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Paul Gauguin's Paintings on Paper: Infrared Investigations and Their Implications for Three Works from the Art Institute of Chicago Collection

ABSTRACT

In 2002 the Art Institute of Chicago received forty-one works on paper by Paul Gauguin representing imagery from Gauguin's life in the South Pacific. A recent examination and conservation campaign included infrared reflectography (IRR) study of a watercolor sketch, *Tahitian Hut,* and two finished works in watercolor and gouache, *Tahitian Landscape: Design for a Fan* and *Eve*. In each work media beneath the surface were observed under magnification prior to carrying out IRR examination. Information in the IRR images varies in character and generates different interpretations and conclusions about the making of each piece. IRR revealed a cursory sketch for *Tahitian Hut*, a detailed preliminary drawing for *Tahitian Landscape: Design for a Fan*, and a stylistic modification in *Eve* linking the work to representations of the artist's mother. For each work, the infrared reflectographs provide clear images of either preliminary sketches or the earliest painting stages. IRR discoveries inform authenticity, chronology, Gauguin's working methods, artwork function, visual interpretation, and the relationships of these works to others in Gauguin's oeuvre.

INTRODUCTION

In 1891 Paul Gauguin embarked on the first of two voyages to Tahiti in search of cultural purity he found lacking in modern France. His second voyage, begun in 1895, ended with his death in November 1903 on the island of Hiva Oa in the Marquesas. To commemorate the one hundred-year anniversary of Gauguin's death, Edward McCormick Blair gave the Art Institute of Chicago forty-one Gauguin works on paper. This generous gift included five watercolor and gouache paintings, seven drawings, six monotypes, twenty woodcuts, and three zincographs representing imagery primarily from Gauguin's life in the South Pacific. Conservation of the forty-one works provided an opportunity for technical examination including infrared reflectography studies of three watercolor and gouache paintings: *Eve,* 1889–90 (fig. 1), *Tahitian Hut*, 1893–94 (fig. 2), and *Tahitian Landscape: Design for a Fan*, 1900–1903 (fig. 3).

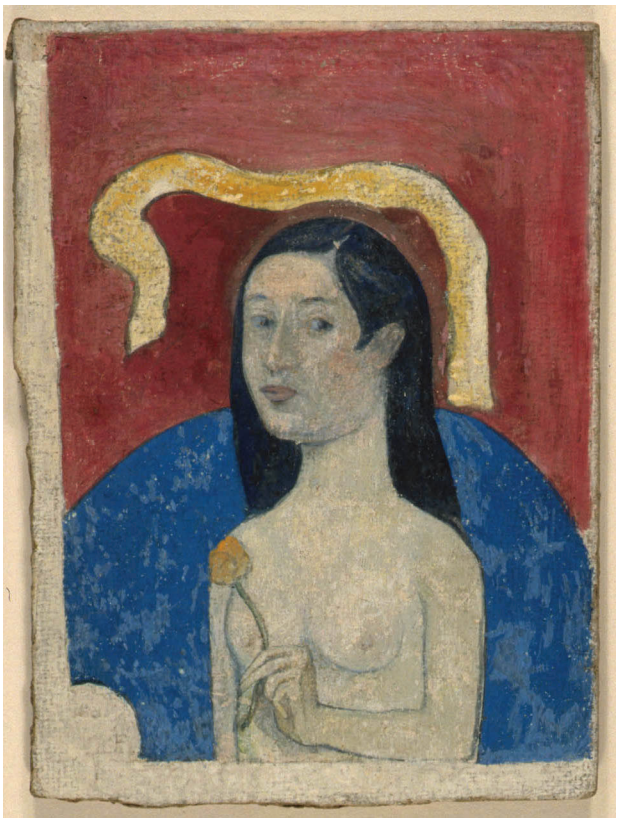

Fig. 1. Paul Gauguin, *Eve*, 1889–90. Gouache on millboard, 170 x 130 mm. The Art Institute of Chicago (2002.224).

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Fig. 2. Paul Gauguin, *Tahitian Hut*. Watercolor over graphite on tan wove paper, 165 x 245 mm. The Art Institute of Chicago (2002.226).

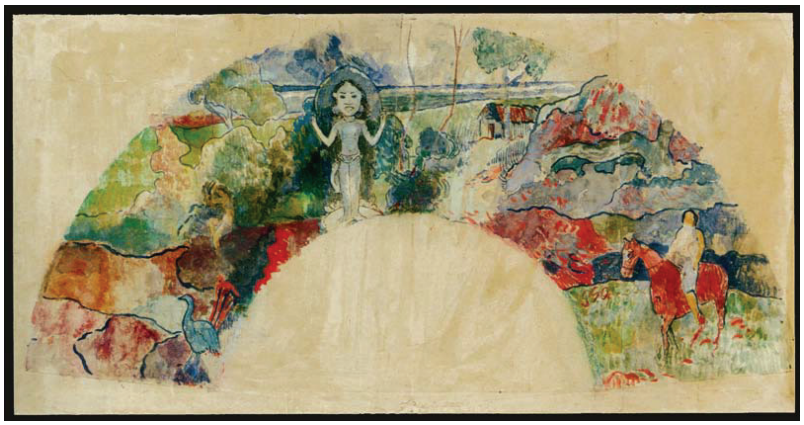

Fig. 3. Paul Gauguin, *Tahitian Landscape: Design for a Fan.* Gouache and watercolor over graphite on laid Japan paper, laid down on off-white wove paper, 208 x 417 mm. The Art Institute of Chicago (2002.225).

Media visible beneath the surface of each artwork indicated that infrared examination might be fruitful. Faint black lines seen to the left of center in *Eve* suggest underdrawing or changes from a previous design. Graphite lines visible under magnification indicate a sketch present beneath the watercolor washes in *Tahitian Hut*. Graphite outlines visible to the unaided eye in portions of *Tahitian Landscape*, such as the sky and clouds, hint at the presence of a complete compositional drawing. Indeed, the infrared images provide clear views of underdrawings and a preliminary painting stage last seen by Gauguin prior to completing his works. When the infrared images are compared with the finished works new conclusions may be drawn relating to authenticity, chronology, interpretation, Gauguin's working methods, and the relationship of these works to others in Gauguin's oeuvre.

TECHNICAL BACKGROUND

Infrared reflectography is most often considered a painting conservator's tool despite the fact that many artworks classified as drawings are truly paintings on paper and may be studied as such using similar technologies. In the past infrared studies have been carried out on a variety of works on paper with superior results. For example, underdrawings have been recorded in Indian miniatures (Real 1985) and illuminated manuscripts (Butler and van Asperen de Boer 1987). Despite these successes, infrared examination is rarely considered routine in paper conservation.

One reason may be cost. For years infrared equipment has been prohibitively expensive for many conservators in smaller institutions and private practice. Today, digital still cameras sensitive in the visible and near infrared range out to 1.1 microns are available for less than a thousand dollars, such as the Sony Cybershot F717. As prices for sophisticated equipment decrease, infrared examination becomes a realistic option for many more conservators. While this study was not conducted using a digital still camera, it is important to note new, less expensive equipment options.

The infrared camera employed for this study was an Inframetrics InfraCAM that has a platinum silicide detector with practical sensitivity from 1.1–2.5 microns. A filter was used to narrow the infrared range to 1.5–1.73 microns. Tests with different filters indicated that the watercolor and gouache layers appeared most transparent in this range, thereby optimizing underdrawing detection. The camera was connected to EPIX SVIP image capture software on a PC platform. Multiple frames were needed to record the entire surface of each artwork. Overall images were assembled from the individual frames using Adobe Photoshop. Two tungsten lamps with high infrared output illuminated the works. To protect the artworks from heat the lamps were placed at least eight feet away.

INFRARED STUDIES

In the years prior to his departure for Tahiti, Gauguin resided in Brittany where he painted a small gouache, *Eve*, on an irregular piece of gray, textured millboard, which he prepared with a white ground. Unfortunately its present condition is compromised. Poor adhesion between the dense gouache and the millboard has led to flaking. Microscopic examination reveals paint loss across the sur-

face. Retouching throughout, now discolored (particularly in the blue area to the lower left and right) betrays Gauguin's original surface. His subtle yellow and green flesh tone modulations are now barely perceptible, even with the aid of a microscope. Regrettably, retouching was carried out with an aqueous medium making it impossible to safely reverse.

Eve's compromised appearance has led scholars to doubt Gauguin's authorship despite formal similarities with contemporary and later works by Gauguin. Peter Zegers, Art Institute of Chicago Research Curator of Prints and Drawings, points to a precedent for Gauguin's two-color, curving background in the 1889 painting, *Self Portrait with Halo,* in the National Gallery of Art, Washington, D.C. A precedent for a waving banner is found in the 1890 polychrome wood relief, *Soyez Mysterious,* in the Musée d'Orsay. It was hoped infrared examination might yield clues to the gouache's appearance before deterioration and restoration and thereby inform the attribution question.

In the infrared image of *Eve* (fig. 4) retouching appears as dark marks in the face and arm. A curving line extends across the background suggesting an alternate position for the banner. By far the most significant revelation is the different hairstyle. Note the wavy contours, the highlights on the top and side of the head, and the hairline across the forehead indicated with discrete brushstrokes. These details recall Gauguin's depiction of his mother, Aline Gauguin, in an 1890 oil painting, *Portrait of the Artist's Mother* (fig. 5), in the Staatsgalerie, Stuttgart. The portrait is based on a photograph of Gauguin's mother showing the same hairstyle, now in a private collection.

Comparing the normal light and infrared images of *Eve* with *Portrait of Artist's Mother* clearly illustrates that *Eve* was originally based on an image of Aline Gauguin. An examination report for the oil portrait indicates the two works originally appeared even more similar. Painting conservator Christine Lister examined the painting and observed a red background through cracks in the yellow paint. Hints of red paint are still visible in the upper right.

Re-creations of preliminary states of each work (fig. 6) made using Adobe Photoshop underscore the similarities. *Eve* is depicted with the earlier hairstyle, and *Portrait of the Artist's Mother* with the former red background. Side by side comparison strongly suggests Gauguin based the small gouache on his oil portrait of his mother. Incorporating a curved background division and a floating banner, Gauguin transformed his mother into Eve. This connection allows a general date of 1889–90 to be assigned to *Eve,* since the same date is widely accepted for the related oil.

Fig. 4. *Eve.* Infrared reflectograph composite, 1.5–1.73 microns.

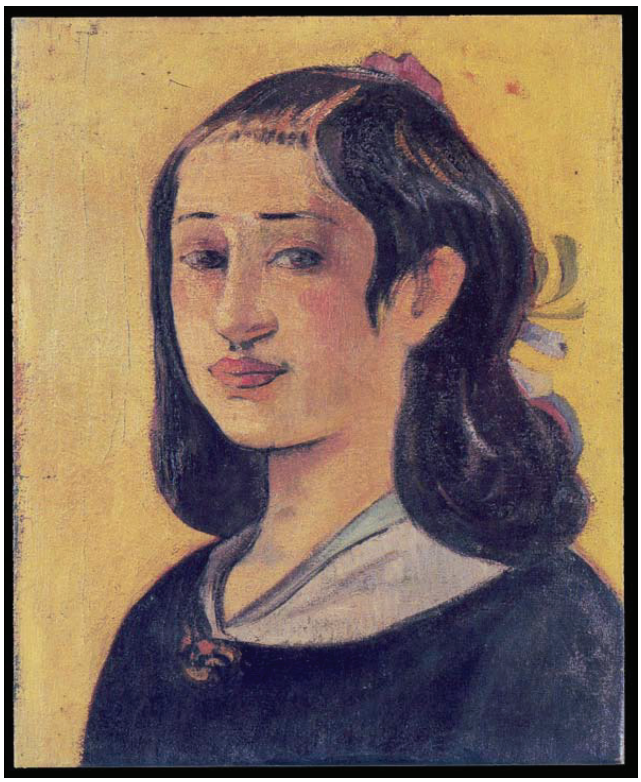

Fig. 5. Paul Gauguin, *Portrait of the Artist's Mother*. Oil on canvas, 41 x 33 cm. Staatsgalerie, Stuttgart (W 385).

Fig. 6. Recreation of earlier states for *Eve* and *Portrait of the Artist's Mother*

The question remains whether it was Gauguin who altered the hairstyle in the gouache. Ultraviolet light examination is inconclusive. It reveals patterns of retouching that do not correspond with changes to the hair, indicating the compositional adjustments were made earlier, before restoration.

Comparing related works shows that over time Gauguin's Eve-type figures evolved away from the prototype based on his mother. In another painting also dated to 1890 (fig. 7), location unknown, Gauguin again based Eve's head on his mother's image, but he adopted her pose from photographs of archaeological statues in Borobudur. Later, during his Tahitian periods, Gauguin further transformed the Eve figure with a South Pacific physiognomy in works such as the 1894 watercolor monotype, *Te Nave Nave Fenua,* in the Museum of Fine Arts, Boston. In a three-color woodcut of the same title and date in the Art Institute of Chicago (fig. 8), Gauguin's off-register ink layers produce an abstract and anonymous figure. Perhaps after moving away from an Eve-type based on his mother, Gauguin revisited the gouache and transformed the figure into a more generalized Eve, biblical mother of all. It may never be definitively determined who carried out the changes, but infrared evidence proves Gauguin originally painted *Eve*.

Gauguin departed from Marseille on April 1, 1891, and arrived in Tahiti in mid-May. During the first five months of his two-year visit Gauguin only produced drawings. He wrote home to a friend, Daniel de Monfried, "I am working harder and harder, but so far only on studies, or rather, 'documents,' which are piling up" (Joly-Segalen 1950, III). It was through sketching from life that Gauguin, like an anthropologist, observed and strove to understand the Tahitian culture. These "documents," as he called them, would also serve him later as source material for paintings.

One such "document" produced between 1891 and 1892 is *Tahitian Hut* executed in watercolor over graphite on wove paper. In the watercolor study Gauguin did not clearly render the structure of the hut. Instead he emphasized its organic nature by representing it merging with the surrounding foliage. This type of "document" could have served as a model for the indigenous dwellings that appear frequently in Gauguin's paintings from both South Pacific voyages such as an 1896 canvas, *Why Are You Angry?,* in the Art Institute of Chicago.

Fig. 7. Paul Gauguin, *Eve Exotique,* 1890. Gouache (est.) on millboard transferred to fabric. Location unknown.

Fig. 8. Paul Gauguin, *Te Nave Nave Fenua,* 1893–94. Woodcut printed in black ink, over ochre, over yellow, with red ink on ivory Japanese paper.

Some scholars have doubted this drawing's authenticity, generally claiming the sheet lacks the visual character they perceive in autograph works. As was the case with *Eve*, it was hoped infrared examination might inform the true nature and function of this watercolor. With the exception of a few brushstrokes in the foliage, all watercolor became transparent under infrared light clearly revealing a preliminary sketch (fig. 9). Rather than a belabored study of forms, the sketch is visual shorthand—a few lines quickly dashed off to place the compositional elements before beginning to paint. Gauguin indicates a palm leaf with two parallel lines. He anchors the figure with a few brief strokes. A tangled squiggle signifies a banana leaf and a rapid zigzag the tree trunk. These dashes and scribbles have a spontaneous quality that counters any suggestion that this work is a copy or forgery. The meaning of certain marks such as the parallel dashes in the upper right is ambiguous even when compared with the finished work. Only someone drawing from life could have understood their meaning. Looking at the initial sketch in the infrared image one can imagine Gauguin happening upon someone sitting outside a hut and rapidly capturing the scene on paper.

During the last years of his life, between 1900 and 1903, Gauguin painted *Tahitian Landscape: Design for a Fan*, one of several fan-shaped works on paper he created throughout his career. Gauguin employed watercolor and gouache over graphite on a support he prepared by pasting three sheets of Japanese paper to a single sheet of wove, Western paper.[1] His adhesive has darkened, causing irregular discoloration in the background.

The composition derives directly from Gauguin's masterpiece, *Where do we come from? What are we? Where are we going?* in the Museum of Fine Arts, Boston. In this monumental painting Gauguin combined themes from Tahitian and Judeo-Christian mythologies in a local landscape. Gauguin assembled the figures and animals from eight earlier paintings, which in turn were stylistically based on photographs Gauguin owned of statuary in Borobudur. Here Gauguin uses the fan shape on a diminutive scale to revisit his life's masterpiece in an intimate and decorative rendering. He eliminates all figures from the previous version except for a small yellow bather seated on a riverbank to the left of center. He introduces a man on horseback and a bird into the landscape dominated by a statue of Hina, the Tahitian goddess of regeneration. Gauguin described the landscape in another letter to Daniel de Monfried, referring to the Boston painting but relevant here as well, "It is all on the bank of a river in the woods.

Fig. 9. *Tahitian Hut.* Infrared reflectograph composite, 1.5–1.73 microns.

Fig. 10. *Tahitian Landscape: Design for a Fan.* Infrared reflectograph composite, 1.5–1.73 microns.

In the background, the ocean, then the mountains of a neighboring island" (Gauguin 1992, 62).

In the infrared image (fig. 10) most watercolor and gouache appears transparent revealing an extensive, detailed preliminary graphite drawing. Unlike the spontaneous underdrawing seen in *Tahitian Hut* this design was deliberately planned and carefully executed. Aside from working out the top of the statue and the position of the horse legs directly on the sheet, Gauguin rarely strayed from his intended forms. The underdrawing of the large tree on the right (fig. 11) shows how closely Gauguin followed the graphite outlines with his brush and blue watercolor. The underdrawing also indicates the shadow lying across the long branch, the boundary where the foliage meets the ground, and a cluster of what are probably leaves, executed in red gouache. Underdrawing in the lower left (fig. 12) illustrates how Gauguin planned the seemingly random transitions from one color to the next in advance. Graphite lines map the boundary between the mauve patch and the lavender wash. Farther left a delicate curved line delineates a discrete patch of warm gray. Such forethought indicates representational intent for this otherwise abstract passage.

It is interesting to consider the underdrawing as a transitional phase between the Boston painting and *Tahitian Landscape*. Scholars have interpreted the fan-shaped landscape as a secularized version of Boston's painting. This interpretation is supported by evidence in the underdrawing, which clearly shows circles in the tree to the right of Hina (fig. 11) indicating Gauguin originally conceived it as a fruit tree. Although set in the background this tree is in the same relative position as the foreground figure picking fruit in the Boston painting. The reference to Eden is clear. Gauguin even wrote on the subject years earlier in another letter to Monfried describing his 1896 painting, *The Noble Woman*, in the Pushkin Museum. Gauguin writes, "A naked queen reclining on a carpet of green, A female servant gathering fruit, two old men, near the big tree, discussing the Tree of Knowledge" (Joly-Segalen 1950, XXI). This detail in the underdrawing betrays Gauguin's decision, late in the production process, to exclude fruit from the tree, thus eliminating any reference to the Edenic Tree of Knowledge and the Judeo-Christian tradition in general.

CONCLUDING REMARKS

Infrared reflectography discoveries have enriched the scholarship for *Eve*, *Tahitian Hut,* and *Tahitian Landscape.* They illuminated Gauguin's working methods and the

Fig. 11. *Tahitian Landscape: Design for a Fan,* detail of right side. Infrared reflectograph composite, 1.5 – 1.73 microns.

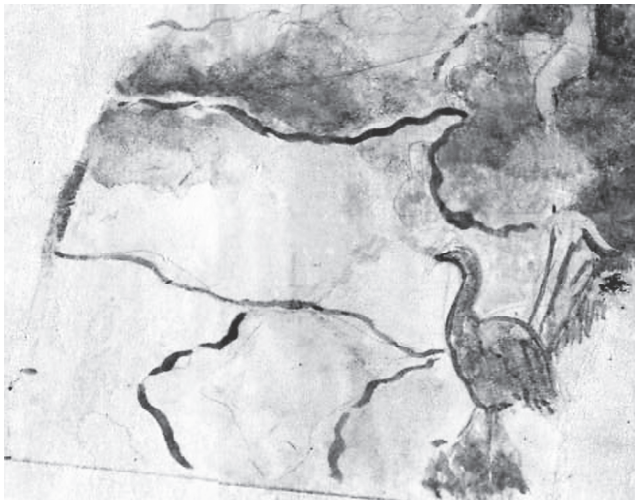

Fig. 12. *Tahitian Landscape: Design for a Fan,* detail of lower left side. Infrared reflectograph composite, 1.5 – 1.73 microns.

relationships between his works on paper and paintings. Viewing the preliminary states familiarized us with Gauguin's strategies when modeling one artwork after another, as in *Eve* and *Tahitian Landscape*. Information gleaned helped place *Eve* chronologically in Gauguin's oeuvre and definitively settle attribution debates for *Eve* and *Tahitian Hut*. It is hoped that these studies will motivate further infrared investigations of works on paper—for hidden beneath their surfaces, there is a wealth of information waiting to be revealed.

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NOTE

1. The material used to adhere the Japanese paper to the Western paper was analyzed non-destructively and in-situ by FTIR spectrophotometry. A micro-ATR (attenuated total reflection) objective with a germanium crystal was used to probe the surface in an area where a build-up of product was evident. The material was identified as a gum of vegetable origin. Although it was not possible to precisely match the spectrum with available references, the use of the most common gums such as gum tragacanth or gum arabic can be excluded with certainty.

REFERENCES

Butler, Marigene H., and J. R. J. van Asperen de Boer. 1987. The examination of the Milan-Turin Hours with infrared reflectography: A preliminary report. *Le Dessin Sous-Jacent Dans La Pienture Colloque VII: 17–19.*

Gauguin, Paul. 1992. *Gauguin's letters from the South Seas*. Trans. Ruth Pielkovo. New York: Dover.

Joly-Segalen, A., ed. 1950. *Lettres de Paul Gauguin à Georges-Daniel de Monfried*. Paris: Plon.

Real, William A. 1985. Infrared reflectography at the Cleveland Museum of Art: Paintings, objects, manuscripts. *AIC preprints,* 13th Annual Meeting, Washington. Washington, D.C.: American Institute for Conservation.

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