

“... I CAME TO UNDERSTAND HOW TO TRANSLATE NATURE INTO COLOUR ACCORDING TO THE FIRE IN MY SOUL”: ALEXEJ JAWLENSKY’S PAINTING TECHNIQUE IN HIS MUNICH *OEUVRE*

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ABSTRACT

The Russian painter Alexej Jawlensky, who worked in Munich between 1896 and 1914, was an important representative of Expressionism and abstract art in Germany. He was involved with the artistic group Der Blaue Reiter, whose members shared not only ideas about art but also an interest in questions of painting technique and painting materials. This paper aims to illuminate the working process of Jawlensky through research into the characteristics of his painting technique. It examines the paint supports and painting materials in specific works of art from Jawlensky’s Munich period. This technical examination, together with the evaluation of written sources reveals the manifold artistic and technological influences that contributed to the development and peculiarities of Jawlensky’s art. Comparisons with selected works by Wassily Kandinsky and Gabriele Münter show the strong influence Jawlensky’s painting technique had on his artist friends, especially in the years 1908–1909.

ZUSAMMENFASSUNG

Der russische Maler Alexej Jawlensky, ein wichtiger Vertreter des Expressionismus und der abstrakten Kunst in Deutschland, lebte und arbeitete zwischen 1896 und 1914 in München. Er gehörte der Künstlergruppe *Blauer Reiter* an, deren Mitglieder neben dem Austausch künstlerischer Ideen auch ein Interesse an Fragen der Maltechnik und –materialien verband. Der vorliegende Aufsatz beleuchtet den Arbeitsprozess von Jawlensky durch Untersuchungen zu den Charakteristika seiner Maltechnik, zu den Bildträgern sowie den Malmaterialien aus seiner Münchner Schaffenszeit. Diese kunsttechnologischen Forschungen unter Einbeziehung von Schriftquellen zeigen die vielfältigen künstlerischen und maltechnischen Anregungen auf, die zur Entwicklung und den Besonderheiten von Jawlenskys Malweise beitrugen. Vergleiche mit ausgewählten Werken Wassily Kandinskys und Gabriele Münters belegen den großen maltechnischen Einfluß, den Jawlensky besonders in den Jahren 1908/09 auf seine Künstlerfreunde ausübte.

INTRODUCTION

The paintings of Alexej Jawlensky and their forgeries are frequently the subject of examination for authentication. Increasingly,

technological and analytical assessment is commissioned to complement stylistic judgement with an objective critique of materials, painting technique and the condition of questionable items. The manifold particularities a painting may reveal in respect to painting support, underdrawing, pigments, binding media, paint application and consistency, later changes and restorations, ageing phenomena, etc., present a wealth of information and often a new understanding of the object. This technology-based perspective may even significantly influence the art historical judgement, such as in the case of altered signature or changes in appearance as a result of previous restoration treatments. However, the significance of an isolated technical investigation on a doubtful object is, in general, limited if no, or only a few, reference data from confirmed originals are available for comparison. Additionally, documentary research into the context of the historical, social and scientific background of an artist’s life is essential to explain a choice of materials and the intention behind a working technique. Therefore, only a broad, systematic and context-based approach for art-technical examinations may lead not only to a new perception of the artist’s working process, but also facilitate conservation decisions and authenticity judgements.

The following study on Jawlensky is part of an ongoing research project on the painting technique and mutual influences of the artists around Der Blaue Reiter. The public Munich painting collections, *Städtische Galerie im Lenbachhaus* and the *Bayerische Staatsgemäldesammlungen*, contain 16 paintings of Jawlensky’s Munich years, which were examined in the course of this co-operative project, Table 1. They date between c.1902 and 1913; for some works the dating is a matter of discussion, especially for the years before 1907. Although they present only

Table 1 Overview of the examined paintings.

English title according to [1]	German title according to the collection	Catalogue raisonné no.	Collection/inv no. Lenbachhaus (LBH) and Bayerische Staatsgemäldesammlungen (BStGS)	Date according to catalogue raisonné [1] or Fäthke [4], if different
<i>Hyacinth</i> (Fig. 1)	<i>Hyazinthe</i>	41	LBH/G 13106	c.1902 [1]; 1903/05 [4, p. 76]
<i>The hunchback</i> (Fig. 2)	<i>Der Bucklige</i>	82	LBH/G 13107	1905 [1]; 1906 [4, pp. 87, 94]
<i>Füssen</i>	<i>Füssen</i>	99	LBH/GMJE AK 8	c.1905
<i>Landscape at Carantec with woman</i>	<i>Landschaft aus Carantec mit Frau</i>	108	BStGS/13463	c.1905 [1]; 1906 [4, pp. 87]
<i>City in the fog – Wasserburg on the Inn</i>	<i>Stadt im Nebel – Wasserburg am Inn</i>	141	LBH/G 13108	1906 [1]; 1907 [4, p. 98]
<i>Road in winter - Wasserburg</i>	<i>Straße im Winter – Wasserburg</i>	152	LBH/GMS 679	c.1906 [1]; 1907 [4, p. 98]
<i>Mediterranean coast</i>	<i>Mittelmeerküste</i>	175	BStGS/15256	c.1907 [1]; Earliest possible date: autumn 1906 [4, p. 89]
<i>Sketch from Murnau</i>	<i>Skizze aus Murnau</i>	205	LBH/GMS 677	c.1908
<i>Summer evening in Murnau</i> (Fig. 3)	<i>Sommerabend in Murnau</i>	204	LBH/G 13109	c.1908
<i>Murnau landscape</i>	<i>Murnauer Landschaft</i>	283	LBH/GMS 678	1909
<i>Portrait of the dancer Sacharoff</i>	<i>Bildnis des Tänzers Alexander Sacharoff</i>	250	LBH/G 13388	c.1909
<i>Still-life with fruits</i>	<i>Stilleben mit Früchten</i>	365	LBH/GMS 680	c.1910
<i>Female nude, sitting</i>	<i>Sitzender weiblicher Akt</i>	334	LBH/G 12476	c.1910
<i>Maturity</i> (Fig. 4)	<i>Reife</i>	463	LBH/G 13000	1912
<i>Elongated head in red-brown</i>	<i>Großer Frauenkopf auf Rot</i>	595	BStGS/13462	1913
<i>Spanish woman in black shawl</i>	<i>Spanierin mit schwarzem Shawl</i>	574	LBH/G 12556	1913

a small part of Jawlensky's Munich *oeuvre* — the *catalogue raisonné* lists c.600 paintings [1]. The thorough and systematic study of this selection of paintings has given valuable insights into the specific characteristics and changes in Jawlensky's technique and materials. The paintings were examined under the stereomicroscope and under ultraviolet (UV) fluorescence, as well as by infrared reflectography. X-ray images were available for some works. The pigments, fibres and extenders of the cardboard supports were identified by light microscopy and scanning electron microscopy/energy dispersive X-ray microanalysis (SEM/EDX). Identification of sizing samples was done by Fourier transform infrared (FTIR) microscopy. Binding media analysis and lake identification are in progress. The context of documentary sources, notably Jawlensky's letters, shed initial light on his occupation with tempera recipes for binding and painting media. Comparative examinations of selected paintings by Wassily Kandinsky, Gabriele Münter and Marianne von Werefkin were initiated to investigate the extent of direct technical influences within this group of artists.

BIOGRAPHY

Alexej Jawlensky, born in 1864/65 in Torschok (Russia), entered the St Petersburg Art Academy in 1889 [1–4]. In 1892 Jawlensky met the artist Marianne von Werefkin, who became his companion and patron for many years. Together with two artist friends from the St Petersburg Academy, Igor Grabar and Dmitry Kardowsky, Jawlensky and Werefkin left Russia in 1896 and moved to Munich. At the time Munich was known for its vivid artistic atmosphere and, in particular, for the intensive discussions and experiments on historical painting techniques and new artists' materials. Until c.1899 Jawlensky studied at the renowned school of painting and drawing of Anton Ažbe. Over the years, Jawlensky's and Werefkin's home at Giselastraße 23 became a well-known address in Munich for artists, actors and society, where ideas and theories of avant-garde art were discussed. A common interest in painting materials among the artist colleagues found its manifestation in the establishment of a chemical laboratory in Jawlensky's studio around 1898. Here Kandinsky participated in experiments with new binding media, especially tempera. Extensive and repeated travels throughout Europe, but also painting expeditions within Germany, had a great impact on Jawlensky's artistic development, some becoming turning-points in his career. Thus, after a journey to France in 1903, Jawlensky stopped painting in an Impressionist manner influenced by Anders Zorn and Lovis Corinth, and Neo-Impressionism became his ideal for the following years, Fig. 1. Between c.1905 and 1908 Jawlensky's paintings were highly influenced by modern French art and he adapted the style, as well as ideas on colour and light, from his revered model Vincent van Gogh and the Nabis, Fig. 2. Mediated through artist friends, such as Willibrord Verkade, Paul Sérusier and Wladislaw Slewinsky, the art of the Nabis, and from c.1908 the Cloisonnism of Paul Gauguin and the School of Pont Aven, became his most important sources of intellectual and artistic inspiration.

Summer stays at the village of Murnau (Upper Bavaria), together with Werefkin, Kandinsky and Münter in 1908–1909 brought a significant development not only in his own, but also in his colleagues' work, Fig. 3. At this time, Jawlensky had considerable influence on the art, painting technique and materials of Kandinsky and Münter. In 1909 Kandinsky and Jawlensky founded the Neue Künstlervereinigung München (NKVM), which split up in 1911 after internal dissension, but led to the establishment of Der Blaue Reiter at the end of 1911. A journey to Prerow on the Baltic Sea in summer 1911 marked another milestone in Jawlensky's career. Around this time he had already established a very personal, non-realistic interpretation



Fig. 1 *Hyazinthe*, on canvas, 55.7 × 34.8 cm, Städtische Galerie im Lenbachhaus.



Fig. 2 *Der Bucklige*, on cardboard, 52.8 × 49.7 cm, Städtische Galerie im Lenbachhaus.

of nature. Based on the ideas of Cloisonnism and using strong, pure colours he had developed a vocabulary of his own, which he applied to his expressive portraits, landscapes and still lifes,



Fig. 3 *Murnauer Landschaft*, on cardboard, 49.7 × 53.6 cm, Städtische Galerie im Lenbachhaus.



Fig. 4 *Reife*, on cardboard, 53.7 × 50.2 cm, Städtische Galerie im Lenbachhaus.

Fig. 4. The First World War put an abrupt end to Jawlensky's Munich period and brought an irreversible end to the artistic endeavours of his circle of friends and artist colleagues. Jawlensky had to leave Germany and found exile in Switzerland until his return to Germany in 1921. Jawlensky lived and worked in Wiesbaden until his death in 1941, increasingly disabled by paralysis of his hands, but still enormously creative.

CARDBOARD AS A PAINTING SUPPORT

During the first years in Munich, Jawlensky still painted on canvas, but around 1900 he started using machine-made cardboard, which became his exclusive paint support around 1905¹.

¹The only canvas painting examined here, *Hyazinthe*, is painted on a fine canvas in simple tabby weave with 18 × 22 threads per centimetre. A white priming of zinc white and gypsum was applied by hand.

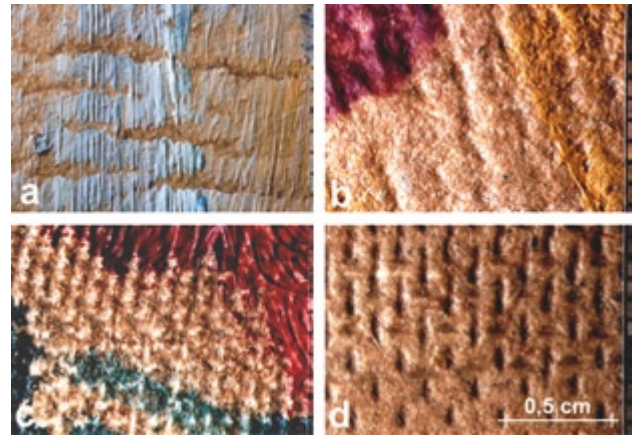


Fig. 5 Different surface structures of boards
 (a) Wrinkles incompletely covered by paint, *Stadt im Nebel – Wasserburg am Inn*, front.
 (b) Grooves, *Murnauer Landschaft*, front.
 (c) Impressed fabric texture, *Spanierin*, front.
 (d) Metal pin imprints, *Murnauer Landschaft*, reverse side.

Until 1914, the type and quality of Jawlensky's boards did not generally change, but differences in composition, thickness and surface structure can be observed.

All the boards are of a light brown shade with slight variations in colour. They were originally brighter in tone but never white. The analysis of inorganic extenders typically revealed the presence of an iron-containing silicate, beside gypsum, chalk, baryte and talc, which contributes to the boards' brownish shade.

The size and format of Jawlensky's paintings on board vary considerably and show only a few repetitions of, presumably, commercial 'standard' measurements, such as 38 × 50 cm or 54 × 50 cm. The thickness is usually c.5 mm, with a minimum of 3 mm. The specific weight ranges from c.2600 to 4200 g.m⁻². It seems that Jawlensky cut a number of boards himself². Generally, the artist did this before painting, but there are some examples where the cutting of specific edges was done afterwards, and are likely to be final format corrections by the artist's own hand, for example, *Mittelmeerküste*, *Stadt im Nebel – Wasserburg am Inn* and *Sitzender weiblicher Akt*.

Fibre microscopy identified wood pulp from coniferous wood as the main component of the boards. Straw, cellulose and bast were identified in most of the samples. Coloured textile fibres are often visible under the stereomicroscope and, usually, brown wooden particles can be found, giving the board a speckled appearance. There are also examples without textile fibres or others made of a finer fibre pulp. All the boards are made of several layers. The production process varied, either couching or gluing together the single sheets of thinner board.

Colour and surface texture were of major importance to the artist and were applied as artistic means. Around 1903–1904 Jawlensky started deliberately to leave the board visible, even employing the support as a carnation tone, as in *Sitzender weiblicher Akt*, or in the portrait heads of 1910–1913. The board's texture is usually clearly visible under the paint layers and in parts left uncovered by paint, Fig. 5a. A closer examination of the board surfaces showed a variety of textures: grooves and wrinkles, caused by several steps of couching and/or calendaring, impressed fabric structures of different fineness and imprints of small metal pins, Figs 5a–5d. Fabric and metal pin imprints to imitate a canvas structure are assumed to be part of the manufacturers' design [5]. Often two impressions of overlaying structures

²These knife or saw marks are clearly distinguishable from machine or guillotine cuts.

occur. Even rather smooth boards usually reveal slight textures on closer examination. On some boards, the textures are wavy, probably due to an irregular passage over rollers. The surface characteristics on the two sides of the boards frequently differ.

The noted differences between the boards make it likely that they were made by different, probably local, manufacturers, but no suppliers' or manufacturers' stamps have been found on the boards so far. Hahl-Fontaine mentions that Jawlensky purchased sketch-books at the store of Adrian Brugger in Munich, which also supplied artists' boards and advertised in the *Maltechnische Mitteilungen für die Malerei* [6, p. 107; 7].

Primings on Jawlensky's boards were not found among the paintings examined, but a transparent, usually slightly brownish organic coating was always present on both sides. The sizing differs in terms of thickness, transparency and colour, and occasionally has air bubbles or dirt inclusions. FTIR microscopy on selected samples showed the presence of animal glue. A sketch by Hugo Troendle, a student of Jawlensky, confirms this. Around 1908 he copied two paintings by Jawlensky in his sketch-book and wrote underneath: "Jawlensky/ auf geleimt Pappdeckel/ und auf Leichsaug Grund/ etwas aufgezeichnet" ("Jawlensky/ on sized board/ and on easy-absorbing priming/ sketched something") [4, p. 108]. The boards were apparently bought ready-glued, as no glue was found on the boards' edges. Conservation problems occur for a number of Jawlensky's paintings, either because of severe mechanical cracking originating in the glue and continuing into the paint layers, or in adhesion problems between the paint layers and the glue causing flaking and paint loss (for example in *Bildnis des Tänzers Alexander Sacharoff* and *Stilleben mit Früchten*). Similar problems of delamination can be observed on paintings on board by Münter in her Munich period.

PAINTING TECHNIQUE

During the years in Munich the characteristics of Jawlensky's underdrawing, colours and brushstrokes, as well as his treatment of contours and spaces, changed significantly, culminating in an unmistakable, expressive artistic language.

Underdrawing

Dark blue underdrawing, which simultaneously serves as a contour line, is one of Jawlensky's most characteristic features that gains particular importance from around 1907–1908 until 1914. The earlier Neo-Impressionist paintings examined, *Hyazinthe* and *Ansicht von Füßen*, did not reveal any underdrawing. Shortly after his journey to France in 1906, a painted underdrawing is visible, but these lines are rather thin and almost completely covered with paint. As can be seen in *Der Bucklige* and *Landschaft aus Carantec*, the underdrawing lines are not yet prominent and developed as a theme, Fig. 2.

Around 1907, Jawlensky adapted Cloisonnism and learned to "mount colour fields in strong contours" [8, p. 89]. In the still lifes of 1907, the Murnau landscapes or figures of 1908/09, the dark blue underdrawing line is left completely visible and often partially reinforced by dark blue brushstrokes at a later stage, Fig. 3. Until 1914, this blue underdrawing and contour line persists in Jawlensky's paintings. Usually, the paint is applied in spontaneous, rather long, single brushstrokes with strongly diluted paint, which appears almost watery, Fig. 6. It contains mainly Prussian blue, but additions of iron oxide black and carbon black have also been detected. Infrared reflectography revealed only a few examples of minor corrections of the underdrawing.

Characteristics of colours and paint application

Generally, Jawlensky applied the paint very quickly *alla prima* in a simple composition of only one, sometimes two layers. He used

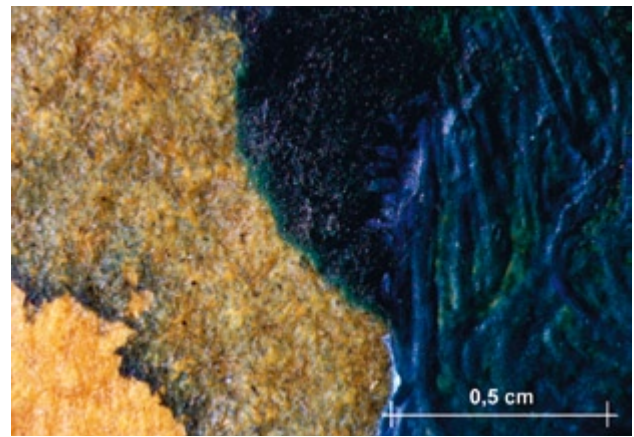


Fig. 6 Blue underdrawing in diluted paint (left), not covered by paint layers, *Skizze aus Murnau*.



Fig. 7 Characteristic inhomogeneous, zig-zag brushstroke, *Großer Frauenkopf auf Rot*.

exclusively bristle brushes of different widths. The paint application varies in thickness and opacity, ranging from thin, diluted layers to impastoed, opaque details and highlights. A powerful, quick and confident paint application, often with the hairy texture of the brush visible and impastoed edges are distinctive features of this artist's work. The paints were mixed wet-in-wet on the surface but often also within a single stroke, when Jawlensky took several colours from the palette, only mixing them through application, Fig. 7. Consistency and also gloss show variations, as described below.

Hyazinthe, *Ansicht von Füßen* and *Straße im Winter* are examples in which the artist followed a Neo-Impressionist technique between c.1902 and 1906, Fig. 1. Jawlensky had exchanged the brownish colours and dark-to-light contrasts of his earlier paintings for a much brighter palette of rose, light blue, green and other pastel shades. The paints were usually applied in straight brushstrokes of varying length, often short or stippled. Jawlensky deliberately chose varying directions in his brushstrokes to differentiate between the compositional elements, to show perspective and direction.

In 1906 Jawlensky's colours became stronger and were applied in intense contrast to each other, for example in *Landschaft in Carantec* and *Mittelmeerküste*. Gradually, Jawlensky moved away from a naturalistic palette and instead began to paint what he felt, expressed in his memoirs as to "translate nature into colour according to the fire in my soul" [2, p. 109]. The brushstrokes in the portraits, but also in the landscapes, became longer and



Fig. 8 Gabriele Münter, *Zuhören — Bildnis Jawlensky (Listening — Portrait of Jawlensky)*, 1909, on cardboard, 49.7 × 66.2 cm, Städtische Galerie im Lenbachhaus.

broader and showed the influence of van Gogh, for example in the treatment of faces or vertical and horizontal brushstroke patterns in the backgrounds, as for *Der Bucklige*, Fig. 2.

In the paintings of Murnau from 1908–1909 coloured fields of monochrome character are often divided by the prominent blue underdrawing lines, Fig. 3. In general, the paint is applied more thinly and without strong impasto. It is of varying consistency and often diluted; therefore the brushstroke loses some of its importance. In these Murnau years, the works of Jawlensky, Kandinsky and Münter show strong parallels, artistically and technically. Johannes Eichner, the biographer of Münter and Kandinsky, stated that “when the group started working in Murnau, without doubt Jawlensky was the most advanced. He already knew how to paint in a modern way” [8, p. 89]. In the earlier years between 1903 and 1908 Kandinsky and Münter both painted in Impressionist colours, applying the paint thickly *alla prima* with the palette knife on primed white supports. The paint usually covers the support completely and a thin black underdrawing, presumably with a pencil, can only rarely be seen. In 1908, under the influence of Jawlensky, Kandinsky and Münter gave up this painting technique: they started using similar sorts of boards, adopted the *cloisonné*-like underdrawings (not only in blue, but also in black or brown paint) and generally chose paints similar in colour and appearance to Jawlensky’s, Fig. 8. Artistically, Jawlensky, Kandinsky and Münter shared common ideas of the reduction of representational details, the increasing independence of pure colour from nature, the neglect of perspective in favour of the plane and a simplification of contours to enhance expression [9, p. 108]. Interestingly, the examination of two paintings by Werefkin from these years did not reveal an obvious similarity to Jawlensky’s painting technique.

The portraits, heads and also the landscapes, such as those from Prerow, which Jawlensky painted between 1909 and 1914, are powerful and important works. In these years Jawlensky’s art went through a considerable artistic development, which cannot be discussed in detail here. Regarding painting technique, they are quite homogeneous and Jawlensky relied on the system he had developed in the years before: firm contour lines, strong colours and contrasts, the paints applied quickly and directly on a sized, unprimed light-brown board in powerful, inhomogeneous strokes³. As a new idiosyncrasy, a characteristic paint application in zig-zag and wavy strokes takes shape in these years, Figs 4 and 7. In the years of his Swiss exile and later in Wiesbaden,

³Except for the year 1913 when Jawlensky’s colours became subdued, with more brown, black and blue shades.

Jawlensky painted extensive series of his two major themes — the human face and the landscape — and moved towards an increasingly abstract, reduced and religiously-inspired artistic language using techniques and materials that must be the subject of other studies.

Finalizing the work

It is a particular characteristic of Jawlensky that he often completed his paintings with a dark blue or black-blue line along the edges, Figs 1–4. This border contour can be found in portraits, still lifes and landscapes, and was usually applied as a final step on top of either the wet or dry paint. In many cases the artist used this contour as a kind of frame, apparently following the tradition of Russian icon painting. The contour, which is c.4–8 mm wide, is part of the painting and is meant to be seen and not to be covered by framing.

In the paintings under examination, Jawlensky signed ‘a. jawlensky’ or with his monogram ‘A.J.’ on the painted side, sometimes with both signature and monogram on one painting⁴. The signature is usually in blue paint on the already-dried paint layers, but examples were also found where he signed the still-wet paint surface.

Jawlensky’s position on varnishing is not documented, but one can assume that he might have followed other Expressionists, such as Edvard Munch or the Nabis group of artists in their refusal to varnish paintings and their preference for matt surfaces. This study seems to confirm the assumption, since on eight of the 16 paintings examined — dating between 1902–1905 and 1913 — no varnish could be found.

PAINTING MATERIAL

Pigments and extenders

Only three pigments are specifically mentioned by Jawlensky in his memoirs, namely cadmium yellow, chromium oxide green and Prussian blue [2, p. 112]. In contrast, a surprising variety of no less than c.30 pigments, lakes and extenders were found on his paintings and in paint residues on two Polenowa stools from Jawlensky’s Munich atelier, analysed by Andreas Burmester and Christoph Kregel at the Doerner Institute [10]. The results indicate that Jawlensky’s palette clearly reduced from around 1910 onwards and was then restricted to about 20 materials. The three above-mentioned pigments, Prussian blue, cadmium yellow and viridian (chromium oxide hydrate green), as well as others, such as cobalt blue, synthetic ultramarine, vermilion, red and purple lake, chromium yellow or zinc white are favourite pigments; some of them can be found on almost every one of the artist’s works. Other compounds, for example cerulean blue, dark and light cobalt violet (cobalt phosphate and arsenate), cobalt green, chromium orange, minium, Naples yellow, zinc yellow or strontium yellow, were found only occasionally. Ochres, red iron oxide and carbon black pigments play only a minor role, and are either rarely used or admixed in only small quantities.

Regarding organic lakes, red and purple varieties are of major importance in Jawlensky’s work, but other colours seem to be an exception⁵. These lakes are aluminum-rich and typically show an elevated phosphorus, and sometimes sulphur, content. They do not show significant fading. Occasionally, an orange fluorescence was observed, which hints at the presence of purpurin-rich madder.

The chronology of selected pigments deserves a closer look. Two important materials, lead white and Schweinfurt green

⁴Signatures, dates and descriptions on the reverse sides are not dealt with here.

⁵An organic yellow lake was found in only two paintings of 1908–1909.

(emerald green), seem to disappear from Jawlensky's paintings almost simultaneously around 1909–1910. Jawlensky used lead white parallel to zinc white until c.1910. The latest evidence for lead white dates to the year 1912, but at this time zinc white, and to a lesser extent baryte, are already the dominant white pigments. Schweinfurt green occurs frequently until c.1909, but after this year viridian apparently remains more or less the only green pigment. Most likely, the artist ceased to use these two high-quality pigments as a reaction to the debate on their toxicity, possibly under the direct influence of Kandinsky. Already by 1902, Kandinsky had urged Münter to dismiss some 'bad colours' from her palette, Schweinfurt green being one of them [11, p. 20]. Toxicity might have been the reason for abandonment and Kandinsky possibly also banished lead white. The Doerner Institute's pigment database on some of the Munich paintings and the palette of Kandinsky indeed seems to confirm this suggestion, since neither lead white nor Schweinfurt green have been found to date. The summer stays of Kandinsky and Jawlensky in Murnau in 1908–1909 may have been the time and place for discussions on suitable painting materials.

A new, colourful pigment, cadmium red, entered Jawlensky's palette around 1910 and was soon substituted for vermilion in his paintings. The earliest finds of cadmium red on two Murnau paintings of Kandinsky and Münter date even slightly earlier, to 1908⁶. As an artist's paint, cadmium red was still a brand-new commercial product at the time, but had received a very positive review from the Munich colour-chemist Alexander Eibner in 1909 [12, p. 143].

Tempera painting in Jawlensky's work?

A fascination for tempera painting and painting techniques in general was certainly one of the reasons that Jawlensky and Werefkin, as well as other Russian artists, chose Munich as the place for their new careers. In Munich, practical experiments with tempera as a binding medium had already started in the nineteenth century, inspired by studies of historical painting treatises and an increasing interest in the painting techniques of the Old Masters [13, pp. 301–303]. The Munich researcher into historic painting technology, Ernst Berger, stated in 1906, that in the 1860s tempera paint was still fairly unknown and no commercial tempera was available [14, p. 50]. By the end of the nineteenth century, this situation had changed considerably, and various German paint manufacturers offered tempera tube paints, such as Wilhelm Beckmann, Richard Wurm (both Munich), Schmincke (Düsseldorf), Neisch & Co. (Dresden), Müller & Co. (Stuttgart), Haas & Brand and Herz & Co. (both Berlin). These tempera systems had long left the path of traditional egg tempera and included a variety of chemical ingredients, generally forming emulsions. The Munich *Deutsche Gesellschaft zur Beförderung rationeller Malverfahren* (German Society for the Promotion of Rational Painting Techniques) tried to assess these tempera paints critically, especially their stability, and to publish recipes and practical tests [13, pp. 303–306].

By 1897 Jawlensky, Werefkin, Grabar, Kardowsky and their teacher Ažbé had travelled to Italy to study the painting techniques of the Old Masters, such as van Eyck, Titian, Veronese and others. Werefkin left two notebooks reporting discussions with museum professionals, restorers and painters. Among other things she mentions gum, tar and amber lacquers, which in some cases may be used with (or possibly as) tempera paint if mixed, for example, with milk or paste in the right proportions [4, p. 38].

⁶ Analysis by Labor Jägers, Cologne, and the Doerner Institute, Munich.

A visit of Jawlensky, Kardowsky and Grabar to the painter Franz von Stuck in 1898–1999 made tempera painting again a matter of discussion, but apparently Jawlensky did not follow Stuck's method of painting with *Syntonosfarben*, a commercial tempera produced by Wilhelm Beckmann. This was a preparation of water, gum Arabic, linseed oil, glycerine, wax, suet and green soap [15, p. 2]. The circle around Giselastraße 23 preferred their own experiments in Jawlensky's laboratory-atelier. It is not known exactly how Jawlensky participated in these experiments, but a notebook bequeathed by Kandinsky, dating from March to June 1900, lists 17 different tempera recipes written down in this laboratory [16, p. 115]. All of these recipes form emulsions and contain egg yolk as the emulsifier, together with water-soluble ingredients, such as casein or gum Arabic and non-water-soluble components, such as wax or mastic. A second group of recipes is also of great interest: These non-water-soluble lacquers are not denoted as tempera but as binding or painting media, and were presumably meant to modify oil tube paints with respect to drying time and optical appearance [16, pp. 102–104, 115–118].

Jawlensky seems to have had difficulties with the tempera medium. In April 1899 Grabar wrote that Jawlensky could not succeed in controlling the tempera technique and claimed to paint, again, in oil [17, p. 43]⁷. However, this apparently was not Jawlensky's final decision: Hahl-Fontaine published letters from Jawlensky to Kardowsky dating from 1900 to 1903 with new information on Jawlensky's ongoing occupation with tempera [18, pp. 43–53]. In 1900, Jawlensky mentions that he, like many others, is working mainly in tempera. He purchased commercial tempera from the Berlin manufacturer Haas & Brand, which he finds worse in quality than 'our own' tempera paints, and he hopes to receive a better sort from Dresden⁸.

In another letter of 1901, Jawlensky mentioned a tempera recipe from Weidlich, a Russian painter and pupil of Ažbe and Stuck, a mixture of equal parts of floor polish wax, mastic, boiled linseed oil and turpentine⁹. Here his use of the term 'tempera' is contradictory, because the mixture does not give an emulsion and, furthermore, was to be used as a painting medium to be added to manufactured oil paint. Jawlensky recommended blending oil paints with this mixture directly on the palette with a palette knife and praises its wonderful, matt surface and the fact that the paints did not mix with each other when painting. He claimed to be dissatisfied with his own experiments to prepare painting media (apparently after Weidlich's recipe) because his paints did not dry within 24 hours. Jawlensky therefore announced he would work again in oil, but that he would not give up the search. In the same letter Jawlensky describes a second tempera recipe, this time an emulsion recommended by Grabar, a mixture of egg, beeswax, turpentine, linseed oil, honey and creosote¹⁰.

To summarize the written records, Jawlensky seems to have applied quite a wide range of different media, at least between c.1900 and 1903. He painted with commercial tempera paints, home-made tempera and painting media mixtures, but apparently continued to use oil paints as well.

⁷ A letter by Grabar to Kardowsky dated 17 April 1899 states: "Aber jetzt kommt eine Sensation. Jawlensky hat immer gestöhnt und gestöhnt, konnte der Temperatechnik einfach nicht Herr werden, — kommt er eines Morgens und verkündet, er werde jetzt in Öl malen . . ."

⁸ A known Dresden paint manufacturer is the company Neisch & Co., which produced egg-tempera [13, p. 304].

⁹ A similar recipe by Weidlich is mentioned again in a letter dating around 1903, this time with different proportions of the ingredients and not explicitly described as 'tempera' [18, p. 51].

¹⁰ A distillation product of beech wood tar.

Visually, the majority of paints on Jawlensky's paintings seem to have the usual consistency and gloss of oil paint, Fig. 7. Some unvarnished paintings, however, show areas with a matt appearance, sometimes waxy, and with often a thinner, more creamy consistency to the paint, which may indicate the partial application of tempera or mixed media, Fig. 6. Paints of this consistency were found on at least three paintings dating from 1906, 1908–1909 and 1913.

In comparison, the Murnau studies of Kandinsky and Münter show similar surface paint characteristics, the result of presumably varying binding and painting media compositions. Binding media analysis of the 'Munich palette' of Kandinsky, dating from 1910–1911, has confirmed different admixtures of wax, oils, resins, egg yolk and gums, with different formulation for each colour¹¹. According to the authors, the results can be interpreted as home-made mixtures and modified tube paints [16, pp. 118–124]. Binding media analysis by GC-MS and amino acid analysis of some of Jawlensky's works yet to be reported, will add further information to this picture.

CONCLUSION

Jawlenskys paintings from the Munich years between c.1902 and 1913 reveal some constant elements, such as the use of sized cardboard as a support, or a preference for dark contour edges, but also a number of significant changes in his painting technique and pigment choice, which may contribute to chronological attributions. Certain conservation problems, such as a noticeable paint layer separation, seem to be a direct consequence of the materials used for sizing. The exchange between Jawlensky and his artist friends did not only concern artistic ideas but, to a remarkable extent, matters of technique and materials as well. This shared interest is confirmed by written sources documenting their practical experiments, studies and experience, but is also visible in the artists' works. This is especially evident for paintings by Jawlensky, Kandinsky and Münter from their summer visits to Murnau between 1908 and 1910, which show clear technical parallels.

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¹¹ Analysis carried out at the Doerner Institute by Johann Koller, Ursula Baumer and Irene Fiedler.