Paris, inv. no. 18784. See Lugt 1968, no. 31; Sonkes 1969, no. C16.
The British Museum, London, inv. no. 1884,0726.29. See Popham 1932, no. 5; Sonkes 1969, no. C15; Antwerp 2002, no. 17; Washington/London 2015, no. 11.
[37] *Christ Child*, The British Museum, London, inv. no. 1884,0726.28. See Popham 1932, no. 4; Sonkes 1969, no. C14; Antwerp 2002, no. 11.
Virgin, The British Museum, London, inv. no. 1884,0726.27. See Popham 1932, no. 3; Sonkes 1969, no. C13; Washington/London 2015, no. 8.

paper and it is probably that they, as cut-out fragments, once belonged to the same drawing book or possibly even the same leaf (folio), even though the two subjects do not match up together and are incompatible in size. The entire background of the *Christ Child* is unusually worked up with dense hatching, which would have served no purpose at all in the workshop and suggests that it may have had a different function. The sheet has two pinholes in its top corners and it has been convincingly argued that this small sheet was displayed as a devotional image.[38]

A small number of workshop drawings break the mould by creating a new composition by copying some elements while rearranging and adapting them in a new and original way. This seems to have been the case for the Rotterdam *Crucifixion* which shows some similarities with Van Eyck's panel in New York although it is not an exact copy. It might not be a copy after this particular painting, but rather after another painted version (figs. XxMessling).[39] It is likely that this drawing originated in Van Eyck's workshop as a variant of a typical workshop theme. This drawing contains goldpoint and, as opposed to its very limited use in the drawing known as the *Portrait of Niccolo Albergati*, it is used for hatching throughout the composition.

Other drawings are not directly linked to paintings but to sculpture, glass and textile designs. The linearity of metalpoint, however, was not very suitable for working out designs and many of these sheets can now be identified as copies rather than preparatory studies.
A group of standing figures of dukes may be copies after the *pleurants* sculptures for the epitaph tomb of Louis of Male in Lille, originally part of a set of twenty-four.[40] Initially described as the original studies for the statues, these are probably copies after the finished statues, drawn by followers of Rogier van der Weyden.

Similarly six small fragments, representing the *Holy Sacraments*, have clearly been cut from a single large sheet as their combined versos form one large *Eucharist*.[41] The same scenes appear on a gold-embroidered cope and it has been suggested they were the designs

[38] Leuven 2009, no. 34.
[39] Museum Boijmans Van Beuningen, Rotterdam, inv. no. MB 2014/T 1. See Rotterdam 2012, no. 86; Wallert 2013, pp. 62-78; Paris 2014, no. 5.
[40] Museum Boijmans Van Beuningen, Rotterdam, inv. no. MB 1958/T 20 and T 21. See Sonkes 1968, inv. nos. E15-18; Luijten, Meij 1990, no. 11; Antwerp 2002, nos. 21-22; Louvain 2009, no. 18; Bleyerveld, Elen, Niessen 2012, no. 3.
[41] Musée du Louvre, Paris, inv. nos. 159-160 DR. Oxford, Ashmolean, inv. nos. WA1863.221-224. See Sonkes 1969, nos. C34-40; Brussels 2013, no. 25.

for the embroidery.[42] They are most probably reproducing the same, now lost, work which served as the model for the embroidery design.

In another case, a drawing of *Abraham Repudiating Hagar and Ishmael* by a follower of Hugo van der Goes has previously been described as a preparatory study for a glass roundel (fig. 8).[43] The initial drawing in metalpoint has been extensively reworked with pen and brown ink. Only the main figures are depicted with no indication of surrounding figures or landscape, indicating it is more likely to be a copy.[44]

Even though the works referred to above are probably copies and were not used during the production of other works of art, some metalpoint drawings show traces of having once been part of the artist's creative process, in the form of indented sheets used for transfer. Even though the ground could get damaged by cracks or chipping as a result, indentations could be carefully made with sharp stylus or knife in order to transfer the composition onto other supports such as copper, paper or panel for making prints, other drawings or paintings. The Rotterdam *Crucifixion* described above is indented and has a fully pigmented verso, indicating that it was used for transfer, possibly on to another sheet of paper (fig. xxKoreny). Likewise, the outlines of a portrait drawing, *Bust of a Man Holding a Ring*, are indented with a blind stylus.[45] It resembles a painting attributed to a follower of Jan van Eyck, even though it is slightly smaller and does not copy the painting or its underdrawing exactly.[46] The drawing is possibly a copy after a now lost Van Eyck painting, which was then used to create a similar version by a follower. A drawing of the *Virgin and Child* attributed to a follower of Rogier van der Weyden is indented and heavily damaged. Although formerly described as a study for a contemporary engraving, it can be assumed the indentations were done at a later stage, possibly even in the sixteenth century when an engraving was made after this drawing.[47]

[42] See Bern 2008, no. 23.
[43] Museum of Fine Arts, Boston, inv. no. 15.1244. See New York 1995, no. 1.
[44] A drawing from the beginning of the sixteenth century, *Augustus and the Tiburtine Sibyl*, is either a copy or a study for a stained glass window: The British Museum, London, inv. no. 1860,0616.134; see Popham 1932, no. 79; Washington/London 2015, no. 17.
[45] Kupferstichkabinett, Berlin, inv. no. KdZ 4052. See Buck 2001, no. I.5.
[46] National Gallery, London, inv. no. NG2602. See Campbell 1998, pp. 228-231.
[47] Dumbarton Oaks, Washington, inv. no. HC.D.1936.45 (as Netherlandish, c.1460-80). See Boon 1950-1951, pp. 84-85; Washington/London 2015, no. 13.

Finally, metalpoint was also used for underdrawings for paintings.[48] Perhaps the most obvious example available to us is the unfinished *St. Barbara* by Jan van Eyck, dated 1437 (fig. xx).[49] The prepared ground has not been painted and thus the underdrawing is still clearly visible with the naked eye. Silverpoint and a very fine brush were used in the underdrawing. The amount of silverpoint, however, is extremely limited (mainly used for the hands, book and clothing of the saint as well as some outlines of the building) and it must be asked what advantage the artist gained from this, as opposed to using the brush throughout. It is not clear if metalpoint was commonly used for underdrawing as this is difficult to determine with current scientific analysis.

As for drawings, one sheet attributed to Hugo van der Goes, *The Meeting of Jacob and Rachel*, is described as having a preliminary sketch in silverpoint underneath the final composition in grey brush, brown wash and white heightening (fig. 9).[50] This drawing is possibly intended as a design for stained glass.

In this essay it has become clear that metalpoint was mainly used in the fifteenth century for workshop copies and a few original studies, even though Gerard David came to use the technique more freely towards the end of the century. From the sixteenth century onwards the use of metalpoint started to decline with only a few sheets surviving by, for instance, Lucas van Leyden. However, it underwent a revival from the 1580s onwards, when Hendrick Goltzius and Jacques de Gheyn the Younger not only used it to make detailed portrait studies for small engravings but also to capture more personal moments. Half a century later Rembrandt continued to use metalpoint on his travels and even to portray his fiancée.[51]

The usage of goldpoint in the fifteenth century is – as shown in the two known sheets described above – very limited and their use was furthermore very different. Goldpoint does, however, appear in one later sheet attributed to Jacques de Gheyn the Younger in which it is clearly used for aesthetic purposes to exploit the contrast between the two colours.[52]

[48] The underdrawing in a painting by Petrus Christus, *St. Eligius as a Goldsmith*, has been tentatively described as partly in metalpoint, especially in certain areas of the heads; see Ainsworth 1994, no. 6 and p. 100. For underdrawings in general see also Ainsworth 1998, pp. 44-52 and Buck 2001, pp. 31-34.
[49] Koninklijk Museum voor Schone Kunsten, Antwerp, inv. no. 410. See Rotterdam 2012, no. 85.
[50] Christ Church, Oxford, inv. no. 1335. See Byam Shaw 1976, no. 1309; Sander 1989, pp. 39-52; Schade 1991, pp. 187-193; Dhanens 1998, pp. 238-249.
[51] Van Camp, in Washington/London 2015, pp. 145-187.
[52] Van Camp, in Washington/London 2015, p. 153, fig. 6.

Goldpoint also experienced a revival in the nineteenth century when artists, especially French and British, used it more regularly.[53]

[53] The five centuries of metalpoint drawing history is the subject of an exhibition at the National Gallery of Art in Washington and The British Museum in London in 2015, see Washington/London 2015.