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From the ground up: Surface and sub-surface effects in fifteenth- and sixteenth-century Netherlandish paintings

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CONCLUSION

Abbie Vandivere

The focus of this dissertation was to explain the visual effect that *each layer* of a painting's structure – the support, ground, intermediate layers, paint layers, and varnish – had on the final appearance of early Netherlandish paintings. They functioned in a specific way that allowed the artist to best exploit the properties of the oil medium: its translucency, slow drying, blending capabilities, and ability to create textural effects. The preceding articles described the function of each layer, *from the ground up*. Although the reflectivity of the white ground contributed to the “glowing” quality of the paint, I have shown that its role was overestimated by previous scholars who were unaware of the function – and, indeed, even the existence – of intermediate layers. An intermediate layer could establish a base tone and simplify the painting process. This was described along with its other functions in Articles 2.1 and 2.2. I also argued that the underdrawing had an intentional visual effect in the some works by the sixteenth-century Leiden School painters and Hieronymus Bosch (Articles 1 and 2.2). Jan van Eyck and some of his contemporaries used surface effects – such as scraping or blotting – to manipulate glazes and physically reveal the paint in the underlayers (Articles 3.1 and 3.2). A case study of the Leiden School addressed several of these concepts by exploring the visual function of the underdrawing and underlayers, and the variety of layering and blending techniques that could be achieved using the oil medium (Article 1). Many previous studies have been devoted to the techniques for painting flesh, but the depiction of drapery has yet to be given the same degree of attention. Article 1 brought painted depictions of drapery to the forefront, and introduced a remarkable type

of drapery: *changeant*. This fabric – described in greater detail in Article 3.3 – relied on exploiting the translucency and blending properties of the oil medium.

My interest into the lower strata of early Netherlandish paintings was inspired by my conservation treatment of Jan Cornelisz. Vermeyen's *Holy Family*, where the intermediate layer had a significant visual effect on the completed work.¹ Conversely, the outcomes of this research also have applications in the conservation field. Through a now improved understanding of how underlayers might have functioned, a conservator might think differently about how to retouch an “open” area with a visible intermediate layer. My study of *changeant* draperies also emphasized how heavily the convincing depiction of the colour-changing fabric relies on translucency and subtle blending, often achieved through very thin layers of glaze. Should these glazes fade, become abraded or are (unintentionally) removed, the illusion can be seriously compromised. Art historians, as well, need to be aware of the unintended visual results of this sort of damage and deterioration.

An investigation into the functions of a painting's lower layers required being able to *visualize* the underlayers. Previous scholars may have been aware that certain lower strata were present, but did not fully understand their visual function. Prior to the mid-twentieth century, information about layers beneath the surface could only be obtained by looking at damaged or unfinished paintings, by reading historical documents about a painting's construction, or by examining paintings under magnification through

1. The treatment of the *Holy Family* (ca. 1530, Rijksdienst voor het Cultureel Erfgoed, on long-term loan to the Frans Hals Museum) was carried out at the Frans Hals Museum in 2006-2007, with the cooperation of Mireille te Marvelde.

the veil of the upper layers. This led to unfounded theories, myths and generalizations about how the early Netherlandish painters were able to achieve such amazing realism and technical sophistication.² Spearheaded by Coremans and his team in the 1950s, technical examinations involving cross-sections, x-radiography and infrared images meant that scholars were finally able to look below the surface and see how these paintings were made, and what materials went into their production. The further development of examination methods, binding medium analysis, and (non-invasive) scientific techniques has opened up new avenues of research. The targeted scientific research undertaken over the last few decades has dramatically increased our understanding of the buildup of early Netherlandish paintings.

From the Ground Up uses the results of previous examinations, supplemented by my own findings and further technical analysis, to guide our understanding in a new direction. By documenting my observations with digital (macro) photography, technical comparisons could be made between many paintings from different collections. Creating reconstructions was incredibly helpful in visualizing the emerging function of a painting's lower layers during the painting process (Appendices 4a-4e). The central research question of this dissertation was how *each part* of a painting's layer structure can have an effect on the finished work when the properties of the oil medium are exploited. This has *not*, nor was it intended to, result in a complete overview of techniques across all parts of the Netherlands over a two hundred year period. Instead, it has focused on specific aspects of the layer structure and relevant case studies where the visual effect is significant. The choice of case studies was affected by the availability of technical material, particularly samples. Discussions of visible underdrawing were restricted to Hieronymus Bosch and the Leiden School. Similarly, my case studies of coloured intermediate layers focused on the Northern Netherlands, in particular the work of Bosch and the Haarlem painters. It would be interesting to more thoroughly explore the use of these techniques in the South, especially as *primuersel*-like layers were frequently used by Rogier van der Weyden. Also, their connection with the adoption of coloured grounds and painting techniques in the late sixteenth and early seventeenth century would be worth considering, as this suggests a continuity in the development of techniques involving lower layers and simplification.

The overall simplification of a painting's layer structure that occurred over the course of the sixteenth century could have been the result of faster production

or more efficient division of work within the artists' workshop, in response to the increased demand of the art market.³ There were changes in all parts of a painting's structure. The quality of the wood support was held to high standards by guild regulations, but nevertheless the wood in the sixteenth century was of somewhat poorer quality.⁴ Canvas supports had been in use for centuries – mostly for ephemeral purposes, large works, or paintings that needed to be transported – but towards the end of the sixteenth century, the use of canvas began to supersede panel, even for prestigious works.⁵ The thickness of the ground also decreased over this period. Whereas the chalk and glue grounds of fifteenth-century Flemish painters were generally about 200µm thick, some early sixteenth-century painters applied their grounds thinly enough for the wood grain to become visible.⁶ The grounds became even thinner and/or were replaced with oil grounds over the course of the century, as canvas paintings required that they be more flexible. Alongside this development was the adoption of coloured grounds. Miedema and Meijer hypothesized that “the transition from white and lightly tinted to richly pigmented grounds is related to that from panel to canvas.”⁷ It is notable that both the use of flesh-coloured (*primuersel*-like) intermediate layers and the early adoption of grey and flesh-coloured ground layers occurred primarily in Haarlem.⁸ Coloured intermediate (*imprimatura*) layers continued to be used by Southern Netherlandish artists like Rubens and Brueghel.⁹

The character of the underdrawing also changed over the course of the fifteenth and sixteenth centuries. The meticulous hatched and cross-hatched underdrawings made with ink and a brush were gradually replaced by a sketchier style of underdrawing done in black chalk. Some sixteenth-century painters, like Cornelis Engebrechtsz, continued to underdraw parts of their paintings in a somewhat archaic style, but the outer wings of their altarpieces were often underdrawn in chalk. There was an overall reduction in the thickness of paint layers, with the laborious technique of superimposed layers giving way to thinner layers with more mixing and blending. By acting as a base tone and sometimes being left exposed at the surface,

3. For more information about workshops and the art market in this period, see Faries 2006: 1-14; Campbell 1981: 43-61, and Campbell 1976: 188-198.

4. Wadum 1998: 151, 154. The typical seasoning time for wood was shorter in the sixteenth century, and in the early seventeenth century it became more difficult to obtain good-quality oak.

5. Miedema and Meijer 1979: 80.

6. For example, Hieronymus Bosch, Maarten van Heemskerck and Jan van Scorel. See Stols-Witlox 2012: 167.

7. Miedema and Meijer 1979: 84.

8. Hendriks, van Grevenstein and Groen 1991-92: 481-497. The authors (and Karel van Mander) relate the adoption of fabric supports and the use of darker grounds to Italian influences.

9. Stols-Witlox, Doherty and Schoonhoven 2008: 79-91.

2. Roy 2000: 97-100, and Effman 2006: 17-26.

a coloured intermediate layer allowed for a more economical painting technique. Some deleterious effects resulted from this increased efficiency: for example, underdrawing became increasingly visible through thin paint layers. However, the resultant freer and more spontaneous style also encouraged technical experimentation and a more innovative use of the oil medium's properties. Over the course of the fifteenth and sixteenth centuries, the general technique progressed from being craft-centered to becoming more "painterly."

Ultimately, the real *impact* of the use of the oil medium that began around the time of Van Eyck is related to developments in technique.¹⁰ When compared to the use of oil in Netherlandish Pre-Eyckian paintings and medieval paintings from other regions, there was almost no change in the technology of oil painting. Indeed, the materials available to the artist changed very little. The greatest change was in the artists' understanding of how these materials could be combined and modified to create new effects. The resulting innovations in pictorial technique – the way that each artist used this set of materials and combined them in a specific way – reveals the true impact of oil.

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