Late-medieval workshops: making art in Lübeck

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Lübeck has been considered by many as a major centre for artistic production throughout the fifteenth and sixteenth centuries. While the extent of the influence of the city and its craftsmen is a matter of some dispute, it cannot be doubted that this north German city was home to many active workshops which drew on the benefits and status of the Hanseatic League. Lübeck privileges attracted and maintained artistic talent, which made Lübeck a central location for painters, sculptors, panel-makers and box-makers, who contributed to the production of magnificent devotional objects throughout the late-medieval period. These pages aim to offer a context for Lübeck artistic production, as well as an outline of common workshop practices around the time that the Kumla altar was produced.

Hanseatic capital and nexus

Lübeck was a Hanseatic capital from the twelfth century, and during 300 years from around 1230 to the 1530s the city was a nexus for trade from East and West, North and South. Hanseatic traders used Lübeck as a central point for maritime commerce between the four Hanseatic *kontore* or trading posts in Bruges, London, Bergen and Novgorod. Merchants were required to transit the majority of goods via Lübeck and register them at this port. As a result of this privileged position, Netherlandish traders imported fish and cloth, and also traded in carved sculptures and paintings from Bruges, Antwerp and Brussels. Baltic merchants brought with them anything from Baltic wood and wood products to fish and precious/semi-precious metals. Some of these goods remained in port and were prepared for sale, while others were distributed to ships for an onward journey, whether to Stockholm, Bergen, the Burgundian Netherlands, London or beyond. Apart from fish, many of these products and raw materials found their way into the workshops of painters, sculptors, panel-makers and box-makers, who created works of art intended for the church, such as the altarpiece from Kumla.

Planning

The planning of an altarpiece like the Kumla altar would probably have begun with a contract between a workshop master and a client, who in this case might have been a representative of the church at Kumla itself. Formal elements were likely agreed between master and client, such as the size, shape, iconographic content, colour scheme and amount of gold. Saint Birgitte was clearly important, and her position is marked with ‘B’ behind her figure.

Regulations

Each stage of production, as well as workshops and artisans working within them, were guided by regulations laid down by Lübeck’s craft guilds, which governed activities for panel-makers (*Kuntomacher und Schnitzer*), box-makers (*Kistenmaker*), and painters whose guild was shared with glaziers (see von Bonsdorff 1993: 24). In fact, the majority of what is known about making art in Lübeck is gleaned from the ordinances from these guilds as well as those from other Wendish cities. The earliest known ordinance for painters working in Lübeck dates to before 1425 (Lütgendorf 1925; Huth 1967; Bonsdorff 1993: 24) but there are others which contribute significantly to an understanding of medieval workshop practices. These include surviving ordinances from Cologne (c. 1371), Hamburg (1375), Lüneburg (1497), Rostock (1476), Flensburg (1497) and Greifswald (1511) (Bonsdorff 1993: 24; Nadolny 2001, vol II, 493–519). Incidentally, there were no painters’ guilds in Bergen until after 1560 or in Stockholm until 1585.

Artistic community

Master painters and woodworkers in Lübeck set up their workshops around the street and area known as the *Pferdemarkt* (Horse market), located in the southwestern half of the island, half-way between the church of Saint Peter and the Cathedral (Dom) near the southernmost tip of the urban centre enclosed by the river Trave. Adolph Goldschmidt (1889: 92) discovered the

names of many painters who had purchased property there. To the west were quarters with the trading houses and the homes of rich merchants, and to the east was small commerce and artisans.

Craftsmen and their workshops

Within this community, the training of craftsmen was regulated quite tightly, and refined over time. This is reflected in the ordinances for, among others, painters and glaziers, which state that masters could train one apprentice at a time, in addition to employing two journeymen. While the roles and responsibilities of a journeyman within a workshop are notoriously difficult to track because they are so poorly documented, understanding the activities of the apprentice is somewhat less of a challenge. The regulations stipulate that an apprentice had to be a 'legitimate' boy (that is, born within marriage) and one parent must be a citizen who could not be related to those of 'Vindland' origin (von Bonsdorff 1993: 54).

In Lübeck, an apprenticeship with a painter or carpenter was stipulated to last three years – and three years seems to have been the European norm at the time. The boy or young man was contracted to work for a master and his workshop during those three years, followed by another year during which the trained apprentice would be paid, and a further period when the newly trained craftsman would travel to gain further experience, whether to another city or abroad. (This is significant when considering probabilities for artistic production in less-well documented mercantile centres like Stockholm, Reval (Tallinn) or Bergen.) Itinerant painters were therefore the norm, rather than the exception. Jan von Bonsdorff discovered an interesting example of this (1993: 50) connected to a painter referred to as Gert Maler, from Reval, who worked in Viborg (Finland) and Stockholm in the 1480s and 90s. His residence permit was negotiated by the city councils because neither had a painters' guild.

Journeymen

For journeymen wishing to gain the status of 'master', they were required to declare their intentions to the guild/corporation and expected to produce and submit a masterwork. The masterwork required for Lübeck was a wooden sculpture of Saint George on horseback, a Calvary group, and/or a Saint John figure. There were similar requirements in Hamburg, Lübeck, Lüneburg and several nearby north-German cities. In Reval, standard themes for the masterwork were a seated Madonna, Saint Veronica and Saint George. The completed work was expected to comprise several pieces of wood, and represent a technical challenge.

Itinerant craftsmen

Whether a master or journeymen, and whether their work involved an entire commission, wing-paintings, individual sculptures, traceries, modifications or installation, it is important to remember that craftsmen were as portable as the merchant who joined communities in Hanseatic kontore or smaller trading stations. Craftsmen were also subject to similar terms as merchants while abroad. Among these was a prohibition on marriage with local women and the boy/man was expected to return to their hometown after a period of training. For this reason, among others, objects that were likely to have been produced by itinerant craftsmen during residence in foreign trading posts would be difficult to categorise.

Quality control for wood

For objects produced in Lübeck, an alderman was responsible for assessing and controlling quality, both for structural elements (boxes, panels, framing elements and sculpture) intended for local churches, with the presumption that these regulations also applied to objects intended for export. The alderman was obliged to confirm that craftsmen made panels and wooden sculpture as required from oak (Zunftrollen Lübeck 1864: 298). In other towns, a wider range of durable woods were also allowed. For example in Hamburg, in addition to oak, walnut and birch were allowed (Lappenberg 1866: 315; von Bonsdorff 1993: 59). Ash, willow and alder were approved woods in Rostock (*Rostocker Urkunden* in von Bondsdorff 1993: 59.) while linden and varieties of nutwood were approved in other towns in Mecklenburg and Pomerania (Tångeberg 1986: 143; Klein 2012).

These stipulations have in the past been a basis for considering the working practices of craftsmen in locations such as Stockholm or Bergen, where there were no guilds for

painters, and where local artists might have used alternative, local wood sorts such as pine rather than oak. However, this need not have been the case because of the widespread availability of Baltic oak throughout the Baltic and North Sea trading network. Nevertheless, if there were no regulations to control durability and longevity of products, as a means to guarantee them, then surely quality would vary considerably within an unregulated market. For example, the Lübeck ordinances state that wood used to make boxes had to be glued together and allowed to dry for at least a day before further processing to ensure good adhesion. If regulations were not in place, and this stipulation not observed, then the stability of the panel or altar box (corpus) would be decreased even before ground layers and paint were applied.

Another point of interest is the nature of the wooden blocks from which sculptures were carved. It is repeatedly claimed in the art historical literature that the most stable sculptures were not those carved of a single piece of wood. However, laminate blocks were commonly prepared for carvers to produce figures of many different sizes and shapes – composite structures that enhanced rather than decreased stability and thus the likelihood that ground and paint layers would remain intact over time.

Preparation and ground layers

The surface of the wood was sanded and smoothed to remove imperfections and injuries, and to diminish the unevenness of knots. The surface would be sealed with glue water to prepare it for receiving a ground layer. Without the sealant, moisture from the ground layer would soak into the wood, which would weaken the ground and compromise adhesion. Imperfections and divisions in panels would be covered with linen or parchment to conceal them more effectively under the ground layer and to prevent (for as long as possible) movement that would disrupt subsequent layers of ground, gilding and paint. The linen or parchment played an especially important role as the wood began to age and change with humidity and temperature, and as the ground layers and paint loose flexibility with age. These materials would act as both mask and bridge.

The ground layers themselves were formed of chalk mixed with rabbit-skin glue and water. The chalk itself might have derived from the chalk cliffs such as those at Møn in Denmark. The chalk/glue/water mixture was applied, perhaps by a specialist preparer, to the prepared wood with a large brush in multiple layers. Once dry, the surface was sanded until it was glossy and smooth, most likely with a shark skin. Thereafter, and usually after the ground was scored or underdrawn, the ground was primed with a lightly pigmented oil or egg-white layer to prepare it for subsequent layers: to ensure that binding medium would not be wicked into the porous ground, which would compromise adhesion of metal foils and paint.

Scoring

Once the surface of a panel was ready for gilding and paint (not necessarily in that order), pictorial space would be designed and mapped out. Areas reserved for gilding would often be distinguished from those to be painted with a line that was scratched or scored through the chalk ground. Whereas a line made with graphite or a brush would be invisible under a bole or paint, a scored line marked the surface in a more effective way. The line acted as a consistently visible boundary for the gilder, to ensure that precious metal leaves were applied only in areas that would be visible in the finished work. On the Kumla altar corpus and wings, scored lines were placed with consideration for the range of vision around the sculpture to the gilded backdrop: the lines are hidden by sculpture in the completed work.

Gilding

Throughout the medieval period it was common to gild portions of works of art, particularly those intended for churches, with different types of metal foils, whether gold, silver, part-gold or gilded tin. Foils such as silver and part-gold, often referred to as *Zwischgold*, were also treated with a glaze to protect them from oxidation, sulphide formation and blackening tarnish. Gold might also be glazed to produce a nuanced visual effect.

Visual effects relied heavily on the type of gilding, and whether or not the foil could be burnished to modify and intensify its reflective surface. If the foil was applied to a bole meant for ‘water gilding’, usually reddish in colour, the bole acted as a cushion for the foil which could then be polished to shine brightly. The bole on portions of the Kumla altar owed

its colour to red-iron oxide or haematite, which was bound in animal-skin glue and applied to areas to be gilded in a layer approximately 2mm thick. (See results for XRF and paint cross-sections.)

By contrast, foils applied to an adhesive, such as those on the Kumla wings, could not be polished but rather were left matte. Adhesives, whether oil-based or glue-based, provided a tacky surface onto which a foil was laid. These lacked the smoothness of a bole, which meant that the delicate foil would tear if the gilder attempted to polish it. The adhesive colour could be green or yellow, which had a distinct visual impact on the reflected foil colour.

Painters and sculptors commonly used one or the other gilding type for haloes and figural backdrops, and combinations for other pictorial elements such as armour and cut velvets, which might additionally require designs formed of gilded-tin brocades. Given the implications for cost, quantities and locations for gold or alternative metals were most often agreed with the purchaser, that is, if the image was not produced speculatively for an open market.

Underdrawing

Pictorial space was also designed and mapped out, often in great detail, whether with graphite, charcoal, an ink (e.g., ground carbon in medium), chalk or a dark-coloured paint. Only carbon-containing materials are visible in infra-red imaging and thus it is possible that chalk or ochres were commonly used as well. Furthermore, mapping pictorial space on panels might also have relied on a workshop pattern, which could be used again and again. Patterns were a common tool for Lübeck painters, who responded to a ready market for panel paintings depicting images of saints, which often functioned as wing-doors on shrines and altarpieces.

Paint

By the mid-fifteenth century, painters working in Lübeck were well-acquainted with the handling properties and pictorial possibilities related to both oil-based and egg-tempera paints. While some were evidently trained to illuminate manuscripts and paint banners, among other ephemeral objects, the majority were clearly trained to paint figures on panel and to polychrome sculptural works. If surviving panel paintings and polychromy associated with Lübeck workshops are anything to go by, the majority working in the late-medieval period were typical of those working across northern Europe: they used pigments bound in oil, usually linseed oil but with well-tested variations based on colour requirements and position in the layer structure.

Long experience and experimentation with oil paints meant that painters could blend colours wet-in-wet, thus enhancing verisimilitude, but also allowing them to achieve intensely saturated and vibrant blues, purples, reds and greens, punctuated by lead white and lead-tin yellow, and by light-reflecting metal foils. The intensity of colour, based on a relatively limited palette that was quite often used schematically, ensured that the painted and gilded surface would captivate its audience, whether from afar on a distant altar or within their personal space within a dimly lit chapel.

Colour was most often applied to panel or sculptural forms in multiple layers, particularly for the depiction of complex draperies and foliage that achieved a three-dimensional appearance on a two-dimensional surface. Painters were trained to create such visual effects by progressing from light tones (probably containing some lead white or lead-tin yellow) applied to a primed white ground, to darker and increasingly saturated tones of the same colour. Blue tones that created the appearance of atmosphere or were an essential element in the Virgin's cloak were most often produced with the copper-carbonate mineral pigment, azurite. This mineral could be sourced from silver mines to the south, e.g., in the Harz Mountains in what is now central Germany. Green tones might be made from a mixture of azurite with either lead-tin yellow or yellow ochre, or with malachite, a copper-carbonate mineral associated with azurite. However, the most beautiful and natural shade of green for landscapes was most commonly created with a copper-green glaze, based on a copper acetate that is often referred to as verdigris. While the range of green colours was highly limited, the range of reds available to medieval painters was far more diverse. A painter could choose vermilion, the mercury-sulphide pigment, or red lead (minium) for intense and opaque orangey reds; or haematite for deep purple browns; or transparent lakes based on dye-bearing insects or

madder root for jewel-like red glazes. Naturally, the choice of colour depended on whether a crimson or tomato-red shade was the desired result, its location in the layer structure, its role in the pictorial scheme and its availability (among other considerations). Additionally, green and red glazes, as well as oil-rich blue paints could be used over metal foils as well to produce nuanced enamel-like surfaces. These represented tapestries and finery that offered a suitably precious setting for the Virgin and Child, among other holy figures.

Varnish

Once the final paint layers had been applied and allowed to dry, the painter would protect the painted surface with a 'varnish'. This might have been composed of a simple layer of whipped egg white, or alternatively a spirit varnish containing a resin like sandarac, which additionally lent additional intensity, saturation and gloss.

Completion

Assembly of the composite objects would be a complex operation, particularly if the object included diverse elements such as a corpus, wings panels (with integral frames), tracery curtains, columns, baldachins, sculptural figures, predellas and canopies. Delivery of these diverse elements to the patron might require nothing more than a wagon with protective cover for objects meant for churches within Lübeck itself or in the surrounding region. Separate elements might have been assembled in the workshop, or on location, or more likely a combination of both. However, what about objects intended for churches in Sweden (like at Kumla), around the Baltic, in the North Sea trading network or the far north of Norway? Disparate elements were probably not shipped in composite wholes, but more likely separately, with protective packaging. Furthermore, it seems likely that corpus boxes were shipped flat (perhaps even like an IKEA flat-pack) for assembly once they reached their destination. This practical fact leaves open any number of questions related to joint ventures and local revisions.

Further discussion of painting technique can be found in the pages related to paint analysis.

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