THE SAMUEL COLLECTION: MATERIALS AND TECHNIQUES

Read by Nancy Wade & Judith Wetherall at Mansion House
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Thank you for your invitation to speak to you today at the Mansion House.

I wonder after such a delicious lunch whether you have room for one final course? The white tablecloth is laid, the pewter beaker perched on the edge of the table is gleaming. Contrasting young and extra mature gouda cheeses are laid out for you to have with biscuits and fresh butter, washed down with a little ale. Although the ingredients are humble this rich visual feast was laid out for you by Floris van Schooten the Haarlem based artist over 350 years ago. When this scene was completed Charles I was struggling to hold onto the English throne! ...and yet van Schooten's painting still hangs before us today as part of the Harold Samuel collection.

This magnificent collection of Dutch 17th century masterpieces was formerly housed in Lord Samuel's estate at Wych Cross Place, Sussex. Lord Samuel worked with the art dealer Edward Speelman to assemble this unparalleled collection from 1951 until his death in 1987 when all 84 paintings were bequeathed to the City of London Corporation and have since been displayed at the Mansion House.

As the fortunes of the Protestant Dutch Republic grew throughout the 17th century so too did the capacity for wealthy middle and upper class burghers to purchase works of art for enjoyment in their own homes. The art market centred around secular rather than religious themes, reflecting the lives, preoccupations and interests of an ever more confident society. At the heart of Dutch aesthetic lay the appearance of realism and artists strove to perfect the three dimensional illusionistic spaces they created in their paintings. However all the artistic ability in the world is rendered worthless by poor technique, the truest portrait can be ruined by a split in its panel, and the sunniest day turned to rain by a darkened smalt blue sky. Every 17th century Dutch artist knew the key to lasting realism was sound technique and it is thanks to the mastery of the artist's craft during this period that so many beautiful works have survived the intervening years for us to enjoy.

In the first decades of the 17th century each major town established its own Guild of Saint Luke, patron saint of artists. Given the present illustrious company I merely have to mention the Guilds' role in upholding good practice, the control of the production and sale of work of art and sculpture. The Guilds

also acted as courts of arbitration and regulators of artist's apprenticeships. During this period all practicing artists had to operate within the guild system and we have gained much of our knowledge about artist's circumstances and working relationships from guild records.

In this period artists generally worked in studios in their homes. An artist's studio would be arranged so as to maximise a north light. He would work standing or seated at an easel and possibly use a mahl stick to steady his hand. His palette and brushes were much the same as today. In their studios artists would paint artefacts and figures from life or figures from wooden artist's mannequins called "lay figures". They would also paint portraits and landscapes from drawings of sitters and sketches made outside the studio *"naer het leven"* (from life). Here in the Saloon if we look at the genre scenes by Jacob Ochtervelt, *The Oyster Meal* (c.1664-65) and *A Lady and Maid Choosing Fish* (c.1671-73) despite the appearance of a directly observed scene, the figures were probably painted from models in the studio. Certainly the red fur trimmed jacket could be a studio prop, and is it the Ochtervelt family dog that obligingly makes an appearance in both scenes?

The artist's studio could be quite an industrious environment. For extra income an artist would take on apprentices, who over the course of four years would learn to draw and paint from plaster casts and existing drawings and paintings. They would also learn how to prepare paints and painting materials and, alongside employed assistants, they would prepare the artist's paints for him. Two paintings in the North Drawing room provide a fascinating insight into this practice. Wallerant Vaillant's *A Young Boy Copying a Painting* (c.1650s) came into the collection in 1966, it depicts the popular genre scene of an apprentice working in the artist's studio. With his back to the viewer the young boy is drawing on to paper, the painting he is copying is hanging before him. A lay figure draped in cloth and a stretched canvas stand in the background, against the wall. The painting set before the boy would have belonged to his master, we now know it to be Palamedes Palamedesz's *Cavalry Battle on a Bridge* (c.1630). The very same painting was cleverly identified and purchased for the collection in 1968. It is an extremely rare circumstance to have reunited the two paintings.

Turning to an artist's materials. An artist applies paint to a substrate termed a "support". The most common supports in this period are wood and canvas. However, increasingly throughout the 17th century artists were moving away from using wooden panel supports towards using canvas supports.

Surrounding us in the Saloon now we have excellent examples of both wooden panel and canvas supports.

The paintings on panel supports are;

- Floris van Schooten (active in Haarlem 1612–1655), *Still Life with Beaker, Cheese, Butter and Biscuits*, (1630–40s?)
- Pieter Claesz (1597/98–1661), *Breakfast Still Life with Roemer, Meat Pie, Lemon and Bread* (1640) and *Still Life with Jug, Herring and Smoking Requisites* (1644)
- Nicolaes Maes (1634–1693), *A Young Woman Sewing* (1655) and *A Woman selling Milk* (1650s?)

The paintings on canvas supports are;

- Jacob Ochtervelt (1634–1682), *The Oyster Meal* (c.1664–65) and *A Lady and Maid Choosing Fish* (c.1671–73)
- Gerard ter Borch (1617–1681), *Portrait of a Man in his Study* (c.1668–69)
- Pieter de Hooch (1629–1684), *Interior with a Woman Knitting, a Maidservant and a Child*
- Jan Steen (1625/6–1679), *Musical Company* (known as 'The Young Suitor')

Wooden panels were normally made of Oak from the Baltic region. Amsterdam was a centre for the trade in Baltic timber but after the 1650s Baltic oak became increasingly difficult to source due to the disruption of trade routes by wars and unrest. Other tropical woods were used and oak could be sourced from central Europe, but both alternatives were at a greater expense. Panels were made by specialist panel makers, usually woodworkers belonging to a Joiners' or Cabinetmakers' Guild. The Guilds controlled panel production and ensured that they were made to the highest standards only branding what they had approved. Panels were produced in a range of standard sizes relating to the image subject type (portrait or landscape) and correlating with standard frame sizes. Artists purchased panels directly from panel makers, sometimes keeping a small stock in the studio. Panels were usually of a simple, butt jointed construction, glued and possibly dowelled with bevelled edges to fit into frames. There is evidence that great care was taken so that panel joins did not fall where the sitter's face would be, thus avoiding the risk of disruption to the most important part of the composition.

Canvas supports were usually linen canvas of varying weights made in the Netherlands or imported from Antwerp. The size of a canvas for painting was limited by standard loom width called an "ell", which measured about 69cm. For larger works canvases could be joined by sewing pieces together. In order to be painted on, canvas has to be tensioned and supported by stretching over a wooden frame. The wooden "stretcher" with expansion keys in each corner

as we know it today was not used in the 17th century. Rather artists used fixed frames of wood called "strainers". Artists could buy bolts of canvas to stretch onto wooden frames and prepare themselves in the studio. However, there were artist's suppliers who sold ready stretched and prepared canvases in a range of standard sizes.

I have not yet discussed one painting in the Saloon by the follower of Jan van Kessel (1626-1679) *Still Life with Fruit and Flowers on a Table*, that is because it is on a copper support. Copper was a less common support, more problematic to paint on and was limited to a small format, the *Still Life with Fruit and Flowers on a Table* is quite a large example. But, if used correctly, copper offered a beautiful smooth surface for an enamel-like paint finish. Painting on copper originated in Italy but as Antwerp was a centre for the copper trade and subsequently the printing trade, Antwerp artists in particular embraced the technique. One very interesting example in this collection is hanging in the Long Parlour, Jan Steen *The Sleeping Couple* 1658-60, here the copper support is a reused printing plate and on the reverse can be clearly seen a later copy of a print of the Virgin and Child which originally dated from 1579.

An artist would make his choice of support depending on cost and on the size of his picture. Wood is an excellent choice of support, smooth, solid, very durable if kept in the correct conditions, but it was increasingly expensive and not suitable for larger works as it was too heavy. You will have admired Frans Hals's *Merry Lute Player* (1624-8) on the staircase as you came here today. Panel paintings don't come much larger than the *Merry Lute Player*, and wood was an exceptional choice for Hals who usually used canvas for his life-size genre scenes particularly at this later stage in his career. Canvas was the cheaper alternative and more easily transported than panel, so it is easy to see how it came to be the more popular choice of support despite its vulnerabilities.

The painting support would have to be prepared before being painted on with what are termed "ground" or "priming" layers. In the 17th century ground layers applied to the whole surface of the support serve to fill up the support's texture, the wood grain in panels and the troughs in canvas texture, to provide the artist with a smooth layer upon which to paint. Sometimes you can see with the naked eye how the support has been prepared, for example in the still life paintings by Pieter Claesz you can see the horizontal grain of the wood has alone been filled and the warm tone of the wood itself, uncovered by ground, is showing through the increasingly transparent upper paint layers.

Ground preparations on panel and canvas were sometimes applied by the panel maker or artist's supplier, but it was equally the case that the artist, or more likely his assistant, prepared the support in the studio. Canvases could be stretched and prepared individually or to save time and effort large pieces of canvas could be grounded and cut into smaller sizes when dry. Ground layers

were either mixtures of lead white and oil or mixtures of chalk and glue on top of which an oil priming layer would be applied overall to seal the surface and reduce the absorbency of the chalk. Ground layers on panels were usually a single layer applied very thinly, whereas ground layers on canvas tended to be built up of several, thicker layers.

The colour of the ground in 17th century painting was carefully considered and used to great advantage. Domestic decorators will know from experience just how many coats of Dulux barley white it takes to paint over the terracotta red in the sitting room! Well, in just the same way a ground colour has an influence on the tonality of the final painting. In 17th century Dutch painting the ground was commonly coloured with the addition of red, brown and black pigments to make a grey-brown or reddish-brown mid-tone upon which to paint, adding to the "warm glow" that is so characteristic of this period.

The artist would begin with outlining the composition on the surface with a fine line, possibly black chalk or thin paint, either working from existing sketches or drawing straight onto the support. He would then apply what is termed "dead colouring", blocking out broad areas of form and shadow in neutral tones of brown or grey-brown, possibly leaving the colour of the ground for the mid-tones. After drying he would begin applying flat colour to his forms, again quite broadly. He would select this underpaint colour with the knowledge that it would influence the upper paint layers. He would then continue to work up the area of colour overlaying shadows and lights. The final touch might be thin layers or transparent "glazes" of colour or thick, "impasted" highlights.

Artists' paints were not commercially prepared or sold at this time (the collapsible paint tube was a nineteenth century invention) so an artist had to know how to prepare and mix his own paints and a fresh supply had to be prepared on a regular basis. We know from contemporary recipe books that artists devoted much study and effort in the pursuit of correct preparations of paint that would give beautiful, lasting colour.

Then, as now, a paint consists of a vehicle or "medium" and a colouring material or "pigment". The medium combines the pigment particles and then dries and polymerises into a film holding the pigment in suspension. The medium most commonly used was linseed oil, which was sometimes heated or left in the sun to thicken before adding pigment. Sometimes artists modified their medium with additives to alter the handling of the paint or to speed drying of the film. Although linseed oil quickly formed the best paint films artists had observed darkening and yellowing of their paints upon ageing and so alternative oils were used such as walnut oil or poppy oil when mixing white or pale colours.

Pigments are either "inorganic", sourced from naturally occurring minerals or manufactured by chemical process, or "organic", obtained from vegetable or

animal sources. In the 17th century Dutch artists had a good range of colours to choose from as Holland was something of a centre for the production of high quality pigments and established trade routes meant that many other pigments could be imported. It would be impossible to cover all of the pigments in the artist's palette and so I will only mention some interesting examples of pigments used in this period.

Of the inorganic pigments the Earth and Ochre pigments, coloured clays extracted from the ground, formed the backbone of the palette offering numerous subdued tones of reds, browns, yellows and greys which were inexpensive and permanent.

A number of pigments were chemically manufactured from lead. Surely one of the most obnoxious processes must have been the production of lead white which was crucial as brilliant white pigment. Lead white was formed by exposing lead strips to vinegar vapours in the presence of decomposing manure which provided carbon dioxide. The resulting white lead carbonate corrosion crust was used as lead white, when heated it formed red lead or minium, and when heated in the presence of tin dioxide produced the beautiful lead-tin yellow. Lead-tin yellow, called "massicot" in the 17th century, was the most useful bright yellow. Its colour and permanence was critical as alternative yellows were either toxic or were highly fugitive, plant dyes. Lead-tin yellow is an important pigment for technical art historians as well. It can help date paintings as lead tin yellow disappeared from artist's palettes at the beginning of the 18th century and was only rediscovered as a process in the mid-20th century. For an example of lead-tin yellow I would like to point out the beautiful yellow of the butter and the glittering highlights in Floris van Scooten's *Still Life with Beaker, Cheese, Butter and Biscuits*.*

Holland was famous in the 17th century for the manufacture of the brilliant pigment vermilion red. The pigment occurs naturally as cinnabar but the synthetic form vermilion is produced by heating mercury and sulphur. It was quite expensive and so was often adulterated with red lead. Other reds were obtained from organic sources, such as red lake, made from the shells of the lac beetle crushed to form beautiful transparent red used in thin glazes over other opaque red lead or earth base layers. Two contrasting red pigments have been used by Gerard ter Borch in *Portrait Of A Man In His Study* (c.1668-69). The bright orange/red of the sitter's breeches is probably vermilion, whereas the more purple/red tablecloth is probably underpainted with an opaque red and finished with red lake glaze.*

In this period blue pigments were predominantly from inorganic sources. The most commonly used blue was the copper carbonate pigment, Azurite. It was imported from Hungary or Germany and gives a greenish blue. The most highly prized blue pigment was natural ultramarine. Known for its beautiful,

permanent colour, it is the ground semi-precious stone Lapis Lazuli imported from Afghanistan. A relatively new blue pigment to 17th century artists was smalt. Smalt was made from ground glass that had been coloured with cobalt, it gave a beautiful blue initially but sadly it was not known by artists that it fades and discolours to brown. For most artists natural ultramarine offered the most desirable blue but it was expensive, so they used it sparingly and developed ways of making the pigment go further by underpainting in azurite or smalt and finishing with thin upper glazes of ultramarine.

Obtaining a satisfactory green was problematic for Dutch artists, many greens were either too weak in colour or were not permanent. Manufactured copper based verdigris (copper acetate) and green verditer (copper carbonate) although initially giving beautiful vivid greens were known to soon discolour to brown. The only alternative greens were made from vegetable dye stuffs which very quickly faded. Faced with such little choice artists developed paint application strategies, either mixing greens from yellow and blue or by applying successive layers of blue, yellow or green. It is thought one technique was to underpaint the leaves with strongly contrasting blue and white, over which they glazed thinly with transparent copper green pigments. In this way they hoped that the blue underpainting would influence the tonality of the upper paint layers and combat any discolouration of the green to brown. You may be familiar with Dutch flower paintings where the foliage appears unfeasibly blue. In these instances it is possible that the discoloured copper green glazes have been mistakenly removed.

I hope you have seen today that technical art history, the study of the physical evidence of artist's materials and the manner in which they are employed, can tell us so much about the art industry and trade in a given period. Critically the study of an individual artist's characteristic working methods can lead to a greater understanding of the artist's oeuvre, helping to attribute and date works and eliminate studio works, later copies and fakes. In addition, painting conservators must base the conservation and restoration treatment of a painting upon knowledge of the methods and materials that were either employed by the artist or that were commonly used in the period.

* No technical examination or pigment analysis has been carried out on the paintings in the Harold Samuel Collection to date. The identification of pigments given here as examples are based on the author's own visual observations.

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Judith Wetherall, Frames Conservator, Guildhall Art Gallery

A frame's primary function is to allow a painting to be handled and hung! The frame also influences the aesthetic effect of a painting – it should optimise the effect the painter sought to achieve.

1653 Huygens wrote: *"Thus an ebony frame can enrich a poor painting and make it look or sell as well as a good one!"*

Early paintings (e.g. the Wilton Diptych of 1399) were made on wooden panels, which often had carved edges to protect and de-lineate the image inside, so the frame was effectively made before the painting. By the mid-16th century frames were made independently of the painting: the development of the rebate had set the painting free. This independence broke the intimate relationship between painting and frame. It is indeed rare for 17th century frames to be able to be identified as original to a painting, even when the periods of frame and painting match. Some later frames can be confidently associated with particular artists, but in the 17th century this was not the case. Also, unlike the painter, frame makers were predominantly anonymous.

The style of a frame can give its historic context, so it may be clear that a painting can be out of step with its frame. By the 17th century re-framing was 'de rigeur', reflecting personal taste and the vagaries of fashion. As ownership of paintings changed, so did the frames. Portraits are more likely to have remained in their original frames than landscapes or still lifes, as portraits would have stayed in the same families' ownership for longer, and were therefore re-framed less often. Research at Amsterdam's RijksMuseum enabled Rembrandt's 1639 portrait of Maria Trap to be re-framed in an accurate and appropriate frame style. The painting looked awful in its previous Louis XIV style frame, and the correct effect of the sitter confronting the viewer is evident in the chosen ebony re-frame.

Ebony came onto the market following the East India Company's conquests at the beginning of the 17th century. In 1625 David Stafmaker claimed he was the first to use it in Amsterdam, and that others had learnt their trade from him. Carved frames became prominent in the second half of the 17th century. The carving accentuated chosen elements: decorated top, bottom, side members, and corner elements became the 'corners-and-centres' frame type, seen commonly here. Such carved frames were usually entirely gilded. The materials and craft of gilding have changed little since antiquity. Period treatises and images reveal easily identifiable tools and processes, although there are some quirky instructions: 15th century painter Cennino Cennini advises on the importance of a steady hand whilst gilding:

"There is another cause which, if you indulge it, can make your hand so unsteady that it will waver more, and flutter far more than leaves do in the wind, and this is indulging in the company of women."

The Samuel Collection frames are predominantly water-gilded oak, corner-and-centre styles of the Louis Fourteenth and Fifteenth type.

An initial sizing layer of parchment or rabbit-skin glue was followed by numerous layers of gesso – chalk whiting bound with parchment or rabbit-skin glue. The gesso thickness obliterated the wood grain, and gave sufficient depth to allow fine detail to be cut 'into the white'. Materials then, and now, were environmentally sensitive. In 1688 Messrs Stalker and Parker advised against working in extreme conditions:

"For your whiting will be apt to peel off: the gold and silver size will freeze in laying on, not to say anything of other misfortunes that attend the unseasonable operation."

100 years later Chippendale also complained of that problem, with the picture frame gilding work holding up completion at Nostell Priory.

Cutting and texturing the applied gesso caused the gilding to reflect and refract light in such a way that the frame's form was heightened and the effect made richer. Gesso was cut and textured using 'gesso hooks', drawn towards the carver in dampened gesso. The resulting textures all had specific names and frame locations, including '**fluting**' (normally found on inner, sight edges adjacent to the painting); '**veining**' (found on foliate ornament); '**cross-hatching**' (found in recessed areas, usually wider in the corner and centre design elements); '**hassling**' or '**razzling**' (used on narrow flats) and the **textural use of sand**, usually applied on the central frame flat as a deliberate matting contrast between highly burnished areas either side.

The contrast between matt and burnished gilding was crucial to the depth and richness of a gilded surface. The intention of the artist would not have been the worn gilded effect we see today. Gilding would have looked solid, with no age-wear, but with contrasting matt, burnish and texture to give it depth and sparkle.

Following the gesso processes, coloured clays were applied, bound in rabbit-skin or parchment size. These 'bole' layers had physical and aesthetic functions, mainly to enable the gold to be burnished. Bole's different earth colours were usually linked to specific historic or geographic use. Rich, dark reds, oranges and underlying yellow ochre boles can all be seen on the Samuel Collection frames.

Gold leaf was produced in small family workshops. Cast ingots were mangle-

rolled into ribbon of a known length and therefore thickness. This was then snipped into squares, and hand-beaten for several hours, eventually producing loose-leaf gold 3¼" square and thin enough to see through. The polished bole surface was then wetted with weak-size water comprised of weak animal size and water or gin, and loose-leaf gold floated down onto the surface. Stalker and Parker say:

> *"If your work be sufficiently moist, you'll perceive how lovingly the gold will embrace it, hugging and clinging to it like those inseparable friends iron and loadstone."*

Selective burnishing of the gold was achieved using haematite or wolves' tooth burnishing tools, pressure-rubbed over the surfaces. Finally, thin coats of rabbit-skin or parchment size were applied to hollow areas, to matt these and give contrast to the burnished highlights.

Colour may also have been applied, often bound in beaten egg-white 'glair'. Materials included minium (red lead); vermilion (mercuric sulphide); yellow ochre or burnt sienna earth colours; dragon's blood and gamboge resins, or yellow saffron (crocus stamens).

The subject is vast! Whilst no Samuel Collection frames are verified original to the paintings, and many frames have been re-gilded or are reproductions, several are period, and most are of very high quality (even the reproductions), so they bear scrutiny well, and are worth appreciating. Do have a look.

So to conclude, do consider the Samuel Collection frames as well as examining the paintings.

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