AIC PAINTINGS
SPECIALTY GROUP
POSTPRINTS

Papers Presented at the Thirty-sixth Annual Meeting
of the American Institute for Conservation of Historic & Artistic Works
Denver, Colorado
April 21-24, 2008

Compiled by Helen Mar Parkin
Volume 21
2009

The American Institute for Conservation of Historic & Artistic Works
# TABLE OF CONTENTS

## Paintings Sessions

- **Surface Tension: Technique, Process and Detail in Jasper Johns’ Gray Paintings** ............................................. 1  
  Kelly Keegan, with contributions by Kristin Lister

- **Minimum Intervention in the Structural Repair of Canvas Paintings: When is Enough, Enough? (abstract)** ........... 13  
  Diane Falvey

- **Clyfford Still: Revealing the Secrets of a Life’s Work** ......................................................................................... 14  
  Barbara A. Ramsay

- **Rescue Public Murals and Conservator-Artist Collaborations** ............................................................................... 27  
  Kristen Laise and Leslie Rainer

- **Wall to Wall: Conservation of a Joan Miró Mural at the Cincinnati Art Museum** ........................................... 33  
  Frederick Wallace, Per Knutas, and Stephen Bonadies

- **Restoring John LaFarge’s Mural Decorations in the Tower of Trinity Church in the city of Boston** .................... 40  
  Mary Catherine Betz, Gianfranco Pocobene, and Kate Smith

- **'A Puzzle to the Critics': The Technical Analysis and Treatment of a 16th Century Panel Painting of Possible French Origin** ............................................. 46  
  Morwenna Blewett

- **Accounting for Taste: Retaining an Historic Restoration from a Sienese Accounts Book Cover** ...................... 52  
  Eowyn Kerr

- **The Representation of Brocaded Silks and Velvets in 15th and Early 16th Century Netherlandish Paintings: Methods and Materials** ......................................................................................... 61  
  Bart J.C. Devolder

- **Raising Public Awareness: Creating an Educational Interface Between Conservators and the Public** .............. 75  
  Julie Heath

- **Conservation of a Jean Charlot Fresco Using Cyclododecane** ............................................................................. 77  
  Victoria Montana Ryan

- **Ten Years of Treating Russian Icons from the Aleutian and Pribilof Islands** .................................................. 83  
  Cynthia Lawrence

- **Van Gogh’s Ravine: The Underlying Story** ............................................................................................................ 89  
  Meta Chavannes

- **The Art of Arte Povera** ........................................................................................................................................... 99  
  Paula De Cristofaro

- **Clues in the Cracks: Analysis of a Colonial South American St. Michael** ......................................................... 110  
  Joseph G. Barabe and Carol A. Injerd

## Studio Tips

- **A New Method of “Insert” or “Cami” Lining** ........................................................................................................... 115  
  Rustin Levenson

- **A Sewing Supply Catalogue** ..................................................................................................................................... 115  
  Randy Ash

- **Use of Coroplast to Improve Skylights** ................................................................................................................... 116  
  Dennis K. Calabi
ABSTRACT – Close examination of Jasper Johns’ recent Near the Lagoon (2002-3) reveals a delicate balance of purpose and circumstance through which the artist achieves distinctive visual effects. The artist’s careful manipulation of the encaustic medium; integration of print-making processes in his paintings; incorporation of artist, commercial, and found materials; use of familiar subject matter; and development of Johnsian “devices” have evolved over the course of his career. Using a selection of paintings from the Jasper Johns: Gray exhibition, Johns’ techniques, materials, including pigment and media analysis, and the individual print-making processes, particularly screen-printing, are identified and described.

With a career spanning more than 50 years, Jasper Johns has brought ingenuity to classical materials and everyday subject matter. The Jasper Johns: Gray exhibit aimed to examine a number of Johns’ mostly grisailles paintings, prints, and sculptures over the course of his career in an attempt to see what traits emerge from this group of works when one of the major variables, color, is relatively constant. Many of the works featured in the show are called “gray encaustic collage paintings.” When carefully considered, however, these descriptive words fail to clearly define Johns’ methods. A distant incarnation of the collage tradition established by Picasso and Braque, Johns’ collage elements often involved embedded materials which have been said to function more like paint additives, adding to the texture of the work rather than functioning as a distinct compositional element (Orton 1994, 114; Fig. 1). Additionally, can wax-based paint with added oil and varnish really be called “encaustic” in the classical sense? The artist’s works constantly call these accepted terms into question. Writing in 1994 about Johns’ 1955 Flag, a brightly colored encaustic collage painting with embedded newspaper, art historian Fred Orton remarked (115-6), “Whatever Flag’s technique is, it is and is not ‘collage.’ … it is and is not ‘painting.’ Which is to say that Flag makes sense – albeit an uncertain sense – if we understand it as made of something that is neither collage nor painting but simultaneously both collage and painting”. Closely examining many of Johns’ paintings, it is also clear his “gray” paintings are often not just gray at all.

The complex understanding of Johns’ materials, ideas of what his works are and are not, no doubt hold interest for the artist in whose work such ambiguity seems a prime objective. The initial premise for a technical essay for the Gray exhibition catalogue was to consider two encaustic paintings, executed about 45 years apart, with similar construction and materials in an effort to determine how Johns’ technique has changed over time. In studying Johns’ paintings it becomes clear the artist has a deep understanding of process and material, and consistently uses this knowledge to push the boundaries of various media and techniques. Through the use of gray, Johns urges the viewer to concentrate on other aspects of the painting, forcing the materiality, physicality, and sensuality of his carefully worked paintings to the surface.

Kelly Keegan
Special Projects Assistant Conservator of Paintings
Art Institute of Chicago
kkeegan@artic.edu

Fig. 1. Embedded newspaper in Jasper Johns Gray Alphabets, 1956. Encaustic and collage on canvas. Detail. The Menil Collection, Houston. All photos by Kelly Keegan.
Johns explained this specific use of materials in a 1969 interview, saying, “I used gray encaustic to avoid the color situation. The encaustic paintings were done in gray because to me this suggested a kind of literal quality that was unmoved or unmovable by coloration and thus avoided all the emotional and dramatic quality of color. Black and white is very leading. It tells you what to say or do. The gray encaustic paintings seemed to me to allow the literal qualities of the painting to predominate over any of the others.” (Young, 51).

To very briefly summarize the initial findings, the two paintings in question were *Tennyson*, from 1958 at the Des Moines Art Center, and the Art Institute’s *Near the Lagoon*, from 2002-3 (Figs. 2, 3). Both large, rectangular paintings featured gray encaustic over a primary-colored structure of added pieces of canvas collaged onto the surface. They both concern more esoteric subject matter, obviously connected to emotion, and therefore separated from his familiar flags, targets, and maps, among others. *Tennyson* reveals an artist at the beginning of his career, working diligently to make it “right” (Kluver 1963, in *Writings* 1996).

In the 60s, Johns attributed his manner of working in discrete “unartful” operations to the influence of printmaking, which he did not take up until 1960 (Sylvester 1965, in *Writings* 1996, XXX); however this process of individual steps is already evident in *Tennyson*. Pulling an additional loose canvas up over two individually stretched support canvases, Johns created a structure roughly resembling a bed, passing the cloth over a dowel at about shoulder height and pulling the excess down, toward himself and the viewer. The canvas is attached primarily with unpigmented wax, and the wide strokes bleed through on the verso. The structure was painted blue on the visible areas of the support canvases and the outward, or visible side of the folded top-sheet, while the lower layer of this sheet was painted mostly red, seen now as a small margin along the sides. The vibrant red seems to pass underneath the fold, adding to ideas of hidden surfaces and secrecy in the work. Bright yellow was used for the hand wrought letters near the bottom, below which Johns left an unpainted margin of bare, unprimed canvas. As this boldly colored arrangement seemed to emphasize the individual geometry, Johns covered the entire structure with gray encaustic, a solution first used in his 1957 *Gray Rectangles*. The artist employed the same ideas of collaged canvas and primary colored underpainting in *Near the Lagoon*. 
Near the Lagoon is the largest and most symmetrical of a 19 painting series of predominantly gray works based on the concept of the catenary, or the curve theoretically assumed by a flexible cord hanging freely from two fixed points. This is represented by the cord hanging freely in front of the painting, and while this cord is held at two points, it is not fixed as both the string and the wings to which it is attached can be moved. Johns remarked on the possibility of change, saying, “It’s important that one sees the instability of what one is looking at – that it can be changed. I like that you’re aware of other possibilities, whether you choose to set them in motion or not” (Rothkopf 2005, 9-10).

The main body of the work consists of a large vertical rectangular support canvas onto which four additional pieces of canvas are attached. The collage elements are based on the salvaged Edouard Manet’s The Execution of Emperor Maximilian (1867-8) once cut up and sold individually, and reassembled by Edgar Degas on a new piece of canvas with blank canvas to stand for missing sections of the original. For Near the Lagoon, Johns planned to mount blank pieces of canvas corresponding to Manet’s fragments onto a canvas slightly larger than the original, faithfully preserving the proportions and turning the composition vertically.

1. NEAR THE LAGOON: CONSTRUCTION AND TECHNIQUE

Before stretching, the canvas was first coated with a layer of unpigmented wax followed by a muted, earthy red, functioning as a colored ground, visible on the reverse, and identified as iron oxide red mixed with titanium white. The four patches corresponding to Manet’s fragments are of the same linen and are painted the same muted red. Johns’ assistant James Meyer, who has worked with Johns for about 20 years, roughly marked the fragments’ outlines on the reverse and the center line in black and ruled off the enclosed area with an extensive 5-inch grid in blue crayon. Unlike Tennyson where unpigmented wax is the primary method of attachment for the collage canvas, the red fragments here were then systematically tacked by Meyer to the support with a knotted stitch of waxed linen thread at each interval where the grid lines intersected, adding extra knots periodically at the edges (Meyer 2008).

About the next step in the process, Johns said recently, “Thinking of my work and its reference to Degas’ attempt to reassemble Manet’s painting, I divided the surface into three categories – my canvas, the ground provided by Degas to contain the Manet fragments, and the Manet fragments themselves. I indicated each of the three categories with a subdued primary color, a sort of underpainting as you say. I sought to distinguish these three things, one from the other, as a beginning” (Rosenthal 2007, 159). Red, the most prominent underpainted color in Near the Lagoon, is the only primary color largely unseen in Degas’s reconstruction, as the actual execution where one would expect to find red is missing. As the artist stated, he then distinguished the thing that isn’t,
painting the blank spaces corresponding to discolored yellow canvas in Degas’ reconstruction with a mix of yellow ochre and titanium white, with thick strokes extending over the edges resembling scar tissue (Fig. 4) and recalling Johns’ 1964 link between encaustic and flesh in his sketchbook (Writings 1996, 56). Representing his own canvas and to enclose the whole, Johns constructed an uneven blue border of ultramarine.

The two remaining parts of the construction are the hinged wooden side wings (one on the left and two on the right), and the white cord that hangs down in a curve in front of the painting (the catenary), looping up through a hole in the top of each outer wing, with the ends dangling down to the bottom behind the wings. With his catenary curve, Johns discovered a new “device”—a tool that creates a particular shape and can be imprinted into the soft encaustic paint. Here, he suspended a cord from tacks in the top two corners of the canvas, allowing it to drape down naturally, impressed the cord into the paint and layered strokes of gray encaustic over it. Once set, he pulled it out of its groove, leaving broken edges and pulling up paint from beneath (Fig. 5). He repeated the process two or three times in some places, additionally cutting back into the groove with a heated tool or brush, painting additional strokes in gray or more saturated versions of the underpainting colors, and accomplishing a great level of intricacy in a compact space.

1.1 NEAR THE LAGOON: ENCAUSTIC TECHNIQUE AND MARK-MAKING

Looking at the complexity of mark-making in Near the Lagoon, questions arose about Johns’ encaustic technique and recipe, which has been written about extensively. Studio images of Johns, often show the artist with a small rolling cart, easily maneuverable before a large painting, packed with materials including a small hot plate, a heat gun, a can of brushes, and a crowded array of metal pots of paint, each color individually mixed to be heated and reheated as needed. The individual nature of each color mixture is evident in the layer structure and analysis of the paint. Since his 1955 Flag, encaustic has been a medium often favored by Johns, as it preserves the nature of the brushstroke and dries quickly, allowing for multiple paint layers in a single session without smearing. Johns has often been elusive about the origins of his medium and recipe, unaware of Frances Pratt and Becca Fizell’s 1949 book on encaustic technique and denying any link to Ralph Mayer (Stavitzky 2000, endnote 64, p. 58). Johns said in a 1984, “I simply use oil paints – you can use pigments but I use oil paint since the wax medium has it anyway. I make a mixture of beeswax, dammar (a gum – it can be a varnish) and linseed oil and color. I usually have separate pots of what I’m working with. It dries very quickly, almost instantly” (Field 1984, 113-4).

Originally, Johns purchased his tube oils and wax from Fezandie and Sperrle near his Pearl Street loft in New York, and later moved to mixing raw materials (gum dammar, linseed oil) with dry pigments (Stavitzky 2000, 23). Media analysis of Near the Lagoon revealed the predominant binding medium to be bleached beeswax with, for the most part, no detectable additives. Samples of the blue border, yellow and red underpaint, and various grays all analyzed with FTIR showed bleached beeswax as the main component; any oil or resin would be below the detection limit of approximately 5%. To put this in perspective most published recipes recommend approximately 10% oil, and up to 50% dammar. These findings represent a departure from published recipes, previous interviews with Johns, and his earlier methods, but was recently confirmed by his studio assistant James Meyer who said “the problem with oil is that the wax encloses the oil and it never really dries” (Meyer 2008). According to Meyer, Johns abandoned adding oil to his mixture rather early on and now makes paint by brushing pigment into melted wax and thinning with turpentine, and they get most of their pigments from David Davis in New York. The artist makes paint as he uses it rather than pre-making small cakes of paint, mixing colors in small metal pans over a hot plate with a thermostat. The colors and pots are reused throughout each painting and cleaned once the project is finished. The result is a physically softer and more pliable paint surface that is more easy to manipulate artistically, and also easily takes the marks of its environment. Johns’s method seems to have simplified over the years, as the artist stripped the medium of its additives, discarding ready-made materials in favor of a more purist, classical technique. Looking closely at the surface of Near the Lagoon, it is clear the paint has softened into the canvas weave; it’s important to note this was not the result of rolling, as Meyer recalled he and Johns felt the construction of the painting would not withstand this method of transport.

With the new softness of his paint, Johns could further play with various surface effects, employing a number of different tools and devices to achieve his means. In addition to a number of small dabs of paint in various colors and naturally occurring drips, the artist also created straight indentations in the work by impressing a hot tool into the surface along a straight edge, or in the case of the horizontal indentations seen in the central fragment of Near the
Lagoon, apparently pressed a straight edge into the paint. These recall similar indentations in Tennyson, giving a sculptural quality to the wide central expanse of the work and, when lit from above, have greater presence, countering the downward motion of the paint strokes. Elsewhere, in an apparent parody of the silk-screening process seen in his earlier works, Johns pressed a paint-covered coarse hardware screen onto the surface creating a mark resembling a footprint or tire tread (Fig. 6). In another contact, a piece of fabric was pushed into the surface, leaving its wrinkled impression as if the artist had leaned up against the piece with his shoulder (Fig. 5).

Johns use of impressed rings is common throughout his work, moving into his regular repertoire of images in the crosshatch pictures of the 1970s. Two such rings are found on Near the Lagoon: the first (a full circle with a partial circle offset by 2 cm) crosses the seam between the bottom fragment and the “blank” canvas at the right edge (Fig. 7); and the second (a partial circle, slightly smaller) a little farther down, across the hinged double-paneled wing on the right. Both rings were reinforced at least twice, at times slightly offset or with additional painted elements added between passes. On the wing where the paint was too thin to take an impression, it appears Johns covered the top of the can or jar with a dark brown substance. Interestingly, where the ring continues onto the adjacent wing, Johns has created an illusion, taking a heated tool or a brush dipped in solvent to continue to curve.

In addition to sprayed and natural freehand drips, which, like the rings, cross borders throughout the work, Johns also executed long, straight “drips,” likely created by running a thin, warm bead of encaustic down a straight edge. Often Johns would combine this with the indentations created by a hot tool, alternating them along the same line to create colored indentations similar to the reworked impressions of the catenary cord. Tennyson reveals the earlier incarnations of these naturally occurring and artist-fabricated drips. Those tied to the natural process tend to be left as evidence of his work, while others—the perfectly straight and even drips—tend to move generally less exactly in the vertical direction. Responding to a question regarding similar paint application in the 1964 According to What, Johns said “it’s applied with air -- with spray. I think this is the first painting I let the drips go sideways – I turned the painting to let this happen” (Coplans 1972, 31).
In another attempt to break up various sections of homogenous, melted, glossy former brushstrokes, Johns employed a small instrument—possibly a mezzotint rocker—to create a series of parallel striations, resembling the marks left by a brush. In some cases, the artist used single passes within a melted brushstroke and in other areas he varied the direction creating a kind of crosshatched patch that revealed the underpaint along the intersecting lines (Fig. 8). In speaking with Johns’ printer, John Lund, with whom Johns has worked exclusively since setting up his print shop in 1996, the use of this tool was called into question. Lund’s own printing tools are much finer, however after further discussion and an investigation of Johns’ studio, Lund recalled an Italian etching set Johns received as a gift, whose instruments were too coarse for traditional printing purposes, that fits the current profile of about 12-15 teeth on an instrument approximately a cm. wide (Lund 2008).

Looking at the painting in oblique light, one sees a semicircular sweep radiating from the upper left corner (upon further investigation a smaller echo can be seen at the right). In a compositional element recalling Johns “device circle” seen first in the 1961 *Good Time Charley*, Johns probably used a large squeegee to sweep across the soft paint, creating these subtle marks, like ripples on water (Fig. 9).

2. PRINTMAKING IN PAINTINGS

The use of such printmaking tools is not new in Johns’ work since the artist’s first forays into printing in 1960. These tools have been used both in the making, as with *Between the Clock and the Bed* and as a compositional element, seen here in 1963-4 *Field Painting*. In *Between the Clock and the Bed*, the Usuyuki screen-print is used in the upper right of the composition. Recalling this process, printer Hiroshi Kawanishi said, “It was printed onto canvas, using oil paint instead of ink. ... So he brought a big canvas ... it was already painted [leaving a blank space for the print] ...” (Lorence 1996, 45). Linked by common subject matter, the various ways of expressing a single idea interest Johns, “What interests me is the technical innovation possible for me in printmaking” (Young 1969, 52). Johns is well-known as an innovative printmaker, layering multiple plates, stones, or screens for a single image, and been described as making “paintings in print” (Goldman 1981, np). He has also, since the early 60s, used printmaking methods and instruments in his paintings. The restraints of various printmaking processes, the need to work in discreet steps, related to his ideas about encaustic painting. In 1980, Johns said: “And some of that feeds back into painting, because then you see, you find things which are necessary to printmaking that become interesting in themselves and can be used in painting where they’re not necessary but become like ideas. And in that way printmaking has affected my painting a lot ... Instead of smearing and slurring, you’re to take it in steps. And then, of course, the
other interest goes into printmaking. It becomes very playful, because then you would like to try in printmaking something that isn’t in its nature. That’s that quality with the screen-printing that I think I tend to do, which I don’t think is particularly appropriate.” (Martin 1992, 60).

2.1 SCREEN PIECE 3 (1963)

There are prints and there are paintings, and for Johns there are a number of works where, like Warhol, who introduced Johns to the technique in paintings, the artist makes use of screen-printed elements in his paintings (Field 1977, 1). In 1963, Johns created a number of Screen Pieces, number 3, a grissailles version, displays a number of printed elements (Fig. 10). Here Johns uses photo-screens of objects rather than the objects themselves as compositional elements. The spoon and fork, for example, were created after a photo-plate used for the lithograph from the painting Voice, which incorporated an actual spoon and fork dangling from a straightened coat hanger. Johns wrote instructions for the printer, that the fork should be seven inches long for the print, and therefore in proper scale. For the photo-screen in the Screen Pieces, Johns incorporated the instructions as part of the image, playing with the idea of scale, for the fork is actually 12 inches long (Bernstein 1996). In other areas, such as the twisted ruler at the upper right, Johns has slightly offset two screens used to print the object, a deliberate choice that serves to leave the printing process visible.

In the Screen Pieces Johns plays with the idea of screens and “screen-printing”, using different gage screens and various ways of impressing these patterns onto the surface, and this is echoed 40 years later in Near the Lagoon. Paint is pushed through the screen from behind, the screens are covered in paint and pressed onto the surface, or the surface is painted and the screen pushed into it. The result of using oil paint rather than encaustic is also visible, as the edges of these textural elements are soft with small ridges from the pick-up of these objects. This use of screens was first seen in the 1964 Studio, where Johns used the imprint of the screen door from his Edisto Beach studio; both the screen and the doorframe are visible (Bernstein 1996, 100).

In a new way of emphasizing the brush stroke via screen-printing, in many areas of the painting, Johns printed large swaths of open screen, resulting in a sea of uniform black dots which play off of and intensify the surface underneath. When combined with still soft oil-paint strokes, the result is that not only does the soft paint take the impression of the screen, but also the high points of the brush strokes are emphasized, not with light as would occur naturally, but with dark to produce a kind of photo-negative effect.
Based on a more colorful encaustic version of the same title and general composition created a year earlier and belonging to the Whitney Museum, the 1984 grissailles Racing Thoughts in the Meyerhoff collection is executed in oil and explores most prominently, the differences one can achieve creating the same painting in alternate palette and media (Fig. 13). Both paintings seem to play on ideas of adding and subtracting material from the surface, on layers and connection.

Oil takes longer to dry, and offers the artist a different set of tools: the option to blend smoothly, to squeeze paint from the tube onto the artwork. Specific to the way Johns himself seems to work and evidenced in various videos and photographs of him working, the way in which Johns considers each color is entirely dependent on the medium. Rather than an entire palette of ready colors available at once, as is common in traditional oil painting, images of Johns working with encaustic invariably show him painting from a single pan at a time, forcing the artist to consider the application of each color discreetly in various parts of the composition at once rather than considering individual areas at a time. The artist also seems to exploit the general “feel” of each medium by the changed palette: the brighter colors of the Whitney 1983 Racing Thoughts appear diffuse, having great depth and translucence intrinsic to the medium which prevents the work from looking garish. With the 1984 work, Johns’ choice of a more somber palette dominated by black and gray reinforces the heavier, more opaque nature of oil paint. Johns has found ways to manipulate the oil medium to suit his needs, altering the consistency and application of the paint to create a variety of textures, using stiff brushes to preserve the stroke; thinning the paint to a runny, translucent veil; stamping, brushing, rubbing paint on the surface; digging into the still wet paint to reveal the white priming beneath.

To summarize the most important basic elements of the composition: the general illusion centers around the idea that the viewer, or Johns himself, examines the wall from his bathtub at Stony Point, and both paintings are anchored by the tub fixtures and faucet at the lower right. The paintings are compositionally, not physically, divided in half, with the door on the left, the bathroom wall at the right. Tacked next to his beige-yellow, faintly striped pants hanging on the back of the door is a small portrait of Johns’ dealer, Leo Castelli, divided into puzzle pieces. At the right, on the supposed bathroom wall, the artist imagines a Mona Lisa print held up with masking tape at the top corners next to a large reproduction of the Barnett Newman 1961 Untitled lithograph.

Johns uses many ways of transferring the various images onto the canvas. On the door, the wood-grain pattern is meshed with a compositional device from Johns’ previous 1983 Untitled encaustic painting, an upside, abstracted tracing of a demon from the Temptation of St. Anthony panel of Matthias Grünewald’s Isenheim Altarpiece (Johnston 1987). The grained crossbeams and painted hinge near the center of the composition, as well as the slight illusionistic shadow effect of the background around these beams literalizes this idea of a two dimensional image projected onto a three dimensional object. Images of Johns working on Untitled show that he projected tracings of the Grünewald elements onto the canvas and traced them before applying paint; it is unclear whether he traced the entire composition before designating spaces for the printed elements, but the area behind the Castelli puzzle is not painted with this pattern. By contrast, the area behind the striped pants, visible due to the removal of paint and tooling of the “stripes,” is completely painted with both outlines and cross-hatched pattern. The hatches come up to the borders of the Castelli image, the background and edges of this rectangle were reinforced with white paint before the image was printed. The Castelli portrait (Fig. 14), superimposed with a puzzle pattern, is a halftone screened image, where the image is dissolved into a series of small dots, and here, evidence of the artist’s hand, or fingers, is seen on the right. Castelli is one of three screen-printed images on the work, in addition to the Mona Lisa and the Newman lithograph.
Seen as a compositional element in his 1968 *Numeral* series of lithographs, the Mona Lisa is a recurring image in Johns’ work, originating from an iron-on decal given to him in the 1960s (Young 1969, 53). In the first version of *Racing Thoughts*, this image was applied via a collaged fine-weave handkerchief-like cloth; the image was likely screened onto the cloth first, using two screens, one to apply the red and a second for the darker details. This would allow a certain amount of flexibility as the artist and printer only have a single chance to get it right. It is likely that once the image was screened onto the fabric satisfactorily, the artist then placed the cloth on the stretched canvas flat, and brushed unpigmented wax over it. Unlike the earlier version or the Castelli in this version, the Mona on the second *Racing Thoughts* appears to be printed right on the primed canvas; thick gray and black swaths of paint around the edges serves as a border to clean up the neighboring cross-hatches. Oil paint was used instead of ink here and was much thicker than that used for the fine detail of the Castelli, and displays an interesting pattern of paint ridges, drips, and smudges (Fig. 15). These ridges likely resulted from a heavy loading of the screen prior to squeegee-ing; flood-coating the screen more than once creates a build up of material on the screen, and the extra material can creep around the openings to generate a smudged effect. The screen may also have stuck to the surface slightly during printing resulting in characteristic peaks of paint from the lifting of this screen. The viscous nature of the paint/ink here enhances these effects.

While in the earlier *Racing Thoughts*, the Castelli portrait, Mona Lisa and the Newman lithograph are all photo-screen-prints. In the later version, Johns chose to paint a copy of the Newman lithograph by hand (Fig. 16). Running an almost dry brush across lightly across the surface, Johns covers only the tops of the weave created an effect akin to the small dots of reproduction and printing.

### 2.3 *BRIDGE* (1997)

To carry these methods into the recent catenary series, there is *Bridge*, 1997, the first of the series (Fig. 17). At the time of it’s creation, Johns was apparently unaware of the term, generally used in reference to suspension bridge construction. A Hart Crane poem of the same title, along with a poignant 1996 *National Geographic* photo on the wall in Johns’ studio of Rawandan refugees administering an interavenous drip, the line forming an asymmetric catenary, may lend a different meaning to the earliest incarnation of this theme, connecting it with the
diseased figures of Grünewald, visually quoted by Johns in the 80s (Rothkopf 2005). The discovery of the word catenary, according to Johns, led to a series rather than a single picture, in which various dimensions and the points of attachment of the catenary cord could be changed to produce different relationships (Wallach 1999).

To summarize the imagery, the diamond pattern at the right and the handkerchief may find precedents in Picasso, in his harlequin paintings and his weeping woman, respectively. The two representations of the galaxy refer to it’s vastness and, through the Big Dipper, man’s desire to simplify and map it (Rothkopf 2005). This difference, between an actual representation, or the “definable fact” of the galaxy and a human’s simplified form, was, according to John Lund, the likely influence for Johns’ decision to print the galaxy, creating a photo-screen from an image in a textbook, and hand-paint the constellation (Lund 2008).

Richard Field points out the “amusing ambiguity” of reproducing an image of small dots, or stars, in a process which breaks all images into a sea of small dots (Field 1999, 27).

In raking light, the motion of the screen-printing squeegee across the surface is visible, recalling the sweeping motion seen in Near the Lagoon (Fig. 18). It is also interesting to consider the printing of these elements on the canvas, the use of often several screens for a single image; in this case at least three different screens were used in a creamy off-white, black and white. John Lund recalls that for this painting, the galaxy was printed first, inside a small pencil outline indicating it’s placement. Johns’ assistant James Meyer recalls that for the most part these prints are executed on stretched canvas, unlike Usuyuki on Between the Clock and the Bed, where Johns was taking the recommendation of his printer at the time. More recently, Meyer and Lund build up a support underneath the painting in order to execute the screen-prints; thankfully, screen-printing is a technique not requiring a great deal of pressure. With Bridge, again the oil paint used as ink is rather thick and in some areas has taken the impression of the screen while in other areas are the same kinds of clotted drops seen in the Mona Lisa on the 1984 grissailles Racing Thoughts.
3. CONCLUSION

Carefully planned, technically complex and above all meticulously executed, Johns’ paintings are built on a series of individually articulated, calculated steps that make good use of his long established repertoire of images, motifs, materials and techniques. Johns combines ideas of printmaking and painting, applying printed elements, transfer methods and tools in his paintings and creating “paintings in print” in a way that even he thinks is “not entirely appropriate.” His combination of instinct and careful planning results in a body of work where things are not as they seem, where the viewer is asked to acknowledge the big picture and all its details, to constantly shift focus between the sensually worked surface and the creative processes left visible beneath it. Johns creates paintings about painting, reveling in the details, in a sea of individual brushstrokes from which one must occasionally step back to see Johns’ vision. Inhabiting the gray space between the whole and the sum of its parts, these paintings are nothing short of technically and visually stunning.

ACKNOWLEDGEMENTS

Kristin Lister, Paintings Conservator, Art Institute of Chicago
Mark Pascale, Associate Curator of Prints and Drawings and Adjunct Professor of Printmedia, Art Institute of Chicago
John Lund, Printer to Jasper Johns
James Meyer, Painting Assistant to Jasper Johns
Paintings Conservation and Conservation Science Departments, Art Institute of Chicago, including Frank Zuccari, Francesca Casadio, Gwenaëlle Gautier, Inge Fiedler and Aniko Bézár
James Rondeau and Douglas Druick, Curators for Jasper Johns: Gray

APPENDIX: REFERENCED ARTWORKS

A. Works by Jasper Johns (in chronological order)

Flag, 1954-55 (encaustic, oil and collage on fabric mounted to plywood, three panels, 107.3 x 154 cm) Museum of Modern Art.

Gray Rectangles, 1957 (encaustic on canvas, 152.4 x 152.4 cm) Collection Barney A. Ebsworth.

Tennyson, 1958 (encaustic and collage on canvas, 186.7 x 122.6 cm), Des Moines Art Center.

Good Time Charley, 1961 (encaustic on canvas with objects, 96.5 x 61 x 11.4 cm) Collection Mark Lancaster.

Field Painting, 1963-4 (oil on canvas with objects, two panels, 182.9 x 93.3 cm) Collection Artist.

According to What, 1964 (oil on canvas with objects, six panels, 223.5 x 487.7 cm) Private Collection.

Voice, 1964-7 (oil on canvas with objects, two panels, 243.8 x 176.5 x 6 cm) Menil Collection, Houston.

Voice, 1966-7 (lithograph 104.8 x 69.9 cm, sheet 122.6 x 80.6 cm) Published by Universal Limited Art Editions (ULAE).

Black and White Numerals; Figures from 0-9, 1967-8 (series of 10 lithographs, 94 x 76.2 cm sheets) Published by Gemini Graphic Editions Limited (Gemini G.E.L.).

Screen Piece 3, 1968 (oil on canvas, 182.9 x 127 cm) Newman Collection, Kansas City.

Usuyuki, 1979-81 (screenprint, sheet 76.4 x 118.7 cm) Collection Walker Art Center, Minneapolis.

Between the Clock and the Bed, 1981 (oil on canvas, three panels, 182.9 x 320.7 cm) Collection Artist.

Untitled, 1983 (encaustic and collage on canvas with objects, 122.2 x 190.8 cm), Private Collection.

Racing Thoughts, 1983 (encaustic and collage on canvas, 121.9 x 190.8 cm) Whitney Museum of Art.

Racing Thoughts, 1984 (oil on canvas, 127 x 190.5 cm) Robert and Jane Meyerhoff Collection, Phoenix, Maryland.

Bridge, 1997 (encaustic on canvas with objects, 198.1 x 299.7 x 20.3 cm) promised gift to San Francisco Museum of Modern Art.

Near the Lagoon, 2002-3 (encaustic on canvas and wood with objects, 301.9 x 200 x 10.2cm) Art Institute of Chicago.
B. WORKS BY OTHER ARTISTS

Matthais Grünewald, *Temptation of St. Anthony* (oil on panel, 265 x 141 cm) from the *Isenheim Altarpiece*, Musée d’Unterlinten, Colmar.


Barnett Newman, *Untitled*, 1961 (lithograph 58.1 x 41.4 cm, sheet 76.4 x 56.2 cm) Museum of Modern Art.

REFERENCES


ENDNOTES

1 Pigments was identified by polarized light microscopy and confirmed with gas chromatography-mass spectroscopy; Media identified by FTIR, analysis by Gwenaelle Gautier, Aniko Bezur, Inge Fiedler, and Francesca Casadio. For a complete discussion of *Tennyson* and *Near the Lagoon* including additional scientific findings please see Keegan and Lister, 2007.

2 Ralph Mayer recommends 40-50% dammar and no oil (1951); Karl Zerbe has two recipes: one with 10% dammar and 5% Venice turpentine or Canada Balsam, and the second with 10% sun-thickened linseed oil; see “Technical Appendices: Notes on encaustic Painting, c. 1945” by reprinted in Stavitsky, 2000, 83-4.

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.

This paper has not undergone a formal process of peer review.
MINIMUM INTERVENTION IN THE STRUCTURAL REPAIR OF CANVAS PAINTINGS: WHEN IS ENOUGH, ENOUGH?

Diane Falvey

ABSTRACT – The level of intervention in treatment of a canvas painting is dependent on the mechanical and chemical composition and condition of those original materials, and the planned use of the work. Knowing how introduced conservation materials, such as adhesives or supports, will behave over time and how successful the conservator’s methods will be in stabilizing the work can enhance the tools from which we choose to treat any work. The author’s presentation includes a 2007 survey of formerly treated paintings and an overview of the “Thinking it Through” workshop, hosted by West Lake Conservators in Skaneateles NY, with Vishwa Mehra and Matteo Rossi Doria in September 2007. Both these events have influenced the author’s current approach to the treatment of paintings.

In 2007 a survey was conducted on paintings treated by the author in the past. These treatments included varied techniques and materials, some conventional and some experimental. The results will be presented from the examination of the condition of these paintings, after three decades of natural aging and varied real life display conditions. This presentation will include a discussion of the choices leading to those past treatments with structural and aesthetic criteria, consideration as to which treatments have worked, which have resulted in a stable condition and which have failed. The lessons learned from this re-evaluation of past treatment decisions have proven useful in current treatment proposals.

The September, 2007 workshop with Mehra and Rossi Doria focused on the level of intervention in the treatment of canvas paintings, heightened with information about generally accepted conservation adhesives and supports and their mechanical properties. Lectures, discussion and practical demonstration included minimal treatment, choice of materials and use of reduced amounts of materials in non-interventive techniques. Some current minimum treatment case studies will be presented to show how these events have influenced the author’s decision making in treatments of paintings on canvas.

Diane Falvey
Private Paintings Conservator
Perth, Ontario Canada

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.
This paper has not undergone a formal process of peer review.
ABSTRACT – A unique conservation project involves the examination and treatment of numerous oil paintings from the estate of the American Abstract Expressionist artist, Clyfford E. Still (1904-1980). This paper provides an introduction to Still’s life as an artist and teacher. It reveals details of his extraordinary and mysterious collection of more than 800 oil paintings. Most of these painting have never been viewed outside of his studio and all of them have been locked away since the artist’s death in 1980. A summary of the artist’s materials and techniques, questions regarding his original intent, and recurring issues of conservation concern are briefly discussed.

1. INTRODUCTION

This paper will introduce a unique art collection that the ARTEX Conservation Laboratory has had the honor and privilege of being involved with since 2004. This collection comprises the works of the American artist, Clyfford Still. Most are familiar with this name and some of the paintings associated with it. Many may not know the artist well or be aware that Still was a leading figure of Abstract Expressionism, the art movement that began in New York in the mid-1940s and became the most influential American contribution to the international art world to that time.

This paper will provide just a glimpse into the life and work of Clyfford Still, as well as the conservation effort that has evolved around his astounding art collection. Examination of over 150 Still oil paintings in this collection has been carried out by the ARTEX Conservation Laboratory in the Washington, D.C. area. Materials and techniques of the artist, as well as the condition of the paintings, will be outlined. A very brief introduction to some of the conservation challenges posed by these paintings will also be presented. (Please note that the treatment strategy for Still’s paintings will be presented at the AIC Paintings Specialty Group session in Los Angeles in May 2009.)


...you either stood up and lived or laid down and died... in such a land [the prairie] a man must stand upright, if he would survive. Even if he is the only upright form in the world about him... Clyfford Still'

Clyfford Elmer Still was born to Canadian parents John Elmer Still and Sarah Amelia Johnson Still in Grandin, North Dakota on November 30, 1904. The family moved to Spokane, Washington the following year. Still was raised both in Spokane and near Bow Island in southern Alberta, Canada on a homestead granted to his father by the Canadian government in 1910. Still attended school intermittently in Spokane from 1910 until 1919 at which time his family moved to Killam, Alberta, southeast of Edmonton.3

Drought and depression plagued farmers in the West during Still’s early years, making life and work on the family wheat farm very difficult. In 1922, Still left Alberta and enrolled as a junior in the high school run by Spokane University.4

Graduating from high school in 1924, Still then attended Spokane University, where he excelled academically, played on the university baseball team, and served as President of the student body during his senior year.5 He had met Lillian Battan in Spokane and they married in the summer of 1930.6

Still graduated from Spokane University in 1933. In 1935, he earned his Master’s degree in Fine Arts by Washington State College in Pullman, with his thesis on Cezanne: A Study in Evaluation. Clyfford Still and Lillian later had two daughters, Diane in 19392 and Sandra in 1942. Still and his wife, Lillian, separated in the late 1940s and finally divorced in 1954. He later married Patricia Garske in 1957 and the couple was still together when Clyfford Still died in Baltimore on June 23, 1980 at the age of 75.

Barbara A. Ramsay, Director of Conservation Services
ARTEX Fine Art Services, Landover, Maryland
and Head Conservator of the Clyfford Still Estate and the Patricia Still Estate
3. CLYFFORD STILL – THE ARTIST AND TEACHER

A great free joy surges through me when I work...with tense slashes and a few thrusts the beautiful white fields receive their color and the work is finished... Clyfford Still

Art, music, literature, and poetry were very important in Clyfford Still’s life, starting at an early age. He started painting at around age 15 and reminisced about his father buying him his first “tubes of paint and prestretched canvases” in Medicine Hat, Alberta. Still’s first of many visits to New York and the Metropolitan Museum took place in 1925. He enrolled in the Art Students League, but remained for only a short time (about 45 minutes according to Still) and then returned to his studies in Spokane. Still spent most of his life criss-crossing the country, from west to east coast and back again, with periodic sojourns north to Canada.

In 1933, Still entered the graduate program in Fine Arts at Washington State College in Pullman, Washington where he also worked as a teaching fellow. In addition, Still was invited by the head of the philosophy department “to tutor Rhodes Scholar nominees informally in the fine arts.”

In the summers of 1934 and 1935, Still served as a guest artist at the Trask Foundation in Saratoga Springs, New York (now known as Yaddo), where he was able to focus entirely on his painting, surrounded by other artists and writers.

In 1937, Still set up a summer art colony with Worth F. Griffin, a painter of portraits of American Indians, in Nespelem on the Colville Indian Reservation. His students at that time found Still to be a “patient and supportive instructor who quietly built his students’ self confidence by reinforcing the idea that ‘art was solely for the artist’s personal satisfaction.’”

Up until 1941, Still taught drawing, painting, history of art, and esthetics in the Fine Arts Department at Pullman University. In 1941-42, Still left Pullman and moved to San Francisco where he worked in several war-effort jobs, but also painted whenever he could. Still’s first one-person exhibition, “Paintings by Clyfford Still” was held at the San Francisco Museum of Art in March of 1943. In the fall, Still and Mark Rothko met and were to become friends.

Later in 1943, Still moved to Richmond, Virginia to teach at the Richmond Professional Institute (now Virginia Commonwealth University). There he created some of the paintings that would launch his reputation as well as numerous oils and lithographs on paper that have yet to be viewed by the public.

Still moved to New York in the spring of 1945, where Rothko introduced him to Peggy Guggenheim. Still soon established relationships with many of the up and coming artistic geniuses of his time, including Jackson Pollock, Barnett Newman, and Robert Motherwell.

His show [Still’s] of all those early shows [of Pollock, Baziotes, Motherwell, and Rothko], was the most original. A bolt out of the blue. Robert Motherwell

Still makes the rest of us look academic. Jackson Pollock

To me they [Still’s paintings of the early 1940s], form a theogony of the most elementary consciousness, hardly aware of itself beyond the will to live—a profound and moving experience. Mark Rothko

Still accepted Guggenheim’s invitation to submit a painting for the “Autumn Salon” at her Art of This Century Gallery in October of 1945. Still’s first one-person show in New York in 1946, at the same gallery, featured works that can be considered the earliest Abstract Expressionist paintings. Still then “retreated” to Killam, Alberta for several months, before moving back to San Francisco where he taught for four years at the California School of Fine Arts (now the San Francisco Art Institute). In San Francisco, Still was known to be a colorful, temperamental, but inspirational teacher; his students, sometimes called him “the black angel.” Although Still did not move back to New York until 1950, he visited often and maintained close ties with the artists there.

One-person exhibitions of Still’s work were held at the influential Betty Parsons Gallery, New York, in April 1947 and at the California Palace of the Legion of Honor in San Francisco in July 1947. When Still returned to New York, two one-person exhibitions of his work were presented at the Betty Parsons Gallery in 1950 and 1951.
4. STILL’S DISSOCIATION FROM THE ART ESTABLISHMENT

Still is known to have had turbulent relationships with many throughout his lifetime, but particularly with those involved in museums or art commerce. He came to detest the gallery owners and art dealers who asserted ownership over the artist and his art. He continually took issue with those who tried to analyze and interpret his paintings for the public. It was imperative for Still that the viewer was able to respond to his works directly and on their own terms. By the late 1940s and early 1950s, Still became even more contemptuous of the art world in general and the New York art scene in particular.

In late 1951 or early 1952, Still terminated his relationship with the galleries in New York and thereafter represented himself. From that point forward, very few of Still’s paintings entered the art market and, as a result, public knowledge of his painting suffered. He also had falling out with his friends, Newman, Rothko, and Pollock. But Still continued to paint with a vengeance. In ensuing years, Still participated in several important exhibitions but turned down many opportunities, particularly group exhibitions.

In 1961, Still left New York for good. He and Patricia settled in Maryland—first on a farm near Westminster and later in a home in New Windsor—where he continued to live and paint for another nineteen years. Still withdrew into his own world where he could explore his personal vision of artistic and emotional expression. With his departure from New York, Still viewed himself as a fighter rather than as someone “dropping-out.” He is quoted as saying,

> I know that many artists pictured me sitting in my studio feeling angry and bitter...
> But I was having the time of my life.

Still sold very few of his works in his lifetime but made two significant gifts to museums that had earned his trust and respect. Thirty-one paintings were presented to the Albright-Knox Art Gallery in Buffalo, New York in 1964 and 28 paintings to SFMOMA in 1975. Both gifted collections include a selection of works spanning Still’s lifetime. Patricia Still later made a gift of 10 of his paintings to the Metropolitan Museum of Art in 1986.

Apart from several solo exhibitions of Still’s work in the 1960s and 1970s, Still participated in numerous important group shows as well. In addition, he received numerous honorary awards during the 1960s, 1970s, and in 1980.

It was not until 1979 that the Metropolitan Museum of Art in New York mounted its largest one-person exhibition ever for a living artist, showing 79 paintings that were selected and installed by Still. This was the last exhibition of his work that Still was to see...as he was seriously ill with cancer and died on June 23, 1980, at age 75. Three major exhibitions of Still’s work followed his death: one at the Mary Boone Gallery in New York in 1990, another in Europe in 1992, and most recently at the Hirshhorn Museum and Sculpture Garden in Washington, D.C. in 2001.

In spite of Still’s withdrawal from the New York art scene and his name not being as familiar today as those of some of his contemporaries, his work has made substantial gains in value over the years. For example, in 2006 one of his paintings from a private collection, 1947-R-No.1 (PH-137), sold at auction for $21.29 million.

5. THE CLYFFORD STILL ART COLLECTION

Still created, assembled, studied, documented, and preserved his collection throughout his lifetime. He maintained close control over his paintings, control over who could show them and where they could be shown, who could buy them and to whom he would give them. Still parted with only about 5% of his total oeuvre in his lifetime, through gifts and restricted sale to museums or private collectors.

Still’s comprehensive art collection was sealed upon his death in 1980 with instructions for its future use clearly laid out in his Will. With his widow’s death in August of 2005, the Collection of Clyfford Still came to include the works in Patricia Still’s personal collection as well.

The complete Clyfford Still collection includes at least 2,403 works of art:
- 825 oil paintings,
- 1,575 works of art on paper, and
- 3 carved wooden sculptures.
These works represent about 95% of Still's life's work and cover the period 1925 to 1980.

An extensive archive of Still's sketchbooks, letters, document books, and photographs exists, but is not yet accessible for general study. Fortunately, some of these documents have been made available to ARTEX conservators, only for conservation purposes. We look forward to the day when all of this valuable—and no doubt fascinating—information will be released to interested scholars.

6. THE WILL OF CLYFFORD STILL

To understand the contents of the Will of Clyfford Still, one must realize that this artist was an intellectual, a philosopher, a man of vision and a man of principle, a man with great strength of character, and very strong convictions. His paintings did not exist individually, but formed part of a living, breathing entity. To him, they represented life and death and survival and failure. He painted passionately and he had to paint. For Still, each painting had meaning only within the context of his entire oeuvre, in relation to the works that went before and those that followed.

In his Will, Still stated that his collection of art could not be divided up. Individual works of art could not be “sold, given or exchanged.” The entire collection was to go to an American city that would “agree to build or assign and maintain permanent quarters exclusively for these works of art and assure their physical survival.”

7. THE CLYFFORD STILL MUSEUM

Over the years, various American cities had hoped to acquire the Clyfford Still collection and had negotiated with Patricia Still with this goal in mind. Mrs. Still was very particular about who would be appropriate to receive this special bequest. It was not until 2004 that Patricia Still entered into an agreement with the City and County of Denver, Colorado, who agreed to build the Clyfford Still Museum and transfer the collection to it when the building was ready to receive the works.

The new museum has been designed by Brad Cloepfil, of Allied Works Architecture, Portland, Oregon. The building is slated to open in Denver, adjacent to the Denver Art Museum, in 2010. Director, Dean Sobel, has been spearheading this effort.

8. CONSERVATION OF THE CLYFFORD STILL COLLECTION

Preservation of his prized collection had always been a primary concern for Clyfford Still. He systematically rolled, wrapped, labeled, and stored his paintings, in an attempt to protect his works from damage. Works that were stored on stretchers were wrapped in plastic sheeting and labeled. Each painting was meticulously documented in terms of when and where it was painted, whether or not it had been photographed, where it was exhibited, and even who had viewed it in a private showing. Still apparently prepared written instructions for the care of his paintings.

After Still’s death in 1980, his widow, Patricia Still, made it her personal responsibility to continue to document and preserve the works, storing all of them in their home. It was not until 2003 that all works were moved to a safer storage location.

In early 2004, Patricia Still directed the ARTEX Conservation Laboratory to undertake an initial conservation survey of the Still oil paintings. This survey was carried out on a selection of 24 paintings, both stretched and rolled, which spanned Still’s career. Thus began our adventure in revealing the secrets of the artist’s life’s work. It was an incredibly exciting process, both exhilarating and humbling, as these works were unwrapped and unrolled. These paintings had not been seen for two to six decades. Many of them had never before been viewed outside of the artist’s studio. As a result of the initial condition survey, the ARTEX Conservation Laboratory was authorized to undertake conservation treatment of several Still paintings. This work was funded by the Clyfford Still Estate.

Not long before the passing of Patricia Still on August 21, 2005, Still’s daughters became co-representatives of their father’s Estate. The concern and dedicated efforts of Sandra Still Campbell and Diane Still Knox helped to ensure that the condition survey was extended in 2005 and 2006 and that conservation treatment continued for the most-at-risk paintings.

In 2006, the ARTEX Conservation Laboratory collaborated with Dean Sobel, Director of the Clyfford Still Museum, in preparing a successful application for a Save America’s Treasures grant, to help fund conservation work on high priority paintings during 2007 and 2008. The museum later received funding for conservation from The Henry Luce Foundation.
A team of four ARTEX conservators has been working with the museum and the Estate, preparing Still paintings for safe travel to Denver and installation in the new museum. More than 50 paintings have been treated to date.

9. THE ARTIST’S STYLE OF PAINTING

In examining the Clyfford Still paintings as they were unwrapped and unrolled, it became evident that, as John O’Neill so aptly stated, the artist entered into a “fiercely independent artistic exploration” over the course of his lifetime. Evolution of the artist’s style of painting could quite clearly be traced from his representational prairie scenes (Fig. 1) and expressive figures of the early to mid 1930s (Fig. 2) to his abstract but still identifiable human forms of the later 1930s to mid-1940s (Figs. 3, 4, 5, and 6). From about 1944 onward, and certainly by 1946, Still’s
painting had broken away into truly abstract forms—jagged fields of color and texture—leading the way in the realm of what is now referred to as Abstract Expressionism. The scale of his paintings suddenly expanded to monumental proportions that would become the hallmark of Abstract Expressionist work (Figs. 7 and 8). These paintings—with their strength, striking color, emotional power, and majesty—are those most often associated with the unique and readily identifiable style of the artist (Figs. 9 and 10). From the early 1960s through the late 1970s, Still continued to develop his distinctive painting style on a large scale, right up until the age of 74 when his final oil painting was completed on August 1, 1979.37

10. MATERIALS AND TECHNIQUES OF THE ARTIST

Very little has been published on the materials and techniques of Clyfford Still. Early exposure to Still paintings took place at the San Francisco Museum of Modern Art (SFMOMA) in the late 1970s when paintings included in the gift to the museum in 1975 were mounted on stretchers prior to display and storage.38 Examination and treatment of the SFMOMA paintings, in addition to interviews with Still family members and past students, were carried out in the late 1980s and early 1990s, resulting in a technical publication by Ardrey and Shank.39 Auping discussed Still’s paints and his handling of them in 1992.40 Additional documentation and conservation of Still paintings at the Albright-Knox Art Gallery have yet to be explored by this author.
Fig. 7. Clyfford Still, 1944-N-No.1 (PH-235), oil on cotton canvas, 105 in. H x 92 1/2 in. W, (Clyfford Still Estate. Photograph: ARTEX Conservation Laboratory)

Fig. 8. Clyfford Still, 1946-No.2 (PH-1103), oil on cotton canvas, 90 13/16 in. H x 69 3/16 in. W, (Clyfford Still Estate. Photograph: ARTEX Conservation Laboratory)

Fig. 9. Clyfford Still, 1951-No.2 (PH-240), oil on cotton canvas, 90 3/8 in. H x 67 3/4 in. W, (Clyfford Still Estate. Photograph: ARTEX Conservation Laboratory)
Since 2004, conservators in the ARTEX Conservation Laboratory have examined and documented approximately 150 paintings in the Clyfford Still Estate and the Patricia Still Estate, as well as another 40 or so in the collections of several museums in the USA and Canada. ARTEX has initiated a scientific study of Still’s materials and techniques in collaboration with the Hirshhorn Museum and the Getty Conservation Institute. Results of this study will, in the future, contribute detailed technical information relating to the artist’s paintings. In the meantime, the documentation and interpretation by Ardrey and Shank can be supplemented by preliminary observations of ARTEX conservators on Still’s materials and techniques, as summarized below. Most of the paintings dealt with thus far date from the 1930s and 1940s, but some examples from the 1950s through the 1970s are also included.

10.1 AUXILIARY SUPPORTS
Of the stretched Still paintings, the majority were found mounted on Lebron type expansion bolt stretchers. Stretcher bar marks on some paintings suggested the use of narrow stretchers or strainers at some stage. It has now been confirmed that temporary wooden strainers were used by Still to support his canvases during sizing and painting, unless a wall was used for this purpose. Most of the paintings were then rolled and stored. Only later were the paintings mounted on stretchers, prior to exhibition.

10.2 PRIMARY SUPPORTS
All but a few of the paintings examined to date have been executed on natural cotton canvas supports that are plain or basket weave, often double fill, and vary from lightweight cotton fabric to heavyweight cotton duck. Blue denim and prepared window shade fabric supports have also been noted in works from the 1930s and 1940s. Dark stitching associated with the selvedge edges of the canvas can often be seen along the tacking margins and occasionally along the perimeter of the smaller works. The canvases, when stretched, have small staples along the unpainted tacking edges.

Most of the Still paintings examined to date have paint applied to the entire canvas surface up to the fold lines at the edges of the stretcher. However, some paintings in the late 1940s, and many more throughout the 1950s and right up until 1980, have large fields of canvas left intentionally unpainted.

10.3 SIZING AND GROUND LAYERS
Still’s daughters recall that their father applied a hot rabbit skin glue sizing to his canvases using a rag, or a floor mop for larger works. The circular patterns of sizing often seen on the unpainted sections of canvas also suggest this technique. For the most part, the sizing layer is thinly applied and relatively evenly distributed.
irregularity in thickness has resulted in color differences as well as a few examples with minor planar deformation of the canvases. In most cases, the sizing has served its function well in preventing penetration of the oil medium into the canvas.

In several paintings from the 1940s, either an opaque white preparation layer or a translucent whitish preparation layer has been observed. Later paintings examined thus far do not have any canvas preparation beyond a size layer.

10.4 PAINT LAYERS

It appears that Still usually prepared his own oil paints from powder pigments and linseed oil. In some of his earlier paintings, he used occasional touches of oil paint straight from the tube. Still cites boiled linseed oil as his medium of choice. The driers and solvents in that oil would have hastened drying of the paint. Tackiness of some colors even today suggests some other additive, and/or specific pigment-oil interactions that interfered with drying of the oil. Ardrey and Shank discuss paint preparation and some pigment identification.43

Almost all of Still’s paint application was carried out using palette knives of various shapes and sizes. His deft handling of paint resulted in broad, gestural forms and rich, textural surfaces, usually with a striking vertical element. Jagged fields of color dominated the picture plane, often highlighted with touches of complementary or accentuating color. Intoxicating surfaces were created by juxtaposing paint that was rich and glossy with fields that were velvety and matte. Some of the paintings from the 1940s exhibit areas accentuated with small scrapes in the wet paint or sgraffito. Evidence of some brushwork can be deciphered, particularly in Still’s later paintings. Still’s palette of colors was quite simple by design and evolved throughout his lifetime.

10.5 COATINGS

Most Still paintings examined to date do not appear to have varnishes applied. However, several of his paintings have been discovered with darkened, reticulated coatings. Anecdotal reports and limited documentary evidence suggested Still’s practice of “oiling out” or varnishing paintings that had become “too dry.” This has now been confirmed by correspondence between Still and some of the owners of his paintings. In addition, both the artist and his widow were obviously annoyed by museums and conservators who refused to undertake the oiling out or varnishing of his paintings when directed to do so.44

Some of the coatings appear to have been applied overall and others selectively. It is not always evident which areas were treated or how much saturation or gloss the artist had intended. Some examples have now disfiguring coatings that Still might not have approved of. It is not entirely clear what Still meant by his paint being, “too dry.” Did this refer to overly matte or sunken paint, dulling of the surface due to the presence of organic debris, or paint efflorescence that formed on the surface several years after painting? Until the artist’s intention is better understood, it is anticipated that little treatment will be carried out that involves removal or modification of varnish on Still’s paintings. It is hoped that the artist’s notes in the archive will soon shed further light on the artist’s intentions in general and for specific works in particular.

10.6 INSCRIPTIONS

Almost all of the Still paintings examined to date have been signed (“Clyfford”) and dated (by year) on the painted surface. Most paintings also have inscriptions written at the verso of the canvas, including the artist’s signature “Clyfford”, the year of execution (also serving as the title), the approximate dimensions of the stretched canvas (in inches), and a “PH number” that corresponds to the sequence in which the paintings were photographed (non-chronologically) in the 1960s.

10.7 STORAGE METHODS

Many of Still’s paintings are stored on stretchers but the majority are on rolls. Still rolled the unstretched paintings “face out” around either small diameter cardboard tubes or, in several cases, metal drain pipes. Between one and eleven paintings have been found on a single tube. The canvases were tightly rolled without an interleaf with few exceptions. The rolled paintings were secured with a variety of grades of masking tape, with strips that overlapped the painted surfaces in most cases. All rolls were then wrapped in plastic sheeting, labeled, and stored vertically.
11. CONDITION OF THE STILL PAINTINGS

Still developed a technique of preparing his canvases and paints that resulted, for the most part, in paintings that are surprisingly supple and free from cracking or other defects. His paintings have a freshness and timelessness that contradict their age or the manner in which they have been stored for up to 80 years. The brilliant colors have retained their liveliness and the subtleties are still intact. Most of the stretched canvases have good tension and display planar deformation related to variable paint thickness or multiple paintings on a single canvas.

Of the 150 or so paintings that we have examined to date, the overall condition of most is remarkably good. For those paintings that have suffered some damage or deterioration, the common conditions include the following:

- Canvas with minor to pronounced planar deformation due to variable paint application or due to rolling
- Canvas staining or soiling
- Unevenly applied, discolored, and/or contracted size layer
- Incompletely polymerized oil paint (tacky layers, adhered to the verso of canvas in rolled paintings or to plastic wrapping in stretched paintings)
- Impasto that has been partially flattened or texturized due to rolling or stacking of incompletely dried paintings
- Variable matte and gloss effects across surfaces and general dulling or discoloration of some colors
- Paint efflorescence of a minor to major degree
- Painted surfaces with a variety of imbibed organic and inorganic debris
- Embrittled paint layers that are cracked, cupping, lifting, curling, and/or flaking
- Paint loss that is minimal to comprehensive
- Coatings of oil or varnish that have discolored, reticulated, and/or are still tacky and have imbibed debris
- Masking tape remnants and adhesive residues on painted surfaces

It should be reiterated that the above-noted conditions are the exception, are minor defects, or usually apply to small portions of the affected paintings.

12. CONSERVATION TREATMENT OF THE STILL PAINTINGS

Minimal intervention is the general principle applied to conservation treatment in any context, but with Clyfford Still paintings this has been firmly upheld. Because of the limitations imposed by the artist's materials and due to the large number of paintings to be dealt with, the conservation goal has been to carry out minimal treatment in order to ensure stability for travel and to make the works more presentable for display.

Conservators have been faced with a variety of challenges in every aspect of treatment of the Clyfford Still paintings due to several factors, including the following:

- There are many unanswered questions with regard to the artist's intent—the original matte versus gloss effects and the significance of coatings; the acceptable degree of dryness, matteness, or efflorescence of paint; the intended stretcher size/fold lines; the acceptability of fine debris scattered over the painted surfaces.
- A significant concern is the extreme sensitivity of both weakly bound oil paint and rich oil paint layers to organic solvents and to water.
- Many matte paints are prone to mechanical abrasion using dry cleaning methods.
- There is the risk of darkening or saturation of matte paints during consolidation, residual consolidant removal, or masking tape adhesive removal.
- Pronounced embrittlement or crumbling of some detaching paint layers makes any manipulation fraught with risk.
- The question presents itself as to whether or not to remove, reduce, or otherwise alter artist-applied coatings that are strongly discolored and/or reticulated.

ARTEX is engaged in ongoing dialogue with other conservators of modern paintings in exploring the materials, the deterioration, the issues, the interpretations, and the options available to us for treatment. This approach will help to ensure that appropriate preservation of this valuable collection is realized. Details of the decisions made in terms of treating the Still paintings will be discussed in future presentations and publications.
13. TECHNICAL STUDY
A structured program of technical research is in progress that includes sampling of paintings, microscopical examination, and instrumental analysis, to aid in the identification of materials used by Still. This approach is desirable in order to better understand the artist’s methods and how some of these materials may have changed over time. Some conservation issues such as paint efflorescence and discoloration will also be investigated. ARTEX collaboration with Dr. Susan Lake of the Hirshhorn Museum and Dr. Tom Learner of the Getty Conservation Institute is underway.

14. CONCLUSION
The world has much to learn about the life and art of Clyfford Still. Work undertaken to date on the mysterious Clyfford Still Collection has revealed more about the artist, his context, and his previously unseen paintings. The present study involves documentation and interpretation of findings with regard to materials and techniques, as well as causes of alteration or deterioration. Protocols have been developed for treatment of these complex paintings and preparation of paintings for travel and installation in the new museum is underway.

As examination and treatment of paintings in the Clyfford Still collection continue, no doubt there will be some questions answered and more questions asked about Still’s materials, his techniques, and his intentions. Scientific analysis will play an important role in the next stages of investigation, as will access to the artist’s archive and studio materials.

With each new painting that is unrolled, more is being learned about the artist and his significance in the history of Abstract Expressionism in particular and art history in general. Once the unknown works and writings of Clyfford Still are revealed to scholars and the public, a more appropriate sense of appreciation of this great man and his legacy will be inevitable.

15. ACKNOWLEDGEMENTS
The author is indebted to many who have been instrumental in making conservation of the Clyfford Still collection possible:
The daughters of Clyfford Still, Diane Still Knox and Sandra Still Campbell, co-representatives of the Clyfford Still Estate, who have so freely shared their knowledge and personal experience of their father’s art and life. They have fully supported the conservation effort, shared personal photographs, and authorized the reproduction of images in this publication.
The Patricia Still Estate, for allowing access to Still’s documentation books and photographic material.
Dean Sobel, Director of the Clyfford Still Museum, whose enthusiasm and ability to make things happen have contributed so much to all that relates to the new museum and to an appreciation of Still as the genius that he was.
Save America’s Treasures and the Henry Luce Foundation for the conservation grants awarded to the Clyfford Still Museum that enable us to conserve many of the paintings in the collection before the museum opening in 2010.
John Jacobs, President of ARTEX Fine Art Services, whose vision and support for excellence in conservation have enabled us to treat the Still collection with the respect and professionalism that it deserves.
ARTEX conservators, Pamela Betts, Kristen Loudermilk, and Peter Nelsen, who are working with the author on conservation of the Still paintings and have carried out the majority of the examination and treatment under her direction.
Conservators, Dr. Susan Lake (Hirshhorn Museum), Jay Krueger (National Gallery of Art), Will Shank (Private Practice, Barcelona), Dr. Tom Learner (Getty Conservation Institute), Paula De Cristofaro and Alina Remba (SFMOMA), Lucy Belloli and Shawn Digney-Peer (Metropolitan Museum of Art), Carol Mancusi-Ungaro and Matthew Skopek (Whitney Museum of American Art) for their kind collaboration.

REFERENCES
ENDNOTES


2 O’Neill, John P., ed., Clyfford Still. The Metropolitan Museum of Art, New York. 1979, p.177. (According to Sandra Still Campbell, this chronology was written by Clyfford and Patricia Still. Personal communication, November 18, 2008.)


4 Ibid.

5 Ibid., p.163.

6 Personal communication from Diane Still Knox, November 18, 2008.

7 Correction of the date printed in Demetrion Chronology, p. 163. Personal communication from Diane Still Knox, November 18, 2008.

8 Demetrion, p.164.


10 O’Neill, John P., p.177.

11 Demetrion, p.162, 165. From notes of an interview with the artist by Charles Millard, 26 February 1975.

12 O’Neill, p. 177.

13 Demetrion., p.163.

14 O’Neill, p.178.
Demetrion, p.163.

Ibid.


Demetrion, p.163.

Ibid.


First Exhibition. Paintings: Clyfford Still, 12 February-12 March 1946. Oil paintings on canvas and on paper were included.

Clyfford Still is quoted by Albright, p.30.

Albright, p.30.

O’Neill, p.185.

O’Neill, p.188, 192.

Albright, p.34.

Demetrion, p.165. Awards include an honorary degree of Doctor of Fine Arts from the Maryland Institute, College of Art in 1966; an Award of Merit for painting from the American Academy of Arts and Letters in 1972; an honorary degree of Doctor of Fine Arts from the San Francisco Institute of Arts and Letters in 1976; Elected a Member of the American Academy and Institute of Arts and Letters in 1978; an honorary degree of Doctor of Fine Arts from the University of Maryland in 1980.


Patricia Still provided conservators with an undated, typewritten document entitled “CLYFFORD STILL’s written instructions on the care of his paintings” that quoted her late husband.

O’Neill, Director’s Foreword.

Clyfford Still Document Book 1970s, Patricia Still Estate.

Personal communication with James Bernstein, April 23, 2008.


Auping, pp.23-46.

Personal communication with Sandra Still Campbell, 2008.

Personal communication with Sandra Still Campbell and Diane Still Knox, October 2, 2008.

Ardrey and Shank, p.6.


Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.

This paper has not undergone a formal process of peer review.
RESCUE PUBLIC MURALS AND CONSERVATOR-ARTIST COLLABORATIONS

Kristen Laise and Leslie Rainer

ABSTRACT – Rescue Public Murals is a recent initiative to bring attention to U.S. murals. Its objective is to document their unique artistic and historic contributions, and secure the expertise and support to preserve them. Launched in December 2006, the project is sponsored by Heritage Preservation, with guidance from Advisers, who include artists, conservators, art historians, and public art professionals. This paper discusses the collaborative process by which outdoor community murals are being assessed by conservators, the original muralists, and community members.

INTRODUCTION

The project comes out of “Modern Paints” a collaborative research project between the Getty Conservation Institute, National Gallery of Art, and Tate in London that began in 2002 and a 2003 Getty Research Institute and the Getty Conservation Institute symposium “Mural Painting and Conservation in the Americas.” Heritage Preservation, a national non-profit organization, was involved in these meetings and was approached to administer Rescue Public Murals because it had founded and successfully coordinated the Save Outdoor Sculpture! project. Two participants in these meetings, Dr. Timothy W. Drescher, art historian and former co-editor of Community Murals Magazine and Will Shank, independent conservator and curator and former Chief Conservator at the San Francisco Museum of Modern Art, serve as the Rescue Public Murals co-chairs.

With funding from the Getty Foundation, National Endowment for the Arts, Booth Heritage Foundation, and Wyeth Foundation for American Art, Rescue Public Murals has launched a pilot phase during which the project will conduct mural assessments in ten communities across the U.S. The project began by issuing a call to the public to recommend murals at www.rescuepublicmurals.org. The Web site also contains in-depth stories about murals the project is assessing, news items about murals, links to mural programs around the country, and a list of endangered murals.

URGency FOR MURAL PRESERVATION

The initial focus of Rescue Public Murals is to preserve outdoor murals, due to their extreme exposure and vulnerability to the elements, pollution, and vandalism. Through its team of Advisers, the project is particularly aware that community murals painted in 1960s, 1970s, and 1980s are rapidly deteriorating, with new generations unaware of the murals’ original intent and vibrancy. Because many muralists during this time had minimal funds and the murals were large-scale works of art, the materials they used were not always the highest artist grade and have degraded significantly. Weather fluctuations have contributed to paint loss (Fig. 1), decades of sunlight have caused fading, and graffiti is a constant hazard (Fig. 2). Rescue Public Murals realizes that these murals will always face risks, but if the life of a mural can be extended at least 20 years, Rescue Public Murals would consider it a preservation success.

Kristen Laise, Heritage Preservation
Leslie Rainer, Wall Paintings Conservator
In addition to physical degradation, the communities for which murals were painted may have changed, leading to neglect, disinterest, or vandalism. The Rescue Public Murals Web site lists community murals in danger as well as those that have been lost. Three murals that were identified by Rescue Public Murals as significant and in need of preservation were destroyed before the project could assess their condition. They include:

- **Wall of Respect for the Working People of Chinatown,** Cityarts Workshop and local youth, directed by Tomie Arai, New York City, 1977. 35’ x 25’ (est) (Fig. 3). This mural was one of the last Chinatown murals of the early mural movement. Executed largely by local youth, it became a model of their ability to influence their community. Unfortunately, it was destroyed in 2006, when the building it was painted on was torn down for new development.

- **Lakas Sambayanan,** Johanna Poethig, Vicente Clemente, Presco Tabios, San Francisco, 1986. 35’ x 80’ (est) (Fig 4). Painted by a collaboration of artists that combined technical skill and conscientious sensitivity to historical events depicted, this mural captures the end of Marcos dictatorship and Aquino’s rise to power. Though it had faded severely, it spoke directly to the local Filipino population and was seen by thousands of people a day from nearby highways. When the building changed owners in 2006, the new owners painted over it with a mural for their commercial business.

- **The Fire Next Time I,** Dewey Crumpler, San Francisco, 1977. 35’ x 46’ (est) (Fig 5). This mural by a significant African-American artist was an icon of a San Francisco neighborhood that was populated by black shipyard workers during World War II and experienced turbulent times since, such as the race riots of the 1960s. The building on which the mural was painted was recently destroyed.

**COLLABORATIVE ASSESSMENT PROCESS**

Rescue Public Murals is approaching mural preservation with the involvement of not only a conservator, but also the original muralist (where possible) and community members. Many contemporary murals afford the opportunity of having a living artist or their representative to provide information and documentation of the original intent of the piece and the technical process used to create it. Community members contribute to the assessment by explaining the value of the mural to their neighborhood, and building owners answer questions about building use and maintenance.
The Rescue Public Murals pilot phase is testing the collaborative assessment process it has developed in communities around the country. The first step is to establish a Rescue Public Murals Local Advisory Committee, which includes artists, community leaders, and arts leaders. The committee meets to learn about Rescue Public Murals, discuss murals in their community, and decide on one or two murals to nominate for an assessment. The nominations are reviewed by the Rescue Public Murals co-chairs and Heritage Preservation staff and are evaluated on the artistic significance of the mural and the artist; the extent to which the mural is endangered and can be saved for at least 20 years; and the community’s commitment to the mural. If the nomination is accepted, the project directors identify a conservator who has experience with murals, is located in the general geographical area of the mural, and who is open to Rescue Public Murals’ collaborative approach.

For the assessment every effort is made for the conservator, artist(s), and building owner to visit the mural together. The conservator examines the condition of the mural and documents it. The artist may discuss the history of the mural and techniques they used to create it. The building owner and/or other community members participate in the on-site visit to discuss the meaning of the mural to current residents and threats that the mural faces.

All the information gathered on site is recorded on the Rescue Public Murals assessment form, which Heritage Preservation adapted from a similar form created by the Canadian Conservation Institute. The form includes title, artist, date of mural, building owner, mural custodian, and location with orientation, specific hazards, and any information on maintenance programs in place for the mural. An additional section provides space for a description of materials used and condition from the support, paint layer(s) to the surface, as well as retouching, repainting and graffiti. Finally, there is space for a summary of required treatment needs, and graphic and photo documentation. The use of the assessment form provides a standard recording procedure, and ensures that the information collected is consistent for different murals as the project moves forward.

The last portion of the Rescue Public Murals assessment form asks the conservator and artist(s) to propose a treatment plan, with a draft scope of work for each party and a cost estimate. The treatment plan includes whether the materials used are reversible or retreatable, and a budget and timeline for the treatment. The assessment must be signed off on by the conservator, the artist, and the local advisory committee representative. Given that in many cases the artist is living, and that the murals are located in living communities, this collaborative approach is essential to ensure that the treatment being proposed meets the expectations of the different stakeholders.

In 2007, Rescue Public Murals conducted assessments in three cities:

- Six murals by five artists at Estrada Courts, a housing complex in East Los Angeles were conducted by Leslie Rainer and Chris Stavroudis working with two of the original muralists, Norma Montoya and Mario Torero.
- SIDA en Colores by Carlos Callejo in El Paso was assessed by conservator Steven Prins and the artist (Fig. 6)
- Homage to Seurat: La Grande Jatte in Harlem by Eva Cockcroft in New York City was assessed by conservator Harriet Irgang Alden and Janet Braun-Reinitz (a close colleague of the artist, who is deceased) (Fig. 7).

Fig. 6. SIDA en Colores, Carlos Callejo, El Paso, 1988, 16' x 75'. Photo by Steven Prins.

Fig. 7. Artist representative Janet Braun-Reinitz (left) and Conservator Harriet Irgang Alden (right) inspect Homage to Seurat, Eva Cockcroft, New York, 1986, two walls each 30' x 30'. Photo by Kristen Laise.
CASE STUDY: ESTRADA COURTS

The Estrada Courts assessments serve as a case study of the Rescue Public Murals collaborative approach and illustrate some of the unique aspects of community mural preservation. The six murals, selected by the Estrada Courts Local Advisory Committee, are among approximately 60 murals painted on the facades and dividing walls of the housing complex. This collection of murals was painted from 1972 to 1978 by artists working individually, in groups, and with local youth. The ensemble of murals is one of the most significant mural initiatives in the country from that time, and addresses the social and political issues of the period. Indeed, the comprehensive mural project was a foundation for the Chicano mural movement in California. Nearly all of the murals are still in place on the walls, but are showing signs of deterioration, fading, and vandalism. Many have been restored and/or repainted by the original artist, other artist groups, or the maintenance crew at the housing complex.

The murals to be assessed were selected by the local advisory committee, while the Rescue Public Murals co-chairs and Heritage Preservation selected the conservators to carry out the assessments and contacted the artists of each mural, when possible. The conservators and artists worked together to conduct the condition assessments and develop a treatment plan and cost estimate for each.

Considering Innocence by Norma Montoya, the condition of this mural is typical of many at Estrada Courts. The mural has lost a great deal of vibrancy (Fig. 8) and no longer conveys the artist’s strong message that it did when it was first painted. Working together with Ms. Montoya, the conservators agreed that the problems of flaking and lifting paint were minor compared to the overall message and intent of the mural. Given the context of the Estrada Courts, it would likely be much more meaningful to the community who lives with it, if the artist brought it back to life. The conservation component would consist of assisting the artist to prepare the wall and isolate the original painting, then allow her to repaint it from the original images of the mural when it was first completed, possibly using a clear isolating coat to better follow the original design. In the case of Estrada Courts, with such a large number of exterior murals in a living community, conventional conservation did not seem appropriate in this specific context, although it is not one that the conservators have recommended or carried out in the past.

In the cases of Give Me Life and The Sacrifice by Charles W. “Cat” Felix (Figs. 9 and 10), the artist is deceased and so conservators were unable to work with him. However, from comparison with early images of these two murals, it could be seen that large areas have been repainted, colors have shifted, and previous interventions have changed content and color in several places. It was difficult to make the decision as to how to treat these murals without input...
from the artist, and with no clear indication of who might be responsible for the restoration if the paintings are
significantly retouched. Both of these murals are iconic images for the community at Estrada Courts who should
participate in the decision of how these murals are treated. For these two murals, the conservators provided a cost
estimate of the work they would carry out: filling of cracks and losses, surface consolidation, removal or reduction
of unstable and unsightly previous repairs, and removal of overpaint and graffiti as feasible. The cost for artists
services was left blank in these cases until an artist’s representative could be identified who would be able to work
with conservators and the community to help to sensitively restore these murals true to the artist’s original intent.

We are not a Minority by Mario Torero (Fig. 11) had nearly the opposite problem. This mural was restored/repainted in
the 1990s by an artist group, but not by the original artists. In discussion with Mr. Torero, the lead artist, he made it
clear that if this mural were to be treated, he would like to correct mistakes that he felt were made in the previous
restoration. Specifically, he wanted to modify the face to be a more graphic representation with less modeling and
shadows, although this is not how it had been treated in the original rendering of the figure (Fig. 12). This alteration
was a difficult compromise to make, however this was the original artist’s decision regarding the treatment of his mural
and the changes he wanted to make on the mural were to less than 10% of the painting. In the cost estimate for this
mural, the tasks were clearly divided between artist and conservator, with the artist carrying out any repainting or
significant retouching, and the conservator carrying out cleaning, consolidation of paint, filling of cracks and losses and
application of an anti-graffiti coating. In this case, it was recommended that proposed revisions to the mural by the
artist be reviewed and approved by the stakeholders and local advisory team prior to any major retouching of the work.

The treatment proposals that were made for the six murals in the pilot assessments at Estrada Courts recommend as much
or more involvement from the artist than the conservator. In order for the murals to remain a vibrant part of the community
in this specific context, the best course of action in many cases, may be for the artist to repaint all or portions of the mural.
Conservators might contribute by working with the artist to develop a treatment plan, consult on best practice (methods
and materials), carry out loss compensation, apply coatings where appropriate, and advise on maintenance planning.
However, this being said, the recommendations made in the Estrada Courts assessments specify that such treatments be
clearly identifiable as restorations or repaintings of the murals, with the date of the intervention noted.

Overall, in the case of Estrada Courts the conservators felt that the murals should be restored to reflect the artists’ original
intent given that their significance is largely tied to their context as an ensemble of exterior neighborhood murals in a living
community, much more than individual works of art in a museum setting. Additionally, the conservators recommended that
with such a large collection of murals concentrated in one housing complex, it would be hard to justify treatment of only one
mural, and that the scope of the project must be developed within the context of the site and the entire collection of murals
that made them and the housing complex significant in the first place. Thus, a pilot restoration project would be most
successful if it were followed up with a larger project once again involving the community and a group of artists and
conservators willing to address the collection as a whole. Moreover, the long-term maintenance issues must also be
seriously considered for the Estrada Courts murals if they are to retain their significance and integrity over time.
CHALLENGES

Many issues have been raised in the Rescue Public Murals pilot phase and more are sure to arise as assessments continue. These challenges include:

- Strides are being made in the development of paints with UV inhibitors and coatings that resist graffiti, but more testing and development of these materials is needed to extend the life span of a new mural creation or the restoration/repainting of an existing mural.

- Rescue Public Murals assessments have identified some failures of the paint layer(s) of the murals that are caused by structural issues with the building itself. Paintings conservators may not have the expertise to diagnose or propose remedies in this area, and architects or structural engineers may be a necessary addition to the team for some mural assessments.

- Some artists involved in the community mural movement of the 1960s and 1970s were informally trained artists and their whereabouts are no longer known. Murals were often done collaboratively among artists and community members, such as youth. Should a repainting of a mural include a similar collaboration or can one lead artist conduct it alone?

- Rescue Public Murals’ first three assessments have produced treatment cost estimates that range from $10,000 to $80,000. This is due in part to muralist fees varying from $20 per square foot (which would cause the artist to hardly break-even) to more than $100 per square foot. Likewise, conservation treatment costs are likely to be high given the nature of the treatments to be performed on exterior murals painted using modern materials that are beginning to fail after 20-30 years. Even at a reasonable mid-range price, mural treatments will be expensive, whether they are artist repaints, collaborative restorations involving the artist and conservators, or conservation treatments. By comparison, Save Outdoor Sculpture! treatments ranged from $2,000 to $120,000, but many sculptures benefited from some type of treatment for $10,000 or less. It is possible that because Rescue Public Murals is beginning with the most damaged and endangered murals, that treatment will necessarily be more extensive. If Rescue Public Murals’ efforts can be sustained over the long-term, the need for costly interventions may decrease. For example, if best practices for mural creation are widely distributed, newer murals may be more durable. In addition, if the project can increase public attention to the value of murals, vandalism may decline.

As these challenges have become apparent during Rescue Public Murals pilot phase, the project has tried to address them to the best of its ability. For example, in an upcoming assessment, a historic preservation architect will join the assessment team. Other challenges are unique to working with community murals, but ideally, Rescue Public Murals’ inclusive and collaborative approach to the assessment and treatment will mean that the most appropriate decisions are made.

UPCOMING ACTIVITIES FOR RESCUE PUBLIC MURALS

The Rescue Public Murals Web site has been designed to be a clearinghouse of information on mural preservation. The project plans to add a section of the site with best practices for mural creation and information about recommended materials so that new murals might be more durable. Once the assessment process has been fully tested in the current pilot phase, the project would also like to post the assessment procedures and forms on its Web site.

Since it is not possible to physically save all outdoor murals, Rescue Public Murals has been considering how to best document them. A major contribution of the Save Outdoor Sculpture! project was the inclusion of outdoor sculpture in the Smithsonian Institution’s Inventory of American Art. Rescue Public Murals is investigating similar searchable database options. The project continues to accept mural recommendations and images through its Web site. This feature would be further promoted should a mural database be created. Finally, Heritage Preservation is considering raising funds to conduct a pilot treatment project.

For more information about Rescue Public Murals contact:
Kristen Laise, Vice President, Collections Care Programs
Heritage Preservation
1012 14th Street NW, Suite 1200
Washington, DC 20005
202-233-0824
klaise@heritagepreservation.org
www.rescuepublicmurals.org

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.
This paper has not undergone a formal process of peer review.
WALL TO WALL: CONSERVATION OF A JOAN MIRÓ MURAL
AT THE CINCINNATI ART MUSEUM

Frederick Wallace, Per Knutas and Stephen Bonadies

ABSTRACT - The collection of Cincinnati Art Museum includes a large mural by the celebrated artist Joan Miró. Commissioned in 1946 for the Terrace Plaza Hotel in Cincinnati, Ohio, the mural was donated to the Cincinnati Art Museum in 1965. Conservation of the mural was undertaken in 2003 to prepare for the opening of a new wing at the museum that same year. To ensure timely completion, the project was done in collaboration with the Intermuseum Conservation Association. A key goal was to remount the mural in a manner that would safely allow for a future loan to multiple venues.

PROJECT OVERVIEW

In 2002, a collaborative conservation project was initiated involving the Cincinnati Art Museum (CAM), and the Intermuseum Conservation Association (ICA). The two institutions partnered to treat one of the masterpieces in the collection of the Cincinnati Art Museum, a large-scale mural by the celebrated 20th-century artist Joan Miró. The initial primary goal was to remove the mural from its old mounting system and prepare it for relocation from the second floor of the CAM to a newly renovated space on the first floor.

Fig. 1. Miro mural, cropped view

MIRO: EARLY BIOGRAPHICAL SKETCH

Joan Miró was born in Spain and lived the 90 year span between 1893 and 1983. Miró began his formal study of art in 1907. He had his first individual exhibition in 1918. His early work showed his interests in the artistic movements of Fauvism, Dada and Cubism. In 1924 the artist was drawn to the burgeoning creative ideas that came to be known as Surrealism, and he began to conceive artwork that incorporated fantastic, dreamy, and symbolic imagery. As his personal evolution continued, he came forth with a bold, powerful use of simple forms, abstracted shapes and intense color that came to be associated with his mature, signature pieces.

NEW ART FOR A NEW HOTEL

Miro's career was long and highly successful. He found worldwide acclaim and notoriety while still living and producing art. One admirer of Miró's work was Philip Adams, Director of the Cincinnati Art Museum from 1945 to 1973. In 1946, Adams was asked by wealthy Cincinnati real estate developer John J. Emery, then president of the museum board of trustees, for advice in selecting artwork to adorn his new hotel in downtown Cincinnati, the Terrace Plaza, construction of which was to be completed the following year. (Fig. 2) The Terrace Plaza...

Stephen Bonadies, Chief Conservator, Cincinnati Art Museum,
953 Eden Park Drive, Cincinnati, OH 45202 (stephen.bonadies@cincyart.org)

Per Knutas, Paintings Conservator in private practice, re:pair LLC,
4000 Kettering Boulevard, Dayton, OH 54539 (info@pkconservation.com) www.pkconservation.com

Frederick Wallace, Conservator of Paintings,
468 B Young’s Mill Lane, Newport News, VA 23602 (fwallacedjo@hotmail.com)
Hotel, designed by Skidmore, Owings & Merrill, was the first example of Modernist or International Style architecture in Cincinnati. The combination hotel/retail building included a seven-story pedestal or lower section that held Bond Clothes and JC Penny stores, over which the hotel rose with a terraced set back at its lobby on the 8th floor. One of Adam’s recommendations was to commission Miró to create a monumental mural to hang in the Gourmet Room, a circular shaped restaurant for “select dining” built on the 20th floor of the hotel. (Fig. 3) Miró was contacted via Pierre Matisse, a well-connected art dealer (and the son of artist Henri Matisse), who acted as Miró’s agent in New York City. A contract for the commission was negotiated for 12,000 dollars, plus various expenses.

The resulting mural is over eight feet tall and spans more than thirty feet in length. It was first exhibited in New York at the Museum of Modern Art in early 1948, before it was sent to Cincinnati for installation in the Gourmet Room in March of that year. (Fig. 4) Since the restaurant was built according to a circular floor plan, the mural was hung to conform to the curve of the wall. During installation, it was not completely adhered to the wall, but apparently was fixed in place only at the perimeter, and allowed to hang free down most of its length. Miró was aware the mural would be displayed on a curve in Cincinnati, different than the flat, rectangular format used first for the initial public display in New York. Interestingly, after painting the artwork, Miró reportedly neither saw the mural when it was displayed at MOMA, nor at the Terrace Plaza hotel until much later when he visited Cincinnati in June 1952. As reported in an interview published just following that visit, when asked what the painting represented Miró first stated “nothing,” but he then went on to explain that it depicted “the patterns and figures one sees in nature.”

The hotel also featured works commissioned from two other world-renowned 20th-century artists. A mural created by Saul Steinberg, depicting scenes and landmarks in Cincinnati, occupied over 1000 square feet of wall space within the Skyline Room, the main restaurant of the hotel, located on the eighth floor of the building. (Fig. 6) A mobile sculpture by Alexander Calder entitled Twenty Leaves And An Apple hung in the hotel lobby directly across from the elevators on the eighth floor. (Fig. 7)
ACQUISITION AND EXHIBITION BY THE CAM

In 1965, Thomas Emery’s Sons, Inc. donated all three artworks to the Cincinnati Art Museum, following sale of the Terrace Plaza to Conrad Hilton. The Miró mural was placed within a central gallery on the second floor of the museum. As was the case in the restaurant, the mural was displayed in a curved format. However, in contrast to the restaurant hanging, at the CAM it was adhered overall to a concave pulp board support during its installation. It is believed that the treatment was performed by Harry Gothard, conservator at the museum from 1945 to 1968. He was the first full-time conservator hired at the museum. The mural was set within the gallery wall and trimmed with a painted wooden molding that functioned as the picture frame. (Fig. 8)

Over the next several decades the mural received treatment to address minor damages and aesthetic problems in various areas, but complete conservation of the entire artwork did not occur. Full treatment, including cleaning of the mural, was investigated in 1980, but attempts to reduce surface grime without affecting the paint layer were not successful. To help prevent future dirt and grime from attaching itself to the painting as well, the entire surface was coated with a thin layer of Soluvar Matte varnish.

From 1991 to 1993, the CAM undertook an extensive gallery renovation, the first major building project there since the 1960s. While returning significant portions of the museum layout closer to its original design, the renovation would eliminate the gallery that housed the Miró mural. It therefore was relocated to a gallery at the southeast side of the building, also included in the renovation, using a large, movable, wooden cradle structure, to which the painting was secured by hardware. The cradle was shaped to fit with the curve of the mounted mural. (Fig. 9) Once the mural was in its new location, the gallery walls eventually would be built up around it to conceal the cradle structure holding the painting. Due to its large scale, the mural was left in the gallery through the renovation period, protected behind a temporary wooden wall. After the renovation, the new presentation gave the mural the appearance of floating on the wall when viewed at a distance. (Fig. 10) It remained on display in this manner for the next ten years.

THE CINCINNATI WING

Another campaign of major gallery renovation was begun in 2001. This extensive project was conceived to transform 18,000 sq ft of the museum’s first floor galleries into a new display that would showcase the comprehensive artistic history of Cincinnati. The renovation became the primary focus of museum staff activity. This new “Cincinnati Wing” was scheduled to open in May 2003.

When the project started, the CAM conservation staff was comprised of only three permanent employees: a paper conservator (Cecile Mear), an objects conservator (Antje Neumann), and the Chief Conservator, Frederick Wallace, a paintings conservator by specialty. Additionally, the department had accepted a third year intern from the Buffalo State College Conservation program (Patti Favero), also a paintings conservator, who the museum was able to keep on for an additional year through the completion of the renovation. This was particularly fortuitous,
because it reduced the chance of lags in painting treatments for the new wing while the Chief Conservator juggled conservation projects with on-going administrative duties. The small staff was greatly challenged by the demands of the renovation, as so often is the case during such major building projects. Nevertheless, the department met the task well, thanks in large part to the leadership of Stephen Bonadies, then Deputy Director of the museum. Bonadies, a career conservator himself, managed much of the overall renovation project. However, the Miró mural project, a belated addition, came to be an unexpected wrench in the works.

NEW PLANS FOR MURAL CONSERVATION AND EXHIBITION

Late in 2002, Wallace was told by the new museum director, Timothy Rub, who had just joined the museum a year before, that he was interested in seeing the mural conserved and moved from the second floor to a first floor area that was part of the renovation. There the mural would be exhibited in conjunction with the Calder mobile from the Terrace Plaza, in great compliment to one another, both from an aesthetic and historical perspective. He asked for a summation of the current state of the mural and wanted to know the extent of its possible treatment. In addition, he asked for a plan of action that would direct relocation of the mural in the safest and most feasible manner.

Another important factor to address was that the painting had been requested for loan to multiple venues, to commence in early 2004. The exhibition, incidentally, was to center on the relationship between Miró and Calder. When first received, the inclination was to turn down the request, since among other reasons the giant painting was not portable in any practical way. However, if the physical state was to be addressed by treatment to facilitate movement of the mural to the first floor, then a later loan might be made feasible as well. Thus another goal of possible treatment was to remount the mural so that it could be safely deinstalled from display and packed for travel without great difficulty.

Cleaning tests that were performed indicated it might be possible to safely remove the grime layer using materials and techniques that had not been available twenty years earlier. However, due to the size of the mural complete cleaning would require much more time than was available. Dramatic aesthetic improvement would have to wait until after the opening of the new wing, and probably even until after the loan. A good point about this decision was that it could allow for a more detailed, scientific analysis of the artist’s technique and the condition of painting before continuing surface treatment.

From a structural standpoint, it was evident that the pulp board support would need to be removed in order for the mural to be transported most safely. The mural also would need to be lined with a fabric support so that it could be easily reinstalled. Although the aesthetic work was optional, this structural part of the treatment was critically necessary given the exhibition plans. The CAM conservation department would not be able to accomplish the task given the pressure of other work required for the renovation.

All the key parties quickly realized that the project simply would not be possible without outside assistance. So discussion turned to who or what group might have the skills, experience and resources to complete this project in so short a window of time. The Intermuseum Conservation Association, which had just relocated to Cleveland from Oberlin, Ohio, stood out as the logical answer.

Soon after being contacted, ICA personnel made a visit to view the mural and to discuss the project. A plan was devised by which ICA staff would come to the museum, separate the mural from its mounting system, and transport it to the ICA labs in Cleveland for lining. Afterwards, they would return the mural and install it within the new space, using a custom designed method that permitted relocation and rehanging with little difficulty. Once the mural was up in the gallery, Wallace would complete enough aesthetic conservation to satisfactorily improve its appearance before the opening. (Fig. 11) The greatly compressed timetable would leave only a week or so to spare.

Fig. 11. Calder mobile and Miro mural together at CAM in 2003
CONSERVATION TREATMENT

Paintings conservators Wendy Partridge and Per Knutas visited the CAM to perform tests to determine how to go about the de-installation. Miró’s mural is painted primarily in a thin wash of blue that allows the color of the white ground to show through with every stroke. The composition also contains thicker opaque applications of black, yellow, red and green paint, and a few areas of thin purple washes. After testing on site it was decided that two layers of facing would be applied to protect this delicate surface during de-installation and handling in preparation for the transportation to Cleveland.

The ICA has had extensive experience with de-installation of oversized works on canvas, primarily WPA murals in condemned structures, and the chosen material for the facing was typically a microcrystalline wax paste over tissue. In this instance though, due to the semi-porous paint structure, an initial layer of facing was applied with methylcellulose, followed by a second layer with the wax paste. Prior to facing the mural, the drywall around the perimeter of the mural was removed. The facing was applied over two consecutive days so that each application could dry completely before applying a second facing layer and again before the removal of the mural from the wall. (Fig. 12)

Included in the mounting were a few areas where the canvas was wedged and stapled in between 2x4’s, creating a very sturdy construction. In order to successfully remove the mural these areas had to be first dissembled. The 2x4’s were carefully chiseled away until the wedged and stapled canvas was released with pliers. After releasing the canvas in these areas it was possible to start detaching the canvas from the plywood substrate. While the ICA has had considerable success with the use of sharpened spatulas to release murals from plaster walls by sheering through aged adhesive, it was not fully known how successful these tools would be with a modern adhesive. Since the mural had been completely attached to pulp board before it was mounted on the plywood substrate, it was decided that splitting of the pulp board would be the safest approach to deinstallation. The sheer size of the mural magnified the amount of labor required in all steps of this treatment and presented challenges for the safe handling of the canvas as it came away from the wall.

REMOVAL FROM WALL

To facilitate the process of splitting the pulp board as well as to support the de-attached mural, a cart with two tubes was designed (Fig. 13) (Fig. 14)The cart had lockable casters and a base that reached about ten inches below the bottom edge of the mural. The base was wide enough to allow a conservator to stand and reach the top section of the mural. The two Sonotubes allowed the conservator to come closer to the wall and more importantly to avoid a sharp crease at the point of release. The first tube was 18” in diameter, while the second tube was twice as large, being 36”in diameter. This configuration also allowed the mural to be rolled face out and prevent placing any additional stress on the paint layer.

The mural was then removed from the wall by splitting the cardboard with sharpened spatulas and modified barbeque burger flippers (Fig. 15). A section of approximately 4 feet was removed from the wall to allow it to be mounted on the tube cart. Large T-hinges of duct tape held the first section to the tube and additional T-hinges were applied to the
sides and the top to prevent the canvas from sagging. A layer of glassine was applied as the mural was rolled on the large diameter tube to prevent transfer of wax from the facing to the back of the painting. (Fig. 16) Whenever possible, a uniform layer of cardboard was left on the reverse of the canvas. However a few scattered patches had thicker layers of cardboard, particularly towards the end of the mural. During this part of the de-installation, it was interesting to note that the black design elements on the face of the mural appeared to have inhibited the acidic deterioration of the cardboard. The cardboard behind the black forms was greyer in color and more difficult to split. The exact position of the black forms was visible on the cardboard remaining on the reverse of the mural as well as that left on the plywood wall.

After the mural was completely detached, it was unrolled face up on the gallery floor. Then glassine was applied over the face and it was tightly re-rolled face out onto the large diameter tube. The mural was sealed with virgin polypropylene and suspended in its custom made crate. The crate was then transported to the lab in Cleveland for treatment.

**LINING**

Once at the lab, the mural was unrolled face down onto a floor space covered with acid-free barrier board, which provided a firm uniform work surface. The first step was to remove the layer of pulp board to expose the canvas. A small area was tested to see how the canvas would respond to moisture and it was determined that the canvas was not reactive. The adhesive used was water-soluble and was mechanically removed after first brushing water over the pulp board to soften this layer. Residues of adhesive were then softened with a 5% methylcellulose poultice and mechanically scraped away. Multiple applications of the poultice were sometimes necessary. Once clean the area was covered with blotter paper, wooden boards and weights to dry. The adhesive was removed as much as possible, but thin residues still remain within the canvas weave. Once dry, the mural was rolled face out and unrolled face up so that work could proceed on the surface. The glassine was peeled away and the wax facing was removed with repeated applications of Benzine B264. The methylcellulose facing had a weak adhesion and it was possible to mechanically peel away the Japanese tissue without using moisture. A fair amount of adhesive residue was removed by brush applying water through blotting tissue. Additional residual methylcellulose was removed with cotton swabs. The mural was again rolled face out and unrolled face down. Minor distortions in the canvas were relaxed as much as possible with moist blotters and weights prior to lining. All of the tears in the canvas were well mended in a previous treatment and needed no further attention.

Since the mural was scheduled for inclusion in a multi-venue tour, it was crucial to have a system that would allow for ease of installation while maintaining the appearance of being mounted flush to the wall. In addition the CAM planned to display the mural flat as presented at MoMA in 1948, but also wanted the flexibility to possibly exhibit it on a curved wall as in the Gourmet Room. The ICA’s solution was based on work first presented by Susan Blakney, at the Denver AIC meeting in 1993. Blakney’s model, for lining canvas murals to a semi-rigid support that then is screwed to the wall, giving the appearance the mural is completely adhered to the wall, is familiar to many who work with large-scale murals. So too is the difficulty in getting large scale, industrial textile manufacturers to sell fabric that is sufficiently large and rigid, does not have a strong weave and does not significantly distort when heated. After a considerable amount of research a 1/8” thick polypropylene spun-bonded, needled felt used for filtration was found and a sample was sent to us for testing. The fabric has two surfaces, a smooth “calendared” side and a soft felted side. Both sides were tested for binding strength and reaction to heat. During the heating tests, the fabric did start to distort at 180 F. Several mock up linings were executed, using different techniques such as hand lining, suction table lining and drop lining, to see if any pattern from the lining fabric was transferred to the sample painting. All tests proved favorable. None of the lining techniques showed traces of any surface distortion or weak bond. The soft side of the fabric was chosen for the lining since it was thought that the felted surface would give better adhesion. Should the lining need to be reversed in the future, it was decided to apply an interleaf of thin Reemay, which was also used as the adhesive carrier. The Reemay was coated on both sides with dilute Beva 371 (50:50 in Benzine B264, approximately six roller coats each side) and was then hand ironed onto the needled felt.

The ICA has two hot tables; one is the newer Willard suction table and the other is the older Maxwell vacuum table.
Despite the advancements that the Willard table offers in lining, the Maxwell has the advantage of scale. The ICA’s Maxwell table measures 12 feet by 8 feet, little more than a third of the length of the mural. Thus it was decided to use the Maxwell table and to line the mural in three sessions without the use of a vacuum membrane as sections of the mural would have to be rolled during the process and the whole structure would have been too cumbersome.

Table extensions were constructed at one end of the Maxwell vacuum table to accommodate the entire lengths of the lining fabric and the mural. The lining fabric was unrolled over these surfaces. The mural, rolled face out on to the large diameter tube, was unrolled and positioned on top of the lining fabric. (Fig. 16) Heat was turned on and once the desired tackiness of the Beva was reached, pressure was applied with rubber brayers and foam paint rollers to achieve an adequate bond. The heat was turned off and cooling started approximately twenty minutes after the mural had been placed on the vacuum table. Wooden boards with weights were used on top of the mural with silicon coated Mylar as an interleaf until the surface had completely cooled. Once completely cooled, the lined section of the mural was rolled face out on to the tube positioned at the free end of the Maxwell table so that the next section of the mural could be lined. Again, once the desired temperature was reached, rubber brayers and foam paint rollers were used to apply pressure. Cooling started shortly thereafter, with the mural under weights until completely cooled. This procedure was repeated again for the final section of the mural. (Fig. 17) The gentle pressure applied with rollers produced a bond weaker than a conventional lining but stronger than a nap bond.

Once completely cooled, examination revealed that numerous small sections of the mural were not sufficiently attached to the lining fabric. These were hand lined using Willard irons with variable temperature control. Silicon coated Mylar was used as an interleaf and the treated areas were cooled under weights.

The lining fabric extended approximately 1½ inches beyond the mural on all sides. Brass grommet holes were placed at 12-inch intervals into this perimeter. Scattered residues of methylcellulose still on the surface of the mural were now more visible because they had been burnished by the heat and Mylar used in the lining. These were removed by lightly rolling damp swabs over the surface.

In preparation for transport the lined mural was rolled face out onto the three-foot diameter cardboard tube and held in place with staples attached through the perimeter lining fabric. A separate cart similar to the one used for the de-installation was used for the installation in the Cincinnati Wing. A chalk line was snapped and a small section of the mural was unrolled. Screws and washers were used to secure the mural against the wall. Tension adjustment could be achieved by angling the screws. After the entire mural was mounted onto the wall, a flush frame was installed along the perimeter of the mural, covering the grommet holes.

Due to time constraints aesthetic issues with the mural were not addressed. However, the ICA later collaborated with the CAM once again, thanks to generous grants from Save Americas Treasures and the Getty Foundation. The mural returned to the ICA in April 2008 where the varnish that was applied in the 1980’s was removed, as well as grime and nicotine accumulation from the years in the restaurant. (Fig. 18) Old discolored inpainting was reduced and corrected. The painting was left unvarnished after cleaning, which allows viewers to see the contrast between matte and glossy passages as intended by Miro.

Figures 1-17 photographs by Andrea Chevalier, Figure 18 photographs by John Seyfried

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.
This paper has not undergone a formal process of peer review.
RESTORING JOHN LaFARGE’S MURAL DECORATIONS IN THE TOWER OF TRINITY CHURCH IN THE CITY OF BOSTON

Mary Catherine Betz, Gianfranco Pocobene and Kate Smith

ABSTRACT – Trinity Church, in Copley Square in Boston, MA, was designed by pre-eminent architect Henry Hobson Richardson and dedicated in 1877. Richardson collaborated with the artist John LaFarge, who was contracted to decorate the interior of the church. LaFarge envisioned the interior as a unified whole, combining decorative paint schemes and murals based on religious themes. The media employed were primarily distemper, which is a traditional paint material used for interiors, and encaustic, which was rarely used in decorative painting. LaFarge’s technique was an innovative combination of these different painting media. Currently, Trinity Church is undergoing a major restoration project, part of which involved conservation and restoration of the tower interior’s decorative and fine arts elements. The conservation and restoration of the murals and paint decorations in the church tower was executed as a collaborative effort between the conservation team and the decorative paint firm, with the intent of restoring as faithfully as possible the artistic and decorative schemes of the original. The scale of the project also required logistical planning with scaffolding installation, stain glass removal, as well as the schedule of a large and vibrant church parish.

This paper will cover various aspects of the church’s history, past restoration campaigns, and the challenges faced by the most recent conservation team in reinstating LaFarge’s original design.

James O’Gorman, in his book titled The Makers of Trinity Church states: “Architecture is not the expression of individual genius; architecture is a collective art. Buildings result from collaboration and compromise.” (O’Gorman 2004) Such was the case in the creation of Trinity Church in the city of Boston and such was the case in the conservation treatment of its tower decorations. This paper focuses on the conservation and restoration of the John La Farge murals in the central tower of Trinity Church. The work, which was completed in May of 2005, was undertaken as a collaborative effort between a team of conservators working under the direction of Gianfranco Pocobene Studio and a team of decorative painters from the John Canning Studios.

Designed by the architect H.H. Richardson and consecrated in 1877, Trinity Church is remarkable for its ambitious artistic program of mural, decorative paint and stained-glass decoration. (Fig. 1) In the fall of 1876, with the building almost completed, the American artist John La Farge (1835-1910), was hired to decorate the church’s interior. Richardson and Trinity’s rector, Phillips Brooks, had already conceived of Trinity as a “color church”, bathed predominantly in a rich red tone. This was a dramatic departure from the austere, white-washed churches of the period. This red tone was a very significant part of the restoration project.

The task for La Farge and the team of artists that collaborated with him was enormous. Within a five month period they painted the ceilings and walls of the church interior with a decorative program consisting of monumental biblical figures, angels and narrative scenes, all embellished with ornate decorative paint schemes. Amazingly, much of the work took place during the winter months with little to no heat and often under dangerous working conditions.

Fig. 1. Trinity Church, view from the west, ca. 1880’s

Mary Catherine Betz, Associate Conservator of Paintings, Williamstown Art Conservation Center
Gianfranco Pocobene, Head of Conservation, Isabella Stewart Gardner Museum
Kate Smith, Associate Conservator of Paintings, Harvard University Art Museums
The mural decorations of Trinity Church are executed directly on the plaster walls and wooden coffered ceiling and employ a mixed media technique, namely distemper and encaustic paint accented with gold leaf. These materials had long been used by artists, but at Trinity, La Farge combined them in novel and unusual ways. We know that just before La Farge and his assistants began painting the church interior, the plaster surfaces were first primed overall with a thin coating of water soluble red paint. Over this red priming layer, La Farge and his assistants painted their mural decorations. For flat, simple surfaces such as the prevailing red background and the bands and stripes that frame the murals, LaFarge used distemper paints, which were composed of pigments in an animal glue binder.

La Farge's innovative use of both encaustic and distemper paints produced rich and highly varied effects on the walls of Trinity. The distemper paint layers are generally thin and smooth and produce a matte, velvety surface (point out decorative band). By contrast, the encaustic paint layers are more thickly applied and produce a surface that is rich in color and rough in texture. In some areas the viscous encaustic paint was dragged over the plaster to produce a rich, impressionistic effect.

The conservation treatment of the Trinity murals was a small portion of a much greater project: the restoration and preservation of the church as a whole. The architectural aspects of restoration were carried out by the architectural firm of Goody Clancy Associates and included installing geothermal wells, renovating the undercroft and the parish house, repairing the tower exterior, as well as the conservation treatment of the stained glass windows in the tower.

Before conservation of the murals could begin it was necessary to build scaffolding inside the tower. It was also imperative that the church, which has a large and thriving congregation, be able to remain open for services, weddings, and funerals.

The main platform of the scaffold was an I-beam structure and a specially-designed steel construction. It made it possible to raise the base of the working scaffold thirty feet above the floor, thereby allowing the church to operate on its normal schedule. Atop this steel structure regular scaffolding was constructed, allowing the crew access to the entire tower.

The project's timetable was scheduled in four parts, starting at the ceiling of the tower and working down in increments. The coffered ceiling is 102 feet from the floor of the church. The crew spent 3 months each on the first and second stages, two months on the third, and one month on the fourth and final stage.

Prior to 2005, the last major restoration of the murals was carried out by the decorative paint firm E.K. Perry and Co, in 1956-57, when significant portions of the decorative paint surfaces and background fields surrounding the murals had been extensively repainted and modified. (Fig. 3)

In preparation for the restoration project, an in-depth investigation, which included cross-sectional and media analysis, was conducted in 2001 in the southeast corner of the tower to assess the condition of the murals and paint decorations. Although many of the encaustic surfaces were in excellent condition, there were areas of active flaking and severe paint loss, often as a result of water damage.
This, along with accumulations of soot and grime and deterioration of both original materials and repainted surfaces, indicated that the appearance of the works in the tower had shifted significantly from the visual effects intended by La Farge.

The guiding principle of this treatment campaign was to conserve and restore the tower decorations as closely as possible to La Farge’s original aesthetic intent. In general terms, the object of the project was first, to conserve all original paint surfaces and second, to restore irretrievably over-painted areas to their original appearance. Although these efforts required different skills, conservation on the one hand and historic repainting on the other, the work of the conservation team and decorative painters occurred side by side and sought to unify the tower decorations into a coherent visual experience. During the conservation process we consulted archival photographs, correspondence and publications about the tower decorations, which, along with careful testing and analysis of the paint films, including microscopic and media analysis, allowed us to make measured decisions about the original appearance of the decorations and how their appearance had changed over time. Information gathered through this process contributed to a fuller understanding of La Farge’s painting technique and the condition of the murals, which in turn enabled us to make well-informed decisions during the treatment process.

The challenges of the Trinity project revolved around the distinction between what was considered “fine art” versus “decorative art” and how the two would be addressed in treatment. On a daily basis we applied and balanced the two methodologies of “conservation” and “restoration.” In the case of the former, it is less invasive to the work of art and focuses on stabilizing original material. The latter, often includes extensive re-painting after careful color matching, preserving the artist’s intention, if not the actual material.

The condition of many of the designs throughout the tower necessitated collaborative treatment approaches between the conservators and decorative painters. One such element, was the great coffered ceiling in the tower. The wooden beams and panels of the coffers are painted in distemper, which was found to be powdering and flaking depending on the color passage.

In this instance, however, most of the active flaking was occurring in areas over-painted in the past restoration, namely the sage green scroll pattern and the lighter outline. The original sage color had been covered with a dull gray paint. In contrast, the deep blue ultramarine background was original and never restored in the past, but was very powdery. As the scroll design was re-painted with distemper, the over-paint could not be removed without loss of the original paint layers that remained below.

Consolidation tests were performed with a number of water based adhesives to find a way of stabilizing the flaking paint without discoloring it. In the end this proved to be impossible as the amount of adhesive needed to secure the flaking paint resulted in severe staining and tide lines. The decision we arrived at was to repaint the overpainted passages with a closer color match to the original hue rather than struggle to preserve mismatched restoration in an unsatisfactory manner.

The flaking areas of overpaint were scraped down and the surface was lightly cleaned with latex sponges. It was possible to consolidate the remaining powdery paint with thin spray applications of dilute gelatin in water, which secured the pigment without staining. After careful color matching of the paint layers, the decorative painters reinstated the missing design layers using water based casein paint that could now securely attach to the stabilized surfaces.

As mentioned earlier, we found that significant portions of the decorative paint surfaces and background fields surrounding the murals had been extensively repainted and modified in past restorations. This was corroborated by another of the 1956-57 restoration photos showing the upper north wall of the tower in poor condition and scraped down in preparation for repainting.

We found several isolated areas where the original terra cotta red had not been over-painted in the last restoration. Also, paint samples taken from the walls and viewed under the microscope confirmed that the red field had been over-painted with a red hue that did not properly match the original. It became apparent that during the 1956-57 restoration the hue of the red walls was shifted from a warm terra cotta red to a cooler burgundy color. In the midst of the project, we discovered that two of the Evangelist panels retained large portions of their original red surfaces.
The St. Luke panel provided the critical evidence needed to make the correct recommendation for re-instating the red walls. The uppermost area of the panel, between the border and the left wing, and between the wings, was original.

Once the correct color for the red field was established, the decorative painters painted trial applications and mockups for approval. From early on in the project, it was determined that the original LaFarge distemper colors were irretrievable by conservation methods as a result of their poor state of preservation and the over-paint layers which could not be removed without also dissolving the original layers below. Therefore the original color was reinstated by repainting over the restored red backgrounds with commercial casein paint.

This medium was deemed the appropriate material to accurately replicate the visual characteristics of the original distemper paints used by LaFarge and follows the historic tradition of periodic repainting of this type of interior using like materials.

A surprising discovery, in the form of an uncovered mural, helped us to realize how vibrant the colors of the church originally were. The uppermost part of the tower included twelve lunette murals that were painted above the stained glass windows. We discovered that two of the twelve lunettes were painted on coarse canvasses, mounted with glue and nails on top of an earlier composition that had been painted directly on the plaster. It is unclear why La Farge decided to change his original design.

The poor condition of the canvasses and their tenuous attachment to the wall necessitated their temporary removal so that they could be reinforced with new canvas supports and remounted.

Removing Flight Into Egypt (Fig. 4) revealed a completely different composition painted on the plaster wall below depicting Tribute Money, with Peter retrieving a gold coin from the mouth of a fish. The colors of Tribute Money were far more vivid, having been protected from decades of soot and grime. (Fig. 5) (Fig. 6)

One of the most interesting and complex issues that arose was the treatment of the inscription band that runs around the middle of the tower. This prominent design element is a striking wide band of gold with large text letters spelling out text from revelations: “Blessing and honor, glory and power, be unto Him that sitteth upon the throne, and unto the Lamb.”

Since the 1930’s, according to archival photographs, the band’s text and gilding were ornamented with a green and blue tracery pattern running between the letters. The tracery appeared to be an excessive design element and it interfered with the legibility of the text. Its existence was also confusing as there was no documentation of a design change to this area. (Fig. 7)
In the course of our research we eventually deduced that in the decades leading up to the 1956-57 restoration, flaking paint and loss to the gilding layer revealed an earlier decorative band that La Farge created, but then changed his mind and gilded over it to prepare for the inscription band. In 1956-57 when restorers repainted many surfaces in the tower, both the early tracery pattern and the later inscription were visible as a result of the degradation on the gilding. When restoring the band, they regilded the surface entirely and repainted the text, including the tracery in the process. The result was a visually confusing conflation of the text band with La Farge’s earlier revised concept of a tracery ornament.

When the scaffolding platform was dropped to the level of the inscription band, we discovered a tiny label tucked in the left corner of the north wall. On closer inspection, we realized that this was a typewritten label attached to a large Masonite panel that had been painted to resemble the surrounding painted decoration. The label reads, “THIS PANEL, INSTALLED IN OCTOBER 1957, COVERS A PORTION OF THE ORIGINAL DECORATION AND IS REMOVABLE. FURTHER INFORMATION CONCERNING THE 1956-1957 RESTORATION IS NOTED ON THE BACK OF THE PANEL.” To the reverse of the panel E.K. Perry and Co had attached detailed documentation about their restoration campaign, the materials they used and the names of those on the crew.

The Masonite “time capsule” as it came to be called, was attached to cover and preserve an un-restored portion of the wall. The removal of the Perry panel provided a wealth of information regarding the original appearance of the inscription band. Careful visual examination of the surface along with cross-section analysis of paint samples led us to ultimately re-instate the text band over a gold field that was visible in the earliest archival photographs. The Masonite panel was reinstalled, but partially resurfaced to match the new, historically accurate appearance of the inscription band. Before re-installing it, we also attached a summary record of our conservation treatment of the tower to the back of the panel. (Fig. 8)

An important collaboration that was formed between the conservators, the decorative painters, the architects, Trinity Conservation Committee, and the Trinity Advisory Council informed the mural restoration project from beginning to end. The Advisory Council, consisting of historians, curators and conservators, met on four separate occasions, and provided objective review of proposed treatment philosophies and procedures.

In conclusion, this project was collaboration on all levels. There were multiple groups involved: the church, the architects, the scaffold company, the stain glass conservation crew, John Canning’s crew and our own conservation crew. The conservation and decorative paint crews on the Trinity project had to make treatment decisions on a weekly and sometimes daily basis. The goal was to restore and reinstate as faithfully as possible the artistic and decorative scheme of John La Farge and his collaborators. (Fig. 9) I believe we succeeded.
REFERENCE


ACKNOWLEDGEMENTS

We would especially like to thank our colleagues on the conservation crew: Peggy Waldron, Emily Gardner Phillips, Brigid O’Brien, and David Colombo, as well as John Canning and his crew of decorative painters. Richard Wolbers and Philip Klausmeyer carried out the cross-section/ media analysis during the restoration project. The Trinity Advisory Council helped to guide our treatment decisions and consisted of: Mollie Crawford-Volk, art historian; Kathleen Curran, Trinity Church; Erica Hirshler, MFA, Boston; Ian Hodkinson, Queen’s University; James O’Gorman, Wellesley College; Theodore Stebbins, Harvard University Art Museums; Richard Wolbers, University of Delaware.

Fig. 9. View of the tower after the 2005 restoration

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.
This paper has not undergone a formal process of peer review.
ABSTRACT – The Fogg Art Museum holds in its collection a panel depicting the *Annunciation of the Virgin’s Death* and a fragment of the verso of that panel; *The Virgin Being Borne to Her Sepulchre*. Along with an additional smaller fragment that once belonged in the teaching collection of Edward Waldo Forbes, this panel and its fragments once formed one wing of an altarpiece.

This project addresses some of the art historical and technical queries that have been raised about the panel and fragments since they were accessioned by the museum. To facilitate the technical investigations, and to commence the overall treatment of the *Annunciation of the Virgin’s Death*, the cleaning of this panel was undertaken.

INTRODUCTION


In the same year he also acquired two badly damaged painted fragments that once formed part of the painted verso of the *Annunciation* panel. After a brief period as part of his private collection, Forbes then gave the panel to the Fogg Art Museum.

In a letter to a former student, in 1913, Forbes talks about the condition of the verso painting:

‘The dealer sawed the picture in two and as the left half was practically destroyed, he threw it away, all but a little scrap which I have, and made a framed picture of. As you will it is much repainted, and in very bad condition.’ (Fogg Art Museum Archives, Forbes Correspondence files)

Despite the damaged state of the panels, they quickly attracted the attention of scholars and various publications were produced within the first few decades of their acquisition. In the 1990s, the discussion was revived by the
French scholar and curator, Dominique Thiebaut, who discussed the panels in relation to a set of four panels by Josse Lieferinxe at the Philadelphia Museum of Art (Thiebaut, 1994). Recent treatment of the Annunciation panel has facilitated a better assessment of its original materials and techniques. I will first give an overview of the initial treatment and then discuss the technical investigation of the panel and its fragments. I will also evaluate these findings in light of information from Ross Merrill's 1974 technical investigation of the Lieferinxe panels at Philadelphia Museum of Art (Merrill, 1974).

CONDITION

The Annunciation panel appeared to be less damaged than its two verso fragments. It still had numerous areas of paint loss, however, and had also undergone a number of campaigns of filling and overpainting. The overpaint was thickly applied and had darkened considerably. The panel was also covered in a thick, yellowed varnish layer which had been partially removed, as cleaning tests areas in the form of large squares showed. In ultraviolet light the varnish fluoresced strongly and uniformly across the non-cleaned areas, suggesting the presence of a degraded natural resin varnish.

The structural condition of the panel was of concern. Each member had been thinned to approximately a 2mm thickness. The join interface between each member had receded so that large gaps have formed between boards. The boards were mounted to a laminate board of two thin wood layers backed with a faux cradle structure. After movement in all wood layers and embrittlement of the glue, the laminate sections had separated from one another in some places and from the attached original material. All boards displayed a slight concave warp. A further strategy for the structural treatment of the panel is not an immediate part of the present project, but it is acknowledged that an inventive solution will have to be determined to satisfy the special requirements of a panel made up of eight thin, horizontally joined boards.

TREATMENT

The treatment of the Annunciation began with the removal of the discoloured natural resin varnish. This was achieved using acetone, which also removed a good proportion of the overpaint. After the varnish layer and some of the overpaint were removed, a further two overpainting campaigns were more clearly observed. Tests with free solvents and solvent mixtures were only partially successful.

Solvent gels were then tested for their efficacy. It was found that a Xylene and Benzyl alcohol based gel was effective in addressing some of the overpaint. This gel did not remove the thicker overpaint, but a high swelling Pyrrolidanone-based gel was effective. The softened swollen paint could be sloughed off using mechanical action.

Fig. 4. Applying the gel

ART HISTORICAL CONTEXT

After cleaning, the materials and techniques of the panel were given further consideration in relation to the various art historical questions that had been raised. In 1913 Forbes stated that the panel was 'a curious and interesting picture, the attribution of which has been a puzzle to the critics' (Forbes, 1913). Early 20th century attributions ranged from German to Italian to Spanish to Portuguese, and French schools. The majority of scholars however, felt that Southern France was the likely origin of the panel (Curatorial File, 1910).

More recently the scholar Dominique Thiebaut discussed the Fogg panel in relation to the output of Josse lieferinxe. Lieferinxe was born in 1470 in Flanders and worked in Marseille. Through a combination of his homeland, travels and artistic collaborations, Lieferinxe would have been aware of Flemish, Northern Italian and Burgundian styles and material practices. Thiebaut points out that the combination of Gothic and Renaissance architectural types in the Annunciation panel can be seen in other works of southern French origin (Thiebaut, 1994).

Thiebaut notes that this blend of architectural styles also makes an appearance in some of the Lieferinxe panels at Philadelphia. Thiebaut also asserted that the facial types of the Angel and the red robed figure in the Fogg panel echo some of the figures in the St Sebastian panels in Philadelphia and Rome. The monk in the panel depicting St Sebastian destroying the Idols, and the Cripple in The Pilgrims at the Tomb of St Sebastian also have the long faces, small mouths and the sloping eyebrows of the Fogg panel's angel and robed figure (Thiebaut, 1994).
A complete discussion of the stylistic parallels between the Fogg panel and works attributed securely to Lieferinxe is beyond the scope of this paper. Newly gathered technical data from the Fogg panel, along with previously collected technical information from the panels at Philadelphia, can, however, add to discussions about attribution and school.

TECHNICAL EXAMINATION: SUPPORT

Despite radical alteration, it is possible to reconstruct the panel’s configuration as a doubled-sided panel. In examining the panel from the side, the rays seen on the end grain were orientated in different directions. As a result it is possible to conclude that eight separate boards were used. Most boards were radially cut with upper most board being more strictly radial than the rest. The use of eight boards to make up the support seemed unusual and at first it was assumed that the multiple joins may have been associated with panels alteration. After further investigation however, other occurrences of multi-board construction in early southern French paintings were noted (Wildenstein, 1990) though this was not the case with the Lieferinxe panels at Philadelphia (Merrill, 1974).

Scholars have analysed the supports of works attributed to Josse Lieferinxe. Merrill found that the Philadelphia panels were all painted on Walnut (Merrill, 1974). A further three paintings given to Lieferinxe at the Lourve were analysed by Jaqueline Marette. Two were identified as being on Walnut supports and one on Poplar. Marette also surveyed the support wood types of 15th and 16th century Southern French panels. Of the 57 paintings she examined, she concluded that Southern French painters used a range of woods. The highest percentage of works, at 28%, were painted on Walnut, Poplar was the next most frequently used wood type, followed by Oak (Marette, 1961).

With the unaided eye it was noted that the support of the Annunciation and fragments exhibited the broad characteristics of Oak, such as large pronounced multisteriate rays, large early wood pores and dash shaped ray flecks. A thin section of the support was taken from the small fragment and examined under magnification. This confirmed that the arrangement of the pores and their size, was characteristic of Oak.

GROUND

Grounds in Northern European Medieval and Renaissance painting tend to be of a calcium carbonate animal glue mixture. The grounds of the Philadelphia panels were tested by Merril using microchemical and staining tests which characterised them as calcium carbonate bound with a proteinaceous medium (Merrill, 1974).

The ground layer present on the Annunciation panel is white, conspicuously thin and in cross section appeared in some cases as a double layer, and at other times as a single layer. Samples of the ground layer taken from the Annunciation were analysed by Jens Stenger using FTIR spectroscopy. This
showed that while the white particles were calcium carbonate, they were bound with oil rather than with a protein-based glue. A literature survey of published technical investigations has so far revealed no other occurrences of oil-based grounds on late 15th or early 16th century Italian, French or Flemish paintings. An examination of selected painter’s treatises also uncovered only one appropriately dated reference to oil based grounds, but it concerned the preparation of animals hide for painting, rather than wooden substrates (Theophilus, 1979). Further enquiries are being directed at scholars who may have unpublished information concerning the identification of early oil grounds. The use of an oil ground is a clear deviation from the glue binding media in the grounds of the Lieferinxe panels.

**UNDERDRAWING**

In examining the panel in normal light without magnification some underdrawing was present on the panel. It was most noticeable in the form of dark, diagonal lines. After an overall examination using Infra red reflectography, it was concluded that most of the underdrawing was carried out with a liquid medium probably applied by brush which was used primarily to set out the elaborate folds of drapery and the modeling of them. Further underdrawing was used to denote facial features and their modeling, as well as hands, and the shadowed side of architectural elements.

Painter drawing in the sky perhaps indicates a previous position of the drapery. These lines seem to have been imparted with a dry, friable medium. It is possible that most marks were put down dry first and then reinforced with the darker liquid medium and that the drawing in the sky escaped reinforcement. Cennino Cenini describes this two stage process of underdrawing in his *il libro del’arte* (Cenini, 1960). Cross sections taken from areas containing underdrawing in the angel’s pale drapery reveals that a layer of differently sized black particles is situated above the ground. Technical analysis by conservation scientist, Kathy Eremin using SEM-EDX, has indicated that these particles are carbon based and are probably charcoal. The absence of any phosphorous in elemental mapping has indicated that the black is unlikely to contain bone. Finely incised lines were also used to indicate brickwork and the curved arches of the loggia that were not realized at the painting stage.

Cenini describes this two stage process of underdrawing in his *il libro del’arte* (Cenini, 1960). Cross sections taken from areas containing underdrawing in the angel’s pale drapery reveals that a layer of differently sized black particles is situated above the ground. Technical analysis by conservation scientist, Kathy Eremin using SEM-EDX, has indicated that these particles are carbon based and are probably charcoal. The absence of any phosphorous in elemental mapping has indicated that the black is unlikely to contain bone. Finely incised lines were also used to indicate brickwork and the curved arches of the loggia that were not realized at the painting stage.

In comparison, the underdrawing seen on the Philadelphia panels was used in a similar manner to that on the *Annunciation* panel. Most of the drawing is concerned with establishing the drapery and the faces of the figures. The shadowed sides of architectural elements also feature parallel lines. The Philadelphia panels however, do not have any incision, apart from sight lines that run along the edges of each panel denoting the area to be occupied by the composition.

**PAINT LAYERS**

The technique employed in the *Annunciation* in most areas, is a simple one with most layers being single opaque layers above the ground layer with variations in the ratios of white and an additional pigment to create the modeling and form. Darker areas are created either with the addition of black or with glazes of transparent dark paint.

The artist has used Vermilion for the red robe of the figure. It is also present mixed with lead white for flesh passages and the pinkish brickwork. The use of Vermillion was determined by XRF analysis by Jens Stenger, with its identity being characterized by the appearance of Mercury peaks. Copper peaks were in evidence for the green passages indicating the use of Verdigris, copper resinate or malachite. Further analysis using FTIR established a good spectral match for Verdigris. Copper peaks were also identified after analysis of all the blues and FTIR further established that azurite had been used. A cross section from the Virgin’s robe showed that a pale blue underpainting of finely ground blue particles and white preceded the application of a thick, darker layer of predominantly azurite particles. The coarsely ground nature of the particles in this layer and its high particle content, accounts for the very matte and granular appearance of the passage of painting in the robe in particular. There are few yellow areas in the painting
save for the elaborate border decoration of some of the drapery and the highlights of a small angel's wings. These yellow passages have been identified as lead tin yellow by the appearance of lead and tin peaks in an XRF spectrum.

The angel’s tunic is made up of three red layers with a transparent red used for the uppermost layer. It was predicted to be a lake pigment but in cross section, in UV, a low level of fluorescence was observed in the top layer. Instead strong fluorescence was exhibited by the lowermost layer. Analysis of a sample using FTIR spectroscopy showed that the sample seemed similar to a number of lake standards, yet did not show a strong spectral match to one in particular. This is attributable to the sample containing material from all three red layers. It is proposed that the upper layer may be Kermes, a more expensive lake that was sometimes applied over a less expensive but more fluorescent madder. Occurrences of this economically motivated technique have been noted by scholars in both northern and southern European paintings (Ackroyd et al, 2003 and Dunkerton et al, 2002).

Merrill carried out an assessment of Lieferinxe’s palette by sampling all five panels from St Sebastian series. His pigment identification was achieved through observing the optical characteristics of pigments through polarizing microscopy, and confirmed in some cases with micro chemical tests (Merrill, 1974). The pigments found in the Fogg panel have all been found in the St Sebastian panels (Blewett, 2007).

In summary the recent treatment and technical analysis of the Annunciation of the Virgin’s Death and its fragments, has provided the opportunity to further assess its relationship to some works by Lieferinxe. Certain conclusions can now be drawn. Firstly, the oak support of the Fogg panel is not consistent with the material choice of Lieferinxe as represented by the Walnut and Poplar supports of a number of securely attributed works. Though oak may not be consistent with Lieferinxe’s practice, its use does connect the Fogg work to Northern European practice in general. The use of oak also accords with a Southern French tradition of the use of oak among other wood types, as Marrette’s survey from the region shows.

The use of an oil based ground represents a complete departure from Lieferinxe’s working practice and indeed, at present, from what we know of late 15th and early 16th century practice. The underdrawing on the Fogg panel however, resembles Lieferinxe’s practice in both material and technique though its extent is more limited. The incised lines on Fogg panel do not perform the same function as those observed on the Philadelphia panels. The pigments found in the Fogg panel echo the palette defined by Merril in his investigation of the Philadelphia works, but the technique with which the paint layers are built up in numerous layers is not reflected in the simpler layer systems on the Fogg panel.

At present it is not possible to attach the Fogg panel to the output of particular region or artist. It is true that taken in isolation, the Fogg panel and the Lieferinxe St Sebastian panels do seem to share broad stylistic similarities. It is tempting to assign these similarities to the idea that the works may have been by different but closely associated artists, but at present, a lack of comparative technical and art historical data impedes further discussion of the context of this work. The collection of further technical knowledge will dictate the extent to which the Fogg panel can be more strictly connected to the output of a known artist, or if its materials and techniques as a whole could even be termed as representative of early Southern French practice. The puzzle, for now at least, remains just that.
ACKNOWLEDGMENTS

I would like to thank Kate Olivier, Teri Hensick, Kate Smith, Jens Stenger, Kathy Eremin, Narayan Khandekar, and Henry Lie from the Straus Center for Conservation for assisting me with this project; its associated treatment and analytical and imaging work.

I am also grateful to Stephan Wolohojian, Yao-Fen You and Susanne Ebbinghaus of Harvard University Art Museums, and Henri Zerner of Harvard University, for their art historical and curatorial input.

I would like to acknowledge the assistance of Mark Tucker and Terry Lignelli from the Conservation Department of Philadelphia Museum of Art who shared information and allowed me to examine works in their collection.

I would also like to thank Laura Hogan and Professor Larry Silver from the University of Pennsylvania for sharing their thoughts about Lieferinxe.

I would like to thank Gianfranco Pocobene for discussing initial structural treatment considerations with me. I would like to thank Jody Abbott for her expertise in the translation of vital texts. I would also like to thank my fellow former interns Theresa Smith and Craig Uram for being both insightful and amusing.

REFERENCES


Marette, Jacqueline, Connaissance des primitifs par l’étude du bois, du XIIe au XVIe Siecle, Paris, 1961


UNPUBLISHED REFERENCES

Forbes, Edward Waldo, History of the Fogg Museum of Art, Vol.1, Fifth Revision (unpublished manuscript)

Fogg Art Museum Curatorial Files, 1910. 122 and 1910.123


Conservation Files, St Sebastian Panels, Philadelphia Museum of Art.


Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.
This paper has not undergone a formal process of peer review.
ACCOUNTING FOR TASTE: RETAINING AN HISTORIC RESTORATION FROM A SIENESE ACCOUNTS BOOK COVER

Éowyn Kerr

At the time of publication the author was a Samuel H. Kress Fellow in Paintings Conservation at the Victoria and Albert Museum, London, UK

ABSTRACT – The panels of the Sienese account books, or Tavolette di Biccherna, were originally produced as covers for the civic registers of the medieval office of finance. The Victoria & Albert Museum holds three of the covers, one of which was recently re-evaluated for inclusion in the new Medieval and Renaissance Galleries. Examination showed that the book cover was original to 1402, but that the entire left side had been replaced with a later addition and restoration. Further archival research provided documentary evidence of the panels provenance, linking it to the 19th century German antiquarian, painter, and restorer Johann Anton Ramboux.

Following a collaborative effort between the Archivio di Stato of Siena, and the V&A Curatorial and Conservation Departments, a decision was made to maintain the old addition. This paper will touch on the conservation treatment of the accounts book cover, but more specifically will present the decision by curatorial staff to keep the old restoration as evidence of the history of the object.

1. INTRODUCTION

The work presented in this paper was completed in November of 2007 as part of a Conservation Fellowship funded by the Samuel H. Kress Foundation, and hosted by the Victoria and Albert Museum in London. Conservation treatment and associated research undertaken during that period was directly related to the V&A’s Future Plan. A massive 10-year project including the re-modeling and construction of entirely new gallery spaces for the museums extensive Medieval and Renaissance collections. The new galleries are scheduled to open in 2009. The rotation of the collections, new display areas, and a re-evaluation of the meanings and relationships between objects is the focus of the new gallery plan, and rooms are divided chronologically with objects grouped following a thematic narrative. New catalogues, cases, and a fresh examination of the artwork for the galleries created the need for the conservation and associated research of close to 1,800 museum objects from multiple disciplines.

The Fellowship in Paintings Conservation was developed out of the Medieval and Renaissance Galleries project, and focused specifically on the treatment of 15th century paintings on panel from central Italy. While most of the panels were from large Florentine cassoni, three of the museums Tavolette di Biccherna, or Sienese accounts book covers, were flagged for examination by the Conservation Department (Fig. 1). The study and comparison of all three accounts book covers, and conservation treatment of one of the panels, lead to new research that included both international and interdepartmental collaboration within the museum. The approach, and final curatorial decisions, opened up interesting questions related to the role of the conservator and the perception of conservation as related to the history of an object.

Éowyn Kerr
Conservator in Private Practice and Conservation Educator
Via Urbana 100, Rome Italy 00184
craquelure@yahoo.com
2. LE TAVOLETTE DI BICCHERNA

The painted covers of the traditional Sienese account books hold a long-standing fascination for both collectors and historians. The Tavolette were originally produced as simple wooden book coverings to protect the biannual register of civic account ledgers for the Biccherna and Gabella, or offices of treasury and finance, for the city of Siena. The bound, and often illuminated, volumes contained meticulous records of payments received and disbursed for a period covering nearly 500 years.

2.1 HISTORICAL SIGNIFICANCE AND COMMISSION

The Tavolette came to represent an established patriarchal link to the city of Siena and were often seen as objects of civic pride. The significance of the accounts books within the community created some of the first public commissions for the city. Starting in 1257 the wooden covers of the books were painted with simple depictions of the interior of the Biccherna itself, including detailed information about the accounts records and the families making payments within the related period. As the popularity of the decorated covers grew their commission was given to prominent local artists such as Ambrogio Lorenzetti, Paolo di Giovanni Fei, Sano di Pietro, Francesco di Giorgio, Francesco Rustici, and Domenico Beccafumi, to name only a few. Eventually the subjects became more elaborate and came to include not only civic images but also scenes of religious nature. The Tavolette created visual connections between members of confraternities, religious organizations, and merchant activities, that formed the economic and political core of Medieval Sienese life.

By 1557, with the Florentine overrule of Cosimo I de’ Medici, the workings of the Offices of the Biccherna were greatly diminished. Production of the Tavolette however continued, but they were no longer intended for use as functioning book covers. The pictorial scenes developed into large decorative panels, commissioned independently from their text blocks, and continued until the suppression of the office of the Biccherna in 1786. Today the only official remaining duty of the Offices is the organization of the Palio, or famous horse race.

2.2 PRODUCTION

The earliest covers of the Tavolette di Bicherna depict the elected Camerlengo, or chamberlain, who served as the chief financial officer of the Republic. The Camerlengo held a position of status and was generally chosen from the monks within the nearby Cistercian abbey of San Galgano, known for their training in math’s and record keeping. The Camerlengo was assisted by an official Scrivener, or scribe, who recorded transactions using a complicated double entry system. These final accounts were then copied into the ledgers, or the text block of the Tavolette of the Biccherna. Early decoration of the covers of the Tavolette prominently displayed the coats of arms of those families charged with overseeing the financial proceedings within a given period. With this system each semester book recorded the names of the elected chamberlain, notaries, and scriveners handling the finances, as well as the names, social position, and often the profession of the citizens responsible for the various transactions. Generally six familial coats of arms can be found on any one panel, and the intricacies of social and political alliances were subtly presented in their positioning and relationship. The public display of coats of arms is still an integral part of contemporary Sienese life, and there continues to be strong attachment to these powerful images.

Technically the decorative book covers are very similar. They consist of two small wooden panels held together with leather straps or thongs, attached along the left edge or spine of the book. The panels, or boards, have grooves cut into the wood to allow for the attachment of the leather. These are located on either the spine edge or on the inside of the boards. The text block was sewn and inserted between the protective panels, and attached to the leather to create a hard cover for the binding. Early Tavolette often have an additional wide leather strap around the middle of the volume in order to fasten the book. The fastening straps were attached to both the boards of the front and back covers. Some of the Tavolette have cover panels with the verso decorated in false marbling, but the detailed paintings were specifically reserved for the visible front panels.

The covers of the accounts books were typically painted in tempera on a thick, buff colored, gypsum based ground, with the panel support made from poplar wood. The wood panels were consistently cut with the grain running vertically. Decorative floral or vegetal elements along the borders, and often detailing the coats of arms, were achieved through gilding on a medium red bole. These areas were then enhanced with tooling and decorative punchwork. Some panels have additional embellishment in silver or metal leaf. Because of consistencies in the
panels, dimensions, preparation layers, and tooling style, it is possible that the early book covers were produced by a joiner and were later sent to be painted in the artist's studio. Style and consistency in the lettering of the text also indicate that the inscriptions were added separately from the other decorative elements. The panels show little divergence from the contemporary methods used for panel paintings as described in Cennino Cennini's late 14th century Il libro dell'arte.

2.3 OBJECTS FOR COLLECTION

The painted Tavolette are now rarely found intact with the text block attached, and most are exhibited as individual objects in decontextualised settings. Interest in the accounts book covers as a testament to familial lineage in Siena created the first phase of dissemination of the records, and the related deconstruction or separation of the books from their covers in the early part of the 18th century. This in turn created a contemporary market for forged panels with falsely ascribed coats of arms, available for sale in and around the city. Early 19th century European collectors of the so-called “primitive” arts saw the Sienese panels as requisite items for their collections. Thus leading to a second wave of forgeries, created to sell to the foreign markets active in the 19th and 20th centuries. A Sienese tradition carried on by known copyist and forgers such as Icilio Joni.

Today the accounts book covers can be found in both public and private collections around the world. The largest collection of Tavolette is housed and exhibited at the Archivio di Stato of Siena. The formal state run archive was established in 1858 and is located in Palazzo Piccolomini, adjacent to the Palazzo Pubblico on the main piazza of Siena. The original room of the Biccherna with payment counter, strongboxes, and characteristic barred window can still be visited in the Palazzo Pubblico. In 2002 the Archivio di Stato created new displays and cases for all 103 of their panels. The exhibition corresponded with the introduction of the Euro currency in Italy. The related exhibition promoted new research and publications on the collection of the Tavolette di Biccherna. Nearly all of their panels were systematically restored for the new museum display.

3. THE V&A TAVOLETTE

The three Tavolette di Biccherna panels in the collections at the Victoria and Albert Museum were originally housed within the museums National Art Library. All three were purchased at auction at the end of the 19th century and have histories laden with question. Only one of the book covers, January-June of 1402 (V&A 414-1892), is considered to be stylistically more authentic than the others and the panel was re-evaluated and chosen for inclusion in the new Medieval and Renaissance Galleries (Fig. 2). The curatorial staff was most concerned with displaying the panel that best represented the Tavolette for artistic quality, authenticity, and state of preservation. The January-June of 1402 account exhibited the fewest conservation problems and had a more substantiated provenance provided through the extensive research of Ronald Lightbown in 1963.

As with the majority of the early Tavolette, the upper half of January-June of 1402, depicts the actual Office of the Biccherna and its related functions (Fig. 3). In this case the Chamberlain can be seen in red behind the counter, taking a bill from the official Scrivener, shown in blue with a red cap. The three citizens in the foreground, making payments, are depicted on a slightly smaller scale. The Scriveners implements are visible on the counter and include inkwells, quill pens, penknives, parchment scissors, and a blotting sponge. The shelf on the back wall displays open accounts from the same January – June period, and at the very top of
the panel is the black and white Balzana, or municipal coat of arms of the Commune of Siena. Along the left and right of the image are the two strongboxes, and the far right edge depicts the barred window of the Biccherna. The lower half of the image contains the inscription in black lettering on a white background (Fig. 4). Six coats of arms represent the Palmierini (or Palmieri), Agazzari, Tolomei, Brizi, and Ubertini families, and the far left shield is not known or identifiable. The positions and names of the six family members indicated with the coats of arms are cross-referenced in the text, with the inscription reading:

QUESTO E ILIBRO. DE LENTRATA. E DELVSCITA. DE LLA. GIENARAL BICHERNA. DEL COMVNO. DISIENA. ALTEMPO. DE SAUII. HVOMINI. NICHIOLO. DI LEONARDO. DELA GAZAIA. CAMARLENGO E. DI. GIACOPO. DI. TOMASSO. PETRIVCCI. EDI. BENVCCIO. DI. LVCA. DI. PALMIER. SPADAIO. EDI. IAOCOMO. DANBRVOGIO. BRIZII. LANAIV. OLO. DI. TATO. DI. FRANCIESHO. IALOMEI. CAMARLENGHO. E. QUATTRO. DELLA. DETTA. BICHERNA. DALENDE. GIENAIO. M CCC. I. INSIMO. ADULTIMO. DIGIVGONO. M.CCCC. II. E DI. MIS. DI. RICCHO. VBETINI. LORO. SCRITORE

The January-June of 1402 panel shows no particular diversion from the traditional methods of execution used for the Tavolette. Examination indicated that there had been several campaigns of restoration, though only one mention was made in the V&A files related to stabilization of the support. More notable was the difference in the paint layers and uneven surface along the entire left edge (Fig. 5). This area of the image was noticeably heavily restored and originally caused some concern about the authenticity of the panel. There were also significant discrepancies found in the painted text and the coats of arms, corresponding to the altered left side of the panel. Careful examination of the object showed that the book cover was likely original to 1402, but that the entire left side had been replaced with a later addition of both the panel support and pictorial layers. The restored section exhibited similarities to techniques used by forgers to hide fakes by damaging them and adding heavy restoration.
3.1 CONDITION

The primary support is constructed of one plank of poplar wood (sample analyzed at the British Museum) with the grain aligned in the vertical direction. The panel support exhibits a marked left to right convex curve caused by the natural warp of the wood panel. At some point the left side sustained significant damage to the panel and was replaced with an insert of a type of soft wood that is different from the original. The damage to the original left edge seems to be related to insect attack and subsequent structural damage from the wood beetle tunnels. Two of the three original grooves of the binding attachments (central and lower) can still be seen on the verso along the edge of the replacement section of wood panel.

The panel is generally in stable condition. The replaced section along the left edge was adhered directly to the original, and was attached with an animal glue (possibly hide or bone) which was subsequently reinforced with wax and fill material. The original support was trimmed along the damaged portion to create a clean gluing edge (Fig. 6). There is no record of the date of repair. At some point the panel split into two pieces and separated down the center following the vertical grain direction. The two sections were repaired and joined using a wax or wax resin, and reinforced from the reverse with an epoxy resin. Several vertical splits in the support are also visible following the grain direction. These have also been repaired and are quite stable.

Of note is a folio of cotton hand laid paper, adhered directly to the inside of the accounts book cover (in this case the verso of the object). The paper is in good condition and was evidently attached prior to the damages to the support. The folio is hand inscribed in what appears to be iron gall ink lettering. The inscription on the folio reads “Number 26 of 1401”, differing from the inscription on the panel image, with the dates of January – June of 1402.

The ground consists of an evenly applied layer of animal glue and gypsum priming, characteristic of Italian paintings of this period. This gesso ground is roughly 4mm thick and of a buff color. The paint layers are characteristic of tempera, and were applied using low impasto and even brushwork. Pronounced craquelure is visible in raking light, and showed large islands of paint in the central figures and in the upper right corner. Much of the surface texture of the panel exhibits cracking in the paint layers and heavy abrasion, particularly surrounding the areas of lettering. The entire left side, corresponding to the replacement panel, has been reconstructed to match the original. The surface texture, color, and brushwork of the addition were noticeably different from the original when examined closely. Passages of the composition were reinforced and overpainted, particularly in the lettering and along the repaired central crack. The area with six shields depicting coats of arms was also overpainted, with complete reconstruction in the shield on the far left.

Discreet sections of the composition and the decorative border were created through the application of gold leaf and enhanced with tooling and punchwork. The gold was applied over a layer of dark red bole, which is now visible as much of the gold leaf has been abraded, revealing the bole and the ground layers. Remnants of silver leaf are visible in the writing implements on the desk. The surface of the panel was covered with a layer of dust and black greasy grime. Low points in the pronounced craquelure and most of the tooling held what appeared to be dark gritty grime, resembling dried mud. Wax had been rubbed into the surface along the join line of the split in the panel, and wax residues were found in the tooling of the gilding, when viewed under magnification. The panel did not appear to be varnished.

3.2 HISTORY AND PROVENANCE

The condition of the panel, presence of the folio on the verso, and the discrepancies found in the painted text and the coats of arms, promoted the need for additional research. A visit was arranged to the Archivio di Stato in Siena in order to better understand the unique history of the Tavolette, and to discuss current practices used for conservation treatment, pictorial reconstruction, and the display of their large collection of accounts book covers.
Particularly important to the visit was the examination of a number of archival and historical documents related to the Biccherna. The most useful was a large tome dated to 1724, written by the genealogist and antiquarian Galgano Bichi, referred to in the research of Lightbown. In the manuscript *Copia delle Arme gentilizie, e dell’inscrizioni, che sono espresso nelle Tavolette* Bichi faithfully recorded the inscriptions of each of the Tavolette, and copied the related coats of arms. Also noted was that after flooding in the Biccherna archives many of the text blocks had been separated from the wooden covers, and the covers had been rapidly disappearing. Within Bichi’s lifetime the majority of the Tavolette from the Biccherna and Gabella were dispersed.

The page of Bichi’s manuscript corresponding to the V&A panel was located (Fig. 7). His illustration showed that the coat of arms at the far left (missing and overpainted in January-June of 1402) was that of the Petrucci family, which was consistent with the inscription on the panel. Bichi’s script is also distinctive, and it was immediately clear that the folio adhered to the verso of the V&A panel was by the same hand. The lettering, color of the ink, and the size and quality of the paper from both the Bichi manuscript and the panel were nearly identical (Fig. 8). In addition, both documents are labeled Number 26 of 1401. Which was confirmed as Bichi’s own numbering system. The discrepancy in the date was due to an adjustment in the start of the calendar year. The V&A panel is indeed January-June of 1402. This provided solid documentary evidence indicating that the Tavoletta was still within the original collection in Siena as of 1724.

Two panels at the Archivio di Stato were examined with the hopes of establishing a firm attribution. Both *July-December of 1388* (AS Siena, no. 20) and *January-June of 1394* (AS Siena, no. 22) are by Paolo di Giovanni Fei, and show remarkable similarities to the V&A’s *January-June of 1402* with their depiction of the interior of the Biccherna, and in the tooling (Fig. 9). Establishing the attribution was not entirely successful, but additional information was gained through discussion with the conservators of the panels. Though recently restored, the *January-June of 1394* Tavoletta had a very similar profile to that of the V&A’s panel (Fig. 10), with an addition to the support and extensive restoration along the left side. Before the restoration, both panels were
found to have similar additions with unusual profiles, similar gray fill material, and reconstructions of the missing images (Fig. 11). The photos of brushwork and texture of the original, old, restoration were also comparable and looked to be by the same hand.

Through examining the records, both panels were found to have been purchased from street vendors in Siena by the German antiquarian Johann Anton Ramboux (1790-1866). In the case of the Archivio di Stato panel it was re-acquired in 1867 after Ramboux’s death, and was the only period that January-June of 1394 account left the collection in Siena. Between 1832 and 1842 Ramboux purchased thirty-one of the Tavolette as part of his extensive and growing Italian collection, and he was one of the first collectors to promote Siennese artwork in Europe. Ramboux was also an established artist in his own right, having studied in Paris under Jacques-Louis David. He eventually joining the Nazere Brotherhood of painters in Rome, who were greatly influenced by the works of the late Medieval painters in Tuscany and Umbria.

Ramboux was best known for his career as Senior Conservator of the newly acquired Italian “primitives” collection in the Cologne Museum, known as the Wallraf-Richartz. In this role he was essentially the curator of the collection, and was also engaged as the buyer of Italian artwork for Ferdinand Wallraf. He was known to have practiced restoration on both the museum objects as well as his own collection, which included the accounts book covers. The Tavolette sold at auction after his death in 1867. The auction of Ramboux’s extensive Italian collection became the seed for several Medieval and Renaissance galleries throughout Europe and the United States. From the sale a large portion of the paintings ended up in London, with the January-June of 1402 panel eventually finding its way into the Victoria and Albert Museum in 1892.

3.3 TREATMENT

Because of the new research and an established chronology of the provenance of the January-June of 1402 Tavoletta, and the fact that no major conservation treatment had been carried out on the panel since its acquisition, the curatorial staff at the V&A felt strongly that the addition and restoration was by Ramboux himself. A collective decision was made to keep the historic restoration intact, as he was an identifiable and notable collector and artist, who had impacted the history of the object. The two sections of the painting were essentially treated differentially, which was only possible as very little of the addition and old restoration extended over the original surface.

The actual treatment of the V&A panel was fairly straightforward. There were no major structural problems, and the majority of the treatment time was spent on the cleaning and removal of imbedded grime from the paint surface. Residues of wax from the original join were found in the low points of the tooling and along the join, as well as some minor inpainting over damages in the original paint layers. The restoration had been toned to match the darkened and discolored tonality of the painting. In addition to a generally dark appearance of all of the colors from gray or dark surface matter, the majority of the grime was embedded in the low points of the punchwork over a visibly abraded layer of gilding (Fig. 12). The dark grime was also very noticeable in the deep cracks in the paint layers. This was gritty and particulate, and resembled dried mud.

Paint layers along the join edge were first consolidated using a warmed 2.5% solution of sturgeon glue. Much of the grime was removed through surface cleaning using very dry swabs wetted either with saliva or a 3% solution
of Tri-Ammonium Citrates at a pH between 8.5 and 9. Both aqueous and solvent gels were applied locally, and some residues or areas with very greasy grime were removed either using a 4% solution of Vulpex soaps in White Spirits, applied locally with a small brush, or N-methyl-2-pyrrolidone applied with small swabs. Scalpels were used to remove accretions and heavy grime residues softened during previous phases of cleaning. The majority of the gritty and embedded grime was painstakingly removed mechanically, with micro picks, under magnification, in order to recuperate the remnants of the delicate gilding.

Most of the old fills were also removed mechanically. The panel was varnished with a 10% brush coat of Paraloid B-72 in Shellsol A to keep a fairly matt, and unvarnished looking finish. New fills were added with a Mowiol and chalk mixture bulked with microballoons, and the inpainting was carried out with Gamblin Conservation Colors (Fig. 13).

The V&A Tavoletta was in exceptionally good condition compared to many of the panels in the Archivio di Stato of Siena. The area where the far left coat of arms was damaged or completely missing over the original support was reconstructed to match that of the Petrucci family. The curatorial team decided not to have the missing text in the inscription re-constructed, which is in keeping with current ideas about how to treat the Sienese accounts book covers. The final result provides the viewer with a clear visual definition between the old and now historic restoration, and the original panel (Fig. 14).

4. CONCLUSION

What is most interesting to the conservator in this case is the idea of the historic restoration. This type of treatment brings up questions as to our role as the conservator, and in our changing tastes in relationship to the histories of our objects. All of our treatments are subjective, and with this object the choice was to maintain something that could easily be removed or changed again at a future date, but that currently preserves a moment of the panels history. Thus incorporating the work of the restorer into the history of the object. There may ultimately not be a “right” decision, but this was one that satisfied multiple interested parties, and it is a treatment decision that can be modified in the future.

The Tavoletta of January-June of 1402 will be going on permanent display in the new Medieval and Renaissance Galleries, and can be found in the section dedicated to Merchant Life.
ACKNOWLEDGEMENTS

I am infinitely grateful to the Samuel H. Kress foundation for funding both the project and my travel to attend the 36th AIC Annual Meeting in Denver to present the work. As with any project it is nearly impossible to accomplish anything alone. This was truly a collaborative effort, and I would like to thank all of those people that have been more than generous with their time, expertise, and friendship during my Fellowship year in London. Of particular mention is my host institution the Victoria and Albert Museum.

I would especially like to thank Nicola Costaras, Head of Paintings Conservation at the V&A for her wonderful mentorship and patients throughout the year; my lovely colleagues Rachel Turnbull and Sally Marriott; Angelina Barros D’Sa who expertly completed the treatment; Jane Rutherton for her full support; Carolyn Sargenton for working to procure my Fellowship funding; Mark Evans and Peta Motture for their informed advice, along with Kirstin Kennedy, Marta Ajmar, Flora Dennis, Ketty Gottardo, Rowan Watson, who all gave numerous hours and invaluable assistance from the V&A Curatorial and Research Departments; the V&A Image department; Carla Zarrilli, Director of the Archivio di Stato, along with Elisabetta Razzi and Simona Pozzi from the Pinacoteca of Siena for graciously sharing their expertise; Noelle Ocon for encouraging me to participate in the AIC Annual Meeting; and the assistance of the FAIC.

REFERENCES

Baxandall, M. 1972. Painting and Experience in Fifteenth Century Italy, Oxford
Bichi, G. 1724. Copia delle’Arme gentilizie, e dell’inscrizioni, che sono espresso nelle Tavolette, Archivo di Stato di Siena, Manuscript (Ms D-10)
http://original.britannica.com/eb/article-9055105/Nazarene
http://de.wikipedia.org/wiki/Johann_Anton_Ramboux
Lisini, A. 1901. Le tavollette dipinte di biccherna e di gabella del R. Archivio di Stato di Siena, Siena
Ramboux, J. A. 1862. Katalog der Gemalde alter italienischer Meister (1221-1640) in de Sammlung des Conservator, Cologne
Sale catalogue 1867. Catalogue des Collections d’Objets de d’Arte de la succession de Mr. Jean Ant. Ramboux, Cologne, 23 May
Tomei, A. et all 2002. Le Biccherne di Siena, Arte e Finanza all’alba dell’economia moderna, Rome

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.
This paper has not undergone a formal process of peer review.

60
THE REPRESENTATION OF BROCADED SILKS AND VELVETS IN 15th AND EARLY 16th CENTURY NETHERLANDISH PAINTINGS: METHODS & MATERIALS

Bart J.C. Devolder

ABSTRACT - This paper discusses the painted representation of brocaded silks and velvets in Netherlandish paintings from the 15th to the early 16th centuries. The first part of the paper elaborates on the monetary value and the socio-symbolic function of the depicted fabrics. The second part of the paper deals with the techniques used to represent these fabrics in paintings. These findings are based on the technical examination of a core group of sixteen paintings from the National Gallery of Art, Washington, DC as well as several paintings from other institutions.

INTRODUCTION

This research project is the result of an Andrew W. Mellon Fellowship in Painting Conservation at the National Gallery of Art, Washington, DC. The idea of this project was born from reading several articles in technical and art historical publications regarding Netherlandish artists. Netherlandish, as it is understood in this paper, refers to Northern Renaissance art made in a region currently consisting of Belgium, The Netherlands and Luxembourg plus Burgundy and other Northern French provinces. In some cases artists from more Northern or Southern regions are included because of their close relationship in technique and/or style with the Netherlandish painters.

Netherlandish paintings from the 15th and early 16th century often show very elaborate brocade patterns in the fabrics they depict. These textiles, mostly of Italian silk and sometimes imported through Bruges, were a sign of wealth and luxury. Since 1317 there was a well-established contact between Italy (Venice) and the Low Countries; Venetian merchants even received a tax discount for selling to the Low Countries (De Francesco 1939). According to the art historian Duits (2001), the Lucchese merchants dominated Bruges until 1468, when Tomasso Portinari ascended and the Florentines gained monopoly.

According to Pero Tafur, a merchant from Córdoba who visited Bruges in 1437, Bruges was by then a vibrant city that imported a great deal of luxury goods:

"Bruges is large and very wealthy and one of the greatest markets of the world, ... thither repair all the nations of the world... and they say that at times the number of ships leaving the harbour exceeds700. The city of Bruges has a very large revenue and the inhabitants are very wealthy. Anyone who has money, and wishes to spend it, will find in this town alone everything which the whole world produces. [...] Here was all Italy, with its brocades, silk and armour and everything which is made there...." (Monnas 2000, 147)

Beginning in the mid 15th century Bruges started to lose some of its prestige as Antwerp became more important. However, this had little direct effect on daily life in Bruges, since according to the art historian Martens (1994), the standard of living there was much higher between 1440 and 1470 than it had been before. The Antwerp markets became increasingly more important, because the artists could sell their products there the year around.

The painters were so fascinated by these imported textiles that they often depicted them either realistically or illusionistically in their paintings. It seemed important to devote part of the research towards understanding the actual fabrics. To that end, the early part of this paper explores the value of the fabrics at the time of their production and the importance of these fabrics as a status symbol to the people who purchased them. Undoubtedly, the owners of these fabrics found a similar status in commissioning painters to portray these fabrics in their paintings.

The next part of the research explores the various techniques the painters utilized to represent brocaded fabrics in their art. During the research it became apparent that much of the information on the representation of brocaded silks and velvets was very limited and ‘hidden’ in technical articles. For example, several scholars mention the use
of templates, pouncing or other mechanical ways of reproducing the designs, but no extensive research has been carried out on the actual procedure(s) and materials (Taubert 1975 & 1978). To quote Goddard (1985, 404): exactly how the patterns were transferred must, for the moment, remain something of a mystery. The essential question that this section of the paper seeks to answer is: How were painted brocades executed/applied and are there significant differences and/or similarities between how different artists executed them?

Sixteen paintings from the National Gallery of Art's Northern Renaissance Collection were chosen as the core paintings for this research' and were examined². These paintings were made by masters ranging from Van Eyck to the Master of Frankfurt and cover a time period from 1434 to 1520. Related paintings from national and international collections were added in order to have as much comparative data as possible. Sometimes the data on this second group of paintings was limited to information obtained by visiting the galleries with a hand-held loupe (Antwerp, Berlin, Dresden, …) others were more thoroughly examined by having access to microscopes and scientific files (London and Philadelphia).

MONETARY VALUE AND SOCIO-SYMBOLIC FUNCTION OF THE FABRICS

Because of the technical expertise it took to manufacture velvet, the expensive raw materials and the beautiful aesthetic of the fabric, owning these textiles became a status symbol of the newly created elite classes of the period. These elite classes power could now be based strictly on their wealth instead of descent. Those purchasing velvets were well aware that the more complex the techniques used in production the higher quality and more expensive the fabric (Orsi Landini 1999b). To accentuate their sense of status, the clientele for these cloths therefore sought out the higher quality, more expensive examples. When the same people commissioned paintings they were understandably concerned that their status was 'correctly' depicted by the quality of the brocaded fabrics painted by the artist.

An example was the contract between the Flemish painter Saladijn de Stoevere and the donor Willem de Busoen, from the 14th of October in Ghent 1434 for the painting and decoration of the shutters of a carved wooden retable for the Franciscan church in Ghent. The contract states clearly that the angels, Virgin and other figures needed to be painted in a cloth of gold brocade in a specific color (Duits 2001; Vandamme 1982). This contract shows that the representation of rich materials and especially gold brocaded textiles was very important for the donor, as it represented his wealth and good taste. According to art historian Duits (2001), sometimes the donor required a larger quantity of gold brocaded textiles to be depicted in the painting than the amount he actually owned, therefore conveying to him a higher status.

These fabrics were luxury items in the strictest sense of the word because of the materials needed to manufacture them (gold (Table 1), silk and natural dyes), the skilled weavers and the long production process. With the most elaborate fabrics it took a year to weave 60 meters, which is less than 20 cm a day (Orsi Landini 1994, 33). Because of the rarity of the highest quality brocades, many types of cheaper imitations became available including heat-stamped solid velvets or painted and printed ones (Orsi Landini 1999c; Mayer-Thurman 1975). The brocaded fabrics were so expensive that nothing was wasted; even the scraps were used for shoes or sleeves (Orsi Landini 1999c). According to the 15th century Florentine Arte della Seta also known as Trattato dell'Arte della Seta (a treatise on silk manufacturing). There were five types of gold brocaded velvets, based on the amount of gold thread used per braccio (around 60 cm)³.

<table>
<thead>
<tr>
<th>Amount of gold thread used in ounces per braccio</th>
<th>Price in florins per braccio</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>1.5</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>4.5</td>
</tr>
</tbody>
</table>

Table 1. Relationship between the amount of gold thread and the price of finished product. (Duits 1999, 64)

To put the above-mentioned amounts into perspective it is interesting to compare them to other textiles and luxury items. The following tables are based on Duits’ (1999) findings.
<table>
<thead>
<tr>
<th>Fabric Type</th>
<th>Price in florins per braccio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imported <em>alto e basso</em> velvet from Luchesse (bought in Bruges)</td>
<td>10-11</td>
</tr>
<tr>
<td>Velvet silk (non-brocaded)</td>
<td>3.5</td>
</tr>
<tr>
<td>Best woolen Flemish cloth</td>
<td>2.5</td>
</tr>
<tr>
<td>Taffeta silk (non-brocaded silk)</td>
<td>0.75</td>
</tr>
<tr>
<td>Linen from Reims (very fine quality)</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Table 2. Comparison of the value of different kinds of fabrics

<table>
<thead>
<tr>
<th>Product/ salary</th>
<th>Price in florins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Madonna painting by Fra Angelico (based on Medici inventory 1493)</td>
<td>5</td>
</tr>
<tr>
<td>Cook tondo (NGA) by Fra Angelico (based on Medici inventory 1493)</td>
<td>100</td>
</tr>
<tr>
<td>Most skilled silk weaver’s annual salary</td>
<td>160-170</td>
</tr>
<tr>
<td>Jan van Eyck as court painter (before 1434) annual salary (he also received housing, etc.)</td>
<td>50-55</td>
</tr>
<tr>
<td>Jan van Eyck’s annual salary as a court painter (after 1434)</td>
<td>360</td>
</tr>
</tbody>
</table>

Table 3. The value of other luxury products and salaries for comparison purposes

Even the Medici family could hardly afford elaborate gold brocaded garments. It was different in the Low Countries, where Philip the Good of Burgundy spent an equivalent to 36-42% of the Medici’s annual income between 1432-33 on gold brocade alone (Duits 1999). It is known through his household account books that he bought most of his fabrics from Italian merchants such as Melian, Guidecon and Arnolfini and that he purchased them in Bruges (Monnas 1991). Historians have pointed out the semiotic importance of textiles within the languages of Valois-Burgundian politics. We can see it in the paintings and also in the decorative borders of manuscripts (especially in devotional books) that they commissioned (Goehring 2006).

**WHAT ARE THESE BROCADED SILKS AND TEXTILES**

For this paper the terms brocaded silks and velvets were chosen, this to avoid the often used, but too general term ‘brocade’. The use of this term is not recommended by C.I.E.T.A. (Centre International d’Etudes des Textiles Anciens) because of the lack of technical precision (Duits 1999; C.I.E.T.A. 1964). Brocade is usually used to identify a type of fabric rather than a weave structure and it also refers to a way of patterning by the usage of supplementary elements (Emery 1980). The term ‘velvet’ comes from *vello* or *velutto* meaning fleece, because of its resemblance to a fur. There seems to be no consensus among scholars about the origin of velvet; it could have originated in Arabic countries, India, Persia, China or in all of them simultaneously (de Marinis 1994; Buss 1996).

Two types of pattern were extremely popular in the textiles: *la griccia* and *cammino*. Both terms appear in a 1487 treatise that was first published by Gargiollo in 1868. There is still some disagreement among scholars on the precise
meaning of these terms. Several scholars use them to describe two patterns: a) La griccia, a wide pattern with an asymmetrical design depicting a large winding stem or branch interrupted by highly stylized thistle flowers, pine cones or pomegranates. This type still has a fourteenth century composition with a monumental dimension to the pattern on a heavy and stiff fabric. This type of pattern was often used for ecclesiastical garments. And b) cammino, a simpler and symmetrical pattern, centered on the pinecone and pomegranate design, became popular in the mid 15th century; because it was lighter and less imposing it was chosen for rich, non-formal clothing in Italian courts, fitting the Renaissance philosophy of harmony, balance and unity (Orsi Landini 1999a, 1994; Buss 1996; Ackermann 1996).

There were a lot of different types of velvet. In the paintings examined for this paper, most of the velvets pictured were pile-on-pile (alto e basso) velvets. With these fabrics the pile is woven in two or more different heights to form a pattern; they can be made more luxurious by the insertion of an additional silver or gold weft.

**EVOLUTION OF THE TECHNIQUES USED TO PAINT BROCADED FABRICS**

**A. Literal representations**

Before the 15th century, when Van Eyck and other artists experimented with oil paint and glazes in the Low Countries, it was a common practice to use actual three-dimensional representations, or literal representations of elaborate textiles. The art historian Duits (2001) calls these representations *imitative*, meaning that the artists tried to mimic the real texture and shine of the gold brocaded textiles. In order to obtain this shine the artist used actual gold leaf. Some of these literal methods were still used during Van Eyck’s time by people who painted the decoration on sculptures and occasionally in paintings.

Five decorative techniques can be catalogued under literal representation. Three of them are more common in Italy and are briefly mentioned in order to compare them with the techniques that were predominately used in the north:

**Type I. Engraving in the gilding and sgrafitto**

With this technique the pattern is engraved in the preparation layer and than gilded (Westhoff and Hahn 1996). This technique is often used in Italy but examples of it are also present in Northern paintings. Another similar technique mentioned in the literature is Scharriertechnik, where the ornament is created by making use of vertical, incised lines placed very close to each other (Scherer 1998). The sgrafitto technique consists of a paint layer that is applied on top of a gilded area. The decoration is consequently scratched into this paint layer to expose the gold underneath.

**Type II. Punch marks or tooling**

In Italy the technique of *punch marks or tooling* was probably the most often used to represent gold brocaded textiles. In this technique metal punches are hammered into a gilded layer, resulting in three dimensional imprints (Skaug 1994; Westhoff 1996). This technique was sometimes used in pre-Eyckian times in the North.

**Type III. Pastiglia.**

In the *Pastiglia* technique the outlines of the textile were applied by the painter on his preparation layer by free hand drawing or by pouncing. The brocade pattern was then built up in multiple layers with a brush, usually in the same fill material and glue as the preparation layer. The layers could be reworked wet and dry and were gilded afterwards (Westhoff 1996).

Recipes for this technique can be found in Cennino Cennini (1960) and in the 15th century South Netherlandish Sloane M.S. nr. 345 from the British Museum (Vandamme 1982).

The following techniques are more common in the northern countries:

**Type IV. Prefbrokate**

*Prefbrokate* is a technique that, for the most part, employed pre-modeled sheets of tin, although some variations of the technique did not use tin sheets at all. To begin the technique a thin piece of tin foil was placed, rubbed or hammered, into a stone or wooden mold. Then, when still in the mold, the form was filled. The filler could consist of chalk, paper, or pigments, which were combined with glue, resins, peck, wax, oils or any combination of these. After
this filler dried, the tin sheet was lifted out of the mold, cut to size and attached to the painting. The tin sheets used for this technique were usually square and measured between 6.2 and 23.9 cm (Vandamme 1982; Westhoff 1996; Strähle 2005; Ravaud 1999; Fock et al. 2003).

Recipes for this technique can be found in Cennino Cennini (1960) and in the Liber Illuministarius from Tegernsee, 1503-1508 (Vandamme 1982). Sometimes this technique imitates the gold brocaded textiles very accurately. To accomplish such imitation the artists painted only the flat parts of the molded metal. The higher parts received a yellow colored glaze to turn the tin into gold. These gold colored higher parts imitated the patterns created by the gold thread. Sometimes the same Preßbrokate sheets, originating from the same mold, could be found on paintings and objects in the same setting. This could be an indication of collaboration between two artists or evidence for a specialized workshop at work. Small defects in the mold can be used almost like a fingerprint in re-uniting dispersed retables. Preßbrokate was a popular technique from the second quarter of the 15th century until the first half of the 16th century, particularly in Germany. A very rare variant of this technique is achieved by gluing plain pieces of textile to the painting in the preparatory layers which are then gilded and decorated with a brocade pattern during the painting process (Vandamme 1982).

**Type V. Creating a pattern by leaving the gold exposed.**

In this technique the pattern is created by leaving the gold in reserve.

**B. Illusionistic representation**

The evolution in painting techniques introduced by Netherlandish artists, with Jan van Eyck as the key figure, lead these artists to experiment with the representation of gold brocaded textiles. They no longer tried to create literal representations with applied textures but they tried to achieve an illusionistic representation by only suggesting these textures with their method of painting. These artists tried to create the brocades in a more painterly way by building up paint in multiple layers and by employing different glazes. By using binding media such as boiled linseed oil, they were able to achieve deeper, richer colors than the water-based media of earlier painters. Because the oil paints dried more slowly, the artists had extra time to accomplish more nuanced shading. The artists also used a wider variety of pigments, such as lead-tin yellow, which could be used for the highlights in the brocades to imitate the sparkle of the gold threads. Of course, this transition was very gradual and there are examples of the older techniques or combinations of them in the newer paintings. This ‘new’ illusionistic approach was well received at the time. When he was visiting the Duke of Ferrara in 1449, the humanist Cyriaco d’ancona showed his admiration in his description of the technique in a painting by Rogier van der Weyden: 

> [...] so many garments and differently colored cloaks, others excellently enriched with purple and gold [...] gold as if it were real gold, pearls, gems etcetera, such that you would call them not the works of human hands, but the products of mother Nature herself (Duits 2001, 21).

Although Duits (2001) thinks that Van Eyck was imitating the sparkle of the gold leaf rather than the real sparkle from the textiles, he finds Van Eyck’s technique, the illusionistic system, more sophisticated because it was the first method that was completely consistent with the rest of the fictional world that was represented in the painting. Had Van Eyck employed gold leaf he could not relate its reflections to the light source in the painting because the reflection off real gold leaf is dependent of the exterior light source used to view the painting. According to art historian Hills there are two objective or external factors that arouse awareness of light in a painting. The most important is the dominant direction of the light coming from a specific source, such as the sun. Secondly there is luster, or the reflections of that light (Hills 1987). Van Eyck is a master of using both factors, a specific light source and luster, in the way he paints his elaborate textiles. By avoiding the use of gold leaf, the later Netherlandish artists were employing the techniques Alberti wrote of in his De Pittura of 1435. According to Alberti, the use of gold leaf would simply make the surface reflective rather than helping to create an illusion of a three dimensional place (Duits 2001).

Art historians have observed that by Van Eyck the illusionistic system was among the most complex. Other later artists employed simpler systems. Memling, for example, chose a gold colored ochre base tone for his brocades, rather than Van Eyck’s dark brown layer. Memling used lead-tin yellow highlights to mimic Van Eyck’s sparkle, but the sparkles in Memling’s paintings had no essential optical function; they are purely decorative (Duits 2001). Art historian De Vos (1994) also sees Memling’s technique as a simplification of the complex layer technique of Van Eyck. Textile historian Monnas (2000) thinks Van Eyck actually painted the fabrics how he saw them, and that
later artists used formulaic systems. The formulaic systems of brocade painting became even more simplified in subsequent decades, resulting in the techniques used by the end of the 15th century by painters such as the Master of Saint Giles, the Master of the Embroidered Foliage, Colin de Coter and the Master of Frankfurt. These artists painted brocades that looked like cut-out forms, devoid of any foreshortening; they were extremely stylized and the sparkles in the highlights were purely decorative (Gombert and Martens 2005a/b; Périer-D’Ieteren 1985; Hoeningswald 1982; Goddard 1985).

The simplification that occurred in the Netherlandish artists’ technique for painting brocaded textiles took place as the art market of the time increasingly became more open. In the Low Countries, artists of the last quarter of the 15th century produced more to accommodate this new market. In 1482, Bruges merchants started selling their items in the pand (marketplace). The participation of painters in the pand is only documented after 1511, but they could have been involved even earlier (Wilson 1998). Antwerp had several similar marketplaces, the most famous one was called Onser Liever Vrouwen Pand (Our Lady’s Pand) where the participants could sell year round, not just in a limited time as offered in Bruges (Wilson 1998; Ewing 1990).

By the end of the 15th and the beginning of the 16th century, Antwerp became the leading center to sell art on the open market on speculation or on spec (spec work) (Ewing 2007). The clients had choices and sometimes could make changes of special requests. There were still commissioned works, especially those who had to serve a public function (Martens 1994). This is a big difference compared to Jan van Eyck, who painted solely for his wealthy patrons. According to art historian Harbison (1991), Van Eyck was forbidden to paint for the open-art market by the Bruges painters guild; this limited his patrons to people affiliated to the Ducal court. Later artists, such as the Master of Frankfurt and the Master of Saint Giles were painting brocades for a wider audience. This wider audience was drawn to the representation of brocades because these brocades were associated with the wealth and affluence that this new audience aspired to. Harbison (1991) proposes that for the nouveau riche, such as the functionaries at the court, panel paintings realistically depicting luxury items was a relative cheap way of showing their wealth compared to purchasing the real items such as tapestries, illuminated manuscripts and brocaded fabrics. Art at the time was cheaper than clothing (Scott 2007).

The artists were aware of this trend and possibly turned the painting of brocades into a trademark feature to fill the demand created by the new art market. To use Duits his words: […] the depiction of gold brocades developed into a genre in its own right that was destined to survive well beyond the stage in which painting could be called a imitative medium (Duits 2001, 17). A possible correlation can be drawn between these painters turning the representation of brocaded fabrics into a trademark feature and artists such as Patinir and Bosch. The latter two were very well aware of product identity, branding and buyer-specific appeal (Ewing 2007).

As mentioned, the representation of brocaded textiles in the early 16th century becomes purely decorative. The artists started to be more and more aware of saving time and therefore specific ‘price-cutting’ workshop practices became in use. By simplifying things and by the creation of workshop models and a formulaic system, an artist could give more work out of hand to his assistants.

THE PAINTING PROCESS: RENDITION OF THE PATTERN

Due to space restraints only this one step of the painting process will be explained here. I hope to publish a more complete description of the entire research project in general, and of the painting process in particular, sometime in the future.

After examining the paintings it became clear that there were several similarities in techniques among different painters. Mostly the brocade was created by a base tone (often an ochre color to imitate gold). On top of the base tone the design of the pattern gets rendered. On top of the design pattern were several paint layers and glazes. The final step was the placement of the highlights.

The rendition of the brocaded pattern was a very important step in the creation process. Art historians have speculated that some sort of mechanical method was used to transfer the pattern. This paragraph sheds light on the methods and the timing of this artistic process. Four different types to render the pattern were discerned in the 16 paintings from the core-group:
Fig. 1. These images illustrate the simplification process of the painted brocaded fabrics after Jan van Eyck. Photos courtesy of the Board of Trustees of the National Gallery of Art, Washington, D.C.
Type I: The presence of an underdrawing

The presence of an underdrawing was the most expected trace evidence to find before the start of this project. The underdrawing discussed in this section is related to the brocaded pattern and not to the folds of the fabrics. Most art historians mention the use of a mechanical process to apply the pattern. All these processes have some sort of underdrawing as result. The most often mentioned process by art historians is pouncing.

During this research project, pouncing was detected in the Master of Saint Giles The Baptism of Clovis in the heads of the bishop and Clovis. Both heads showed clear evidence of not followed pounce marks. The brocades in this, and the 15 other examined paintings showed no traces of this technique, which is surprising since most scholars assume or mention the usage of this technique in relation to brocaded patterns.

Historical artist manuals list several possibilities to transfer a design on to another support. The tracing could be carried out with oiled paper (calcare, copiare via di luce) and Cennini (1960) mentions carta unta and carta lucida di colla or carta lustra described by Jehan le Bègue. Another technique described by Cennini was pouncing or spolvero. With this technique the design was made on parchment or paper and than the outlines were pricked with a needle. In the next step, powdered pigment was pounced through these holes (Plesters and Roy 1985). This technique resulted in little dots, which the artist than connected. These dots were sometimes wiped away after the connecting step.

The position of the underdrawing is also important, since its location provides evidence to workshop practices and more specifically to the design phase. Traces of a black underdrawing were detected during the microscopic examination in the angel wearing the red cape in Hans Memling’s Virgin and Child among Angels. The underdrawing seems to consist of a black and dry drawing material, possibly black chalk. These marks are visible where the artist did not follow the lines completely in the painting stage. This technique was also detected in the Master of the Prado ‘Adoration of the Magi’s’ Presentation in the Temple. In both cases the underdrawings were similar to the ones used in the rest of the composition, but were drawn on top of the ochre colored base tone of the robe. This means that the brocade patterns were not drawn in at the initial design phase of the paintings, but were added later. This opens the door for workshop and/or specialist collaboration.
Type II: Incised lines

Incised lines have been noted in relation with preparatory drawings for gilding and occasionally for the placement of architectural decorum. Apart from art historian Campbell’s observations on Memling’s *Donne Triptych* (National Gallery, London) (Campbell 1997b, 75), no in depth study of incised lines used to plan brocade designs in the study of Netherlandish painting techniques has been conducted. During this research project, incised lines were detected in the NGA's Hans Memling’s *Virgin and Child Among Angels*. The incised lines only appeared in the cloth of honor, a brocade with no foreshortening and much simpler than the fabric the angel is wearing (the pattern in this fabric was underdrawn). Incised lines were also present in the architectural setting. Campbell pointed out that the cloth of honor in this painting is identical to those in The Metropolitan Museum of Arts NY painting *Virgin and Child with Saints Catherine of Alexandria and Barbara* and in *Donne Triptych*. Campbell also states that the cloths of honor might have originated from the same tracings, since they are to a millimeter similar in size (Campbell 1995; Campbell et al. 1997a; Campbell et al. 1997b).

In other paintings from the core group incised lines were also detected, although less clear than in the Memling painting. They are present in the Master of the St. Lucy Legend’s *Mary, Queen of Heaven* and the Master of Saint Gilles and Assistant’s *Episodes from the Life of a Bishop Saint*.

After these findings the question arose whether or not the artist used a sheet of paper to score the image through or if the incised lines were directly applied in the paint surface? Some of the lines showed revision and they looked applied freehandedly. Microscopic examination showed that these incisions are not sharp but rather rounded. This provides information about the tool that was used and the time when it was applied. It seems that the lines are incised in the base tone and their appearance might indicate that they were applied rather quick after the application of this layer. The tool, possibly a stylus or the back of a brush, had a rounded end or an intermediate paper could have been used.

Historical documents mention the usage of incised lines. As already mentioned in the previous section, Cennino Cennini and the Nurnberger Kunstbuch give recipes for the use of transparent sheets of paper or parchment. The artists would then press very hard on these sheets with a stylus and score the image in the paint surface. This scoring from an image into the surface is also used in book illumination and in wall painting (Meder 1978). The usage of an iron stylus was mentioned by Hans Lenker in his Perspectiva from 1571 (Nuremberg: Fol. III) (Meder 1978). Sometimes the back of a sheet was blackened and the stylus was then used to trace the image on the front and the black outlines would then stick on the surface. Giovanni Battista Armenino mentioned this technique in De Veri Precetti della Pittura in the second half of the 16th century (published in 1823 in Pisa) (Meder 1978; Ainsworth 1990) and in a later source (1604), Carel van Mander mentions in Het Schilder Boeck (Meder 1978).

![Micrograph taken with X1.6 magnification](image1.png)

Hans Memling; *Madonna and Child with Angels*, after 1479; oil on panel
58.8 x 48 cm (23-1/8 x 18-7/8 in.)
Andrew W. Mellon Collection
NGA 1937.1.41

Fig. 3. Example of Type II: Incised lines.
Photos courtesy of the Board of Trustees of the National Gallery of Art, Washington, D.C.
Type III: fine, freehanded lines with sharp endings

Fine, freehanded lines with sharp endings, have not been addressed by previous scholars nor were they directly mentioned in historical treatises. After the examination of the core-group paintings it turned out that these fine and freehanded lines were found in almost all paintings and only in the areas with brocade patterns. Examples of this technique include: Petrus Christus’ *The Nativity*, the Master of the Catholic Kings’ *The Marriage at Cana* and *Christ Among Doctors* and the Master of the Saint Lucy Legend’s *Mary, Queen of Heaven*.

The lines are very characteristic and mostly end in very sharp points, the result of the swoop of the brush. The examined paintings showed two types of painted lines preparing the textile design: **Type I.** seems to be more of a transparent glaze type and is in most cases red. **Type II.** were more common and these lines are opaque and most often in a lighter shade then the actual color of the pattern.

Most of the lines are orange-red. This could be related to the fact that most of the brocaded velvets represented in the studied paintings are red as well. In one instance, the Master of the Saint Lucy Legend’s *Mary, Queen of Heaven*, there is a red line underneath a blue brocade pattern. It seems that the artist intended these underpainting lines to be seen, to create a more three-dimensional sensation. In some cases these fine lines have a broken appearance; painting conservator Dunkerton (1996/98) described the appearance of similar looking lines (not in relationship to painted brocades) as having a *broken beaded appearance*. As possible reasons for this appearance, she mentioned the repulsion of a water-based media on an oily surface or a light and rapid oil-based paint applied on a dry surface. More analysis needs to be carried out to determine the nature of these lines.

It is not quite clear whether these *fine, freehanded lines with sharp endings* are the primary design step. It could be possible that they are the second step; a step based on minor markings applied before, such as maybe pounce marks. The hypothesis that they are not the primary design phase is supported in some cases there are multiple lines; sometimes they seem to correct one and other. What is the reason for these ‘corrections’? Infrared reflectography has not provided evidence of the presence of any underdrawing underneath these lines, but as mentioned before, the dots created by pouncing could have been swiped away after they were connected with these lines or the paint can be non-IR penetrable.

Although the evidence suggests that these lines are painted free handedly, could it be possible that the double lines are the result of the movement of a template?

---

**Fig. 4.** Example of Type III: Fine, freehanded lines with sharp endings. Photos courtesy of the Board of Trustees of the National Gallery of Art, Washington, D.C.
Type IV: The lack of (or non-detectable) form of a design phase

Some paintings from the core-group and from the other studied collections had no visible or non-detectable traces of underdrawing in the parts with brocaded textiles, but showed underdrawing in other parts. The absence of an underdrawing can mean different things. First of all, it is possible that an underdrawing was not necessary. In the 16th century, or in very simple brocaded textiles in the 15th century, the artist did not need any mechanical help to paint the brocade pattern. One example of this is Juan de Flandes’ *Adoration of the Magi*. The pattern was painted, freehandedly, on top of the already finished textile (meaning folds and shadows in place) sometimes with the use of a template. The usage of templates for brocade patterns has been noted. Art historian Goddard (1985) and painting conservator Hoeningswald (1982) pointed out that for the floral pattern of the NGA’s Master of Frankfurt *Saint Anne with the Virgin and the Christ Child* a template was used. The pattern in Saint Anne’s dress is very similar reoccurring throughout the painting and reappearing in the *Holy Kindred Altarpiece* in Frankfurt (Goddard 1985).

Another reason for the lack of an underdrawing could be that it was made in a material not detectable with the IRR-examination technique (non-carbon based) or that the underdrawing was painted over with a non-IR penetrable paint. The underdrawing could also have been removed by the artist himself during the design stage, for example, when pouncing was used.

The usage of templates or even stamps can be illustrated by several historical documents. A document regarding the painter Bernardin Simondi mentions the existence of cut patterns (Goddard 1985). In another historical document from the end of the 14th century, related to the decoration of the Champmol Chapel in Dijon, the use of a lead plate related to the application of the brocade motives is mentioned (Vandamme 1982). This lead plate might have looked like the metal (lead?) stencil that was found during the archaeological excavations of Meaux Abbey (Humberside). This stencil was used for the application of a mordant on the walls in the shape of a flower. The gold leaf would then be applied afterwards and brushed away. The gold would then only stick there where the mordant was applied (Howe 2006). Fragments of brocade patterns for needlework with the charcoal dust still on them also still exist (Jeitner et al. 2004).

![Image of Juan de Flandes' *Adoration of the Magi*](image1)

Juan de Flandes;  
*The Adoration of the Magi*,  
c. 1508; oil on panel  
126 x 82 cm (49-5/8 x 32-5/16 in.)  
Samuel H. Kress Collection  
NGA 1961.9.24

Fig. 5. Example of Type IV: The lack of (or non-detectable) form of a design phase.  
Photos courtesy of the Board of Trustees of the National Gallery of Art, Washington, D.C.
CONCLUSION

Pouncing, the most frequently mentioned technique by scholars, was only found in one painting during this project. However, these pounce marks were not related to the areas with brocaded textiles. It is possible, that the pounce marks were not detected or might have been swiped away, in the 16 core paintings from the NGA collection. On the other hand, this project showed that there were several different techniques used to apply the brocade pattern and that most of them were made visible with the use of a microscope and not by infrared reflectography examination. These techniques were divided up in four groups: Type I. the presence of an underdrawing; Type II. the presence of incised lines; Type III. fine freehanded lines with sharp endings (the largest group) and Type IV. the lack of (or non-detectable) form of a design phase.

The comparison of the different painters showed that the paint layer built up in the areas representing painted brocades is very similar and that the layering evolves towards a very simplified form. This simplification process and the less correct/ realistic representation of the brocaded silks and velvets was most likely a result of the growing open art market and related to that the faster work process involving assistants. The information gleaned from this research project seems to suggest that in most workshops, the brocaded fabrics were painted with specialized techniques somewhat different from the rest of the painting. It can be hypothetically assumed that in some cases there were different specialized painter taking care of all the textile and metal decorations. The goal of this research project was to collect data that could raise new questions and maybe find some answers, similarities and differences between specific artists towards the question on how these very beautiful painted brocaded silks and velvets were painted.

It is clear that in order to answer these questions more accurately, new analysis have to be carried out in the future.

ACKNOWLEDGMENTS

This paper is dedicated to Philip Conisbee, Senior Curator of European Paintings NGA (1946-2008) and Craigen Bowen, Deputy Director Straus Center for Conservation at Harvard (1953-2008).

The author would like to thank: The Andrew W. Mellon Foundation/ Melanie Gifford (project mentor), Sarah Fisher, Michael Swicklick, Elizabeth Walmsley, John Hand, Cathy Metzger and all my other colleagues at the NGA, with a special thank you to the art handlers/ Ashok Roy and Rachel Billinge, National Gallery London/ Mark Tucker, Philadelphia Museum of Art/ Dr. Michael Peter and Dr. Evelin Wetter, ABEgg Foundation, Riggisberg/ Robin Hanson, Cleveland Museum of Art/ Dr. Molly Farries, University of Groningen/ Straus Center for Conservation, Harvard University Art Museums/ Claire Barry, Kimbell Art Museum/ Painting Conservation Department at the Museum of Fine Art Boston/ Ingrid Geelen, Royal Institute for Cultural Heritage, Brussels/Axel Börner, Staatliche Kunstsammlungen Dresden/ Ineke Labarque and Lizet Claessens, Royal Museum of Fine Arts Antwerp/ Danielle Flores, Dallas Museum of Art.

Copyright © 2008 National Gallery of Art, Washington DC

REFERENCES


Monnas, L. 1991. Contemplate what has been done; silk fabrics in paintings by Jan van Eyck. HALI 60: 103-113.


ENDNOTES


2 A working system was created that allowed to study all the National Gallery of Art paintings in three days. The technical examination included: studying the painting with a stereo-microscope; studying the conservation- and curatorial files and the systematic catalogue entries; taking of digital micrographs; taking of digital macrographs, with a ruler in the picture for reference and taking light photographs to better document the 3-D character of the paint application; taking of tracings, to compare specific brocade patterns with each other; taking of X-radiographs; taking of IRR reflectographs; X-radiography fluorescence spectroscopy (XRF). All this data and the data collected from literature study and other institutions was collected in a FileMakerPro database, to facilitate retrieving information.

3 The Italian measurement *braccio*, or an arm’s length, was different in every city and changed over time. For more info on this see Monnas (1988).

4 The micrographs were taken with a Q Imaging Digital CCD Color Microscope Camera, MicroPublisher 3.3 RTV Cooled (3.3 mega-pixel CCD Sensor) attached to a Leica stereo-microscope MZ 12, and Q imaging software V2.8.1

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.

This paper has not undergone a formal process of peer review.
RAISING PUBLIC AWARENESS: CREATING AN EDUCATIONAL INTERFACE BETWEEN CONSERVATORS AND THE PUBLIC

Julie Heath

ABSTRACT – The Lunder Conservation Center at the Smithsonian American Art Museum and National Portrait Gallery opened in July of 2006 as the first permanently visible fine art conservation laboratories in a museum in the United States. This publicly accessible center is designed to give the museum visitor a glimpse into the work of conservation professionals. Interpretation is essential for visitors to understand the goals, interests, and activities of professional conservators. Kiosks, didactics, lectures, gallery talks, tours, student programs, and a website have been implemented for this purpose. This presentation will share programming and educational efforts over the past eighteen months at the Lunder Conservation Center.

The Lunder Conservation Center opened in July of 2006 as part of the reopening of the Smithsonian American Art Museum and National Portrait Gallery after a six and a half year renovation. This center, which cares for the collections of the Smithsonian American Art Museum and the National Portrait Gallery, has glass walls that run the length of the labs. The Lunder Conservation Center is located in the north-west corner of the museum building, on the third mezzanine and fourth floors and is composed of five conservation laboratories—the Frames Lab, Paper Lab, Objects Lab, Structural Paintings Lab, and Painting Studio. A publicly-accessible corridor runs the length of the labs on the third floor mezzanine, with a glass wall separating the public from the workspace of the conservation staff. The public can see most work areas. The areas that are not visible to the public include the photo-suite, Paper Lab fume hood, x-ray room, spray booth, and some computer workstations. The Painting Studio is on the fourth floor, situating it at the top of the building. Visitors are excited about seeing “behind the scenes.” Many appear to have a limited awareness of art conservation; visitors inquire about “restoration” and cite Antiques Road Show and CSI as familiar points of reference.

The challenge of making art conservation visible to the public is summed up as this: How does one best translate conservation for the public in an accessible and accurate manner? The Lunder Conservation Center employs a full time Program Coordinator to address this challenge. The Program Coordinator interprets conservation for the public through the creation and maintenance of public programs, tours, interactive media, and didactics. The Program Coordinator works closely with the SAAM and NPG conservators to identify and evaluate the best means of educating the public about art conservation and handles a large percentage of the public’s questions. This, in combination with the museums’ public hours of 11:30 a.m. - 7:00 p.m., allows the conservators to work with minimal disruption. The most common questions asked by the public are: Who decides what is conserved? How many conservators work here? Do the conservators only work on this museum’s collection? Do the conservators mind working behind glass? What type of analysis is performed on artwork? What training do conservators have?

The Lunder Conservation Center bifurcates the effort of interpretation. Physical didactics comprise the first half of interpretation—including touch-screen kiosks, a media wall, a website, bulletin board, signage, and a monitor hooked up to a microscope. The touch-screen kiosks are the most popular component of the interpretation. Each lab has its own kiosk and each kiosk has four buttons at the bottom of the screen. The buttons are broken into these topics: What Happens Here; Treatment Video; Tools Glossary; Before and After. The treatment videos garner the greatest number of comments. Running about three minutes, each treatment video gives a synopsis of the type of treatments done in the corresponding lab.

The fourth floor houses the Media Wall, comprised of videos and images that depict three different topics meant to introduce visitors to the field of art conservation. The first topic, Save Our Treasure, speaks to disaster preparedness and the role conservators play in helping institutions and individuals care for their treasures. Save Outdoor Sculpture, the second topic, outlines the Save Outdoor Sculpture project, spearheaded by Heritage Preservation.

Julie Heath
Lunder Conservation Center Programs Coordinator
Smithsonian American Art Museum & National Portrait Gallery
The final topic, Hear from the Professionals, discusses the intersection of art and science and underscores the interdisciplinary nature of the field of art conservation. Over twenty conservators from more than a dozen institutions were interviewed for the videos of the Media Wall. Clips from these interviews can be found on the Lunder Conservation Center website.

The Lunder Conservation Center website – LunderConservation.si.edu – introduces users to the field of conservation through treatment videos, interview clips with conservators from around the United States, “before-treatment” and “after-treatment” photographs of artwork, and a glossary of tools. The website and kiosks share content. This allows the website to act as a pre-visit introduction to the center and also as a post-visit follow up. Visitors can preview, review, and share their experience in the center with others.

To supplement the kiosks, the Program Coordinator and conservators use sign-stands to share information about what is happening in the labs on any given day. During treatment photographs are labeled with short captions, printed out, and inserted into the stands. Didactics hang on the wall in the Lunder corridor, explaining facets of the specialties, such as The Anatomy of a Frame, which shows frame construction materials.

Tours, weekly Behind the Scenes programs, lectures, gallery talks, demonstrations, and student programs make up the second half of the interpretation. Feedback from visitors indicates that visitors want to speak to a person while visiting the center. The challenge was how to provide visitors with this personal contact while allowing the conservators minimal interruption in their work. Behind the Scenes—the weekly introduction to the center—was developed in response to this demand. The Program Coordinator spends each Wednesday from 3:00 p.m. to 4:00 p.m. conducting this program.

Several aspects of interpreting conservation for the public are worth noting. The first is the composition of the audience. Interpretation for a group of seventh grade students varies considerably from interpretation for a group of retired chemists. The second aspect affecting interpretation is the amount of time given to a specific group of people. If a group is only able to spend five minutes in the conservation center, the experience is most effective when one or two keystone points are emphasized: terminology (conservation vs. restoration), components of conservation (examination, documentation, research, treatment), and/or the idea of balancing access and preservation.

Perhaps the most important aspect of making conservation visible to the public is the opportunity for advocacy. Seventy-five percent of visitors who attend Behind the Scenes programs claim no prior knowledge about art conservation. Ignorance of a cause precludes support of that cause. Once introduced to the field, the public is fascinated. A narrative of an object’s examination and/or treatment supplemented with UV, IR, or x-ray images is usually sufficient to hook an intrigued group. Introduction to basic concepts and vocabulary of conservation enables visitors to ask sophisticated questions and engage in dialogue.

Informal polls at the Lunder Conservation Center show that the majority of visitors are from outside the Washington DC metro region. Out of town visitors are encouraged to find out whether their home-town collection has dedicated preservation resources. With time, public interest can positively influence support for collections care. For many visitors, simply seeing the facilities, equipment, and tools generates a respect for the conservation profession. Perhaps most rewarding, people are moved care about and contribute to the preservation of cultural heritage. These efforts to educate the public can have a ripple effect, reaching beyond the Smithsonian to other collections and institutions around the country.

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.

This paper has not undergone a formal process of peer review.
CONSERVATION OF A JEAN CHARLOT FRESCO USING CYCLODODECANE

Victoria Montana Ryan

ABSTRACT – The ultimate path to the complicated conservation treatment of a fresco by Jean Charlot involved a will, a house, and negotiations between five entities. Charlot, who may be the artistic godfather of the great Mexican muralists, was at the forefront of the 20th Century revival of mural painting. Throughout his long career, Charlot left not only a large body of work, but many mural treasures scattered though numerous countries. The challenging conservation steps, including the use of cyclododecane, to ensure stabilization and preservation of one such treasure are the focus of this presentation.

INTRODUCTION

Louis Henri Jean Charlot was born in Paris, France in 1898. Charlot’s grandfather, Louis Gouptil, was of Mexican descent and his mother, Anna, was an artist. While in France Charlot studied at the Ecole des Beaux-Arts and exhibited paintings in the 1921 Salon d’Automne. Then in 1922 Charlot and his mother moved to Mexico where Charlot felt that he was at home – identifying with the culture he found in 1920’s Mexico.

While in Mexico he initially worked for Diego Rivera and eventually worked with Rivera, Sisquerios, and Orozco bringing traditional fresco to the Mexican mural revival. Rivera and assistants were commissioned to paint the walls of the Ministry of Education in Mexico City and it was there that “Charlot trained the masons in the preparation of walls for fresco and instructed the other artists in technique” (Thompson 1999, 13). In 1928 Charlot moved to New York, after serving as staff artist for the archeological expedition of Chichen Itza. Charlot taught at the Art Students League in 1931 and, after time in California, Charlot became artist-in-residence at the University of Georgia from 1941-1944. While there, one of his students was the artist Lew Tilley who moved to Colorado Springs in 1942.

Charlot, following in the footsteps of Tilley, moved to Colorado Springs in 1947 taking over, from artist Boardman Robinson, the directorship of the Colorado Springs Fine Arts Center School. An article in the September 13, 1948 issue of Time magazine noted that Charlot’s “…paintings and colored lithographs were packing people in at Colorado Springs George Nix Gallery (including museum buyer’s from as far away as Washington D.C. and San Diego)…. The article further states that Charlot was “…content to stay within the few blocks that hold the Colorado Springs Fine Arts Center, a Roman Catholic Church, and his white frame house on [the street] Boulder Crescent” (Time Magazine, 1948). It was at Charlot’s Boulder Crescent home that he painted a small fresco.

ISSUES

The city of Colorado Springs had a potential project involving a mural by Jean Charlot. A house owned by Mrs. Helen Michelson was deeded to City for additional park space with stipulation that the house had to be removed from the property. After examinations it was determined that house could be moved but an add-on frame porch would not survive. This is where mural was located, in the frame-porch / laundry room. Plumbing for the washer was up against the mural’s bottom edge.

Discussions and negotiations ensued for the possibility of conservation treatment. The City wanted the property, but the Colorado Springs Fine Arts Center (CSFAC) wanted the fresco. Working with the City of Colorado Springs Parks & Recreation department, the director of the City Pioneers’ Museum, the City Facilities and Carpentry division, the house moving specialists, and the Director of the Taylor Museum of the CSFAC a plan was developed to coordinate the conservation treatment with the time frame dictated by the schedule of the house moving specialists.

Victoria Montana Ryan
Conservator of Paintings
Art Care Services
233 N. El Paso St., Colorado Springs, CO 80903

77 AIC PSG Postprints 21 (2009)
INITIAL OBSERVATIONS

Initial inspection of the mural indicated a true buon fresco over a scratch coat adhered to metal lath attached to framing studs. After careful consideration of all options the decision was made to remove the fresco from the building in order to preserve it. Prior to beginning treatment a proposal was put forth to the board of the CSFAC regarding the approach. Unlike many instances where murals are removed and then attached to aluminum panels, the plan was to leave the mural on the original house studs to provide context. Framing the mural in a sort of shadow box frame provides two views; if one looks from the front one sees a framed work of art, but if you move to the side you see the construction methods, and indeed the original materials from the house Chariot lived in. The Fine Arts Center can provide an educational didactic that would hopefully expand the experience of the viewer. The H. 101.6cm x W. 83.8cm (H.40.25” x W. 30”) fresco, entitled “Tortillera” depicts a woman grinding corn, with a child on her back and a dog behind them. This is an iconic image for Chariot and variations are often seen in his works.

Examples may be found in “Rest and Work at Doorsill” (1938 oil on canvas), “Tortilleras” (1947 lithograph), “Work and Rest” (1956 color lithograph) and, tellingly, on the cover of Jean Charlot’s Prints: A Catalogue Raisonné (Morse, P. 1976). The colors in this version are muted blues, and browns. A pale blue inscription at the lower left of the image reads “J.C. 48.”

While Charlot often transferred his full-scale cartoons to plaster with a nail (Klarr 2005), this image is small enough to have been done freehand and there is no evidence of outlines scored prior to painting. As is often found in his murals, he seems to have incorporated local materials – one finds this in Hawaii with the use of volcanic pumice and in Fiji the use of local river sand (Klarr 2005). In this particular instance he appears to have incorporated local sand from Monument Creek that runs nearby the house.

Examination showed the mural was well adhered with no discernable air pockets, delamination, or interlayer cleavage. No cracks were present but there were fairly large losses along the edges. Additionally the fresco had been vandalized and there were scratches and gouges, particularly in the faces. The painting was grimy. Prior to treatment a small fresco used for teaching purposes was used as a mock-up to test the feasibility and measure the effects of using cyclododecane ($C_{15}H_{30}$, Kremer-Pigmente) a saturated alicyclical hydrocarbon as the facing material.

Cyclododecane (CCD) was introduced into the conservation field in 1995 by Hans Michael Hangleiter, Elisabeth Jägers and Erhard Jägers (Hangleiter et al. 1995). The varied uses of CCD in conservation have been cited numerous times in the literature during the last decade. As a chemically stable, wax-like hydrocarbon material it has, among other applications, been used as a temporary consolidant and as a protective layer for wall paintings as cited in the 1999 AIC Journal article by Brückle, Thorton, Nichols and Strieker (Brückle et al. 1999). In 2000 research published by Keynan and Eyb-Green (Keynan and Eyb-Green 2000) seconded findings that CCD properties vary depending on application either as is or dissolved in non-polar or aromatic solvents. The mock-up tests for this treatment also found that application of pure molten cyclododecane provided better protective results.
TREATMENT

The fresco was dry cleaned using a soot sponge (University Products) to remove superficial grime. Chosen for its ability to sublime leaving no residues on surface, the facing proceeded using cyclododecane. The CCD was applied warm, first directly over the fresco surface. Immediately thereafter a layer of open weave cotton gauze was laid on the surface, followed by successive layers of cyclododecane and fabric. Once set, the faced mural was covered with Mylar® (DuPont Teijin Films) secured around the surface to slow down the sublimation process.

To prepare the mural for safe removal from the building, layers of soft cotton felt were attached to the wood surrounding the mural as a protective layer. Open cell polyurethane foam was cut to fit the surface and to fit between the studs to support the mural and to dampen vibration during removal. Plywood was also attached to the studs to prevent torque during the removal and relocation efforts. Because the right edge of the mural was directly perpendicular to the back of the house it would need to be cut away at that edge. Attempts to cut this area revealed that the artist had wrapped the metal lath around the corner join and onto the house molding. This entire section of house molding had to be removed with the mural. The supporting wall was cut above the mural and below the mural.

The fully protected mural was then sandwiched between sheets of 1/8" thick plywood bolted through the areas above and below the mural itself. After the mural was secured the process of cutting that section of wall and removing it from the rest of the structure commenced. A DeWalt® power circular saw was used for the initial large cuts in the wall farthest away from mural and then the carpenters switched to hand tools (saws) for cuts nearer to mural itself in order to minimize vibrations. The importance of the steps to prevent torque became evident once the mural had been cut loose from the surrounding materials and the carpentry crew slowly edged the mural free.

The fresco was then placed on a truck for transport to the Museum warehouse where further work would take place. A support was built and secured to the cement floor of the warehouse to permit safe working of both front and back surfaces. The sandwich boards were removed, as were other protective materials, except the foam inserts between the studs and the Mylar® covering the facing. At this point it was not possible to see the surface and the condition of the mural was unclear.

The extraneous wall materials, moldings, and planks were cut away leaving only the mural on its lath and stud support. A new plywood backing that was to be the “back” of the shadow box was painted matte black and adhered with screws to the support studs. Once this phase was complete, the process of sublimation began in earnest. Although the successive coatings of CCD and fabric did not seem very thick, more cyclododecane than necessary may have been applied as it took nearly 9 months to completely sublimate, even with the use of heat lamps (Kremer Pigmente 2000). As the sublimation continued the surface of the mural came into view and
was found to have come through in perfect condition, no losses (other than those previously present) and no cracks.

The edges were consolidated with a light coat of Paraloid B-72® (Rohm & Haas 5% w/v in xylenes). Areas of loss were isolated with Rhoplex® AC-33 (Rohm & Haas) and then losses were filled with lime putty (U.S. Heritage). After filling, losses were toned to match the surrounding areas using watercolors (Schminckel), initially in lime milk and then later watercolors applied a secco.

After all work on the fresco was completed, poplar boards comprising the edges of the “shadow box” were fit together and secured to the back frame piece.

A French cleat hanging system was secured to the reverse to provide adequate hanging support for the entire structure. The final step of the treatment was the crating of the completed fresco. The entire project took nearly a year to complete. It went into storage while the CSFAC underwent new building renovations. In November 2007 the newly renovated FAC opened. An exhibit is planned for this fall that will feature Charlot’s works, highlighting the conserved fresco.

CONCLUSIONS

As noted in earlier research cyclododecane can serve as an excellent protective facing material, particularly as applied directly in its molten state. Though this type of direct application may lead to an uneven coating, it can be smoothed out with a small amount of heat application prior to building up successive layers of facing. The ability to sublime, leaving no residues on the surface and no discernable changes to the fresco are clearly great advantages. Knowing that this seminal work of Charlot’s has been saved from sure destruction, made all the time and effort worth it. The mural is so much more than just a picture…it tells the tale of an outstanding artist’s time in Colorado Springs and how that time enriched the city, both while he was there and continuing today.
ACKNOWLEDGEMENTS

Many thanks to my colleagues who shared their time and expertise, especially Perry Huston and Scott Haskins, and to the Fine Arts Center and City of Colorado Springs for entrusting me with the care of Charlot’s fresco. A special debt of appreciation is owed to John Charlot and Jean Charlot Collection at the University of Hawai’i Manoa Library in Honolulu for sharing their resources.

NOTE

Health concerns have been raised over the safety of CCD (CAS# 95-62-2, not to be confused with other variants of CCD e.g., hexabromo cyclododecane). Although not classified a health hazard by Occupational Safety and Health Administration (OSHA) and not considered a toxic material under Federal SARA regulations, there is insufficient data as to the long-term effects on humans and the environment. Chronic or acute toxicity, or carcinogenic, or mutagenic effects in humans have not been fully examined. Although its environmental impact appears to be small – it “may be released to the environment in wastewater streams and fugitive emissions generated at sites of industrial production” (Howard 1997, 98) there does seem to be a concern about bioaccumulation (Brown 2004). To be safe follow good laboratory practice and use personal protective equipment to limit exposure.

SOURCES OF MATERIALS

Cyclododecane – Kremer Pigmente (228 Elizabeth St. New York, NY 10012)
Lime putty – U.S. Heritage (3516 N. Kostner Chicago, IL 60641)
Mylar® – Dupont Teijin Films (1 Discovery Dr. Hopewell, VA 23860)
Paraloid B-72® – Rohm & Haas (100 Independence Mall West Philadelphia, PA 19106)
Rhoplex AC-33® – Rohm & Haas
Soot sponge – University Products (517 Main St. Holyoke, MA 01040)
Watercolors – H. Schminkce & Co. (available at local art supply retailers)

REFERENCES

Association for Art Conservation Newsletter. 22 (13) 18-21.


Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.

This paper has not undergone a formal process of peer review.
ABSTRACT – This paper discusses an ongoing conservation project involving icons from the Aleutian and Pribilof Islands. The conservation project is coordinated, organized, and overseen by The Aleutian Pribilof Heritage Group, a non-profit entity created by an amendment to the Aleutian Islands Restitution Act passed by congress in 1988, to be responsible for the restoration of six Russian Orthodox churches, which were pillared and damaged during World War II. Once the church buildings had been restored, The Heritage Group began the icon conservation project. The majority of these icons are of 19th century Russian origin, however, they range considerably in terms of style, materials and construction, and condition. Prior to World War II, the icons were exposed to relatively extreme environmental conditions typical of Alaskan islands, where churches were generally heated only for services. During the war, environmental conditions worsened for paintings left behind in the churches when residents were evacuated to internment camps, while others were buried in barrels or “boxes” in the ground nearby for three years, and still others were carried to the internment camps in the hopes of being placed in chapels in the camps. Having been part of the conservation efforts of a large collection of closely related objects over a period of time has allowed for an opportunity to continually re-evaluate the needs of the objects, necessary ethical considerations, and the treatment approaches chosen, and to gain a better understanding of their relation to each other and to the needs of the communities of which they are a part. How the uniqueness of these works of art has helped form a general conservation approach and guided specific treatment choices is examined in this presentation.

I have been conserving icons from the Aleutian and Pribilof Islands for approximately 10 years, after having first been approached by Vera Espinola, an icon conservation specialist, in 1997. She had completed a survey of churches, icons and religious objects earlier, as part of a restoration effort begun by the Aleutian Pribilof Heritage Group. With monies paid by the U.S. government as restitution to the Aleut people, along with grants from the National Park Service and American Express, the Heritage Group has overseen the restoration of six churches and rebuilding of one chapel, and continues to administer to the conservation of their numerous icons.

This on-going project has been a collaboration among Vera, members of the Heritage Group, the Aleut and Pribilof people - priest and lay - who have devoted themselves to caring for these icons, colleagues in both objects and paintings conservation, and myself. The experience has caused me to truly appreciate the uniqueness and integrity of each artwork I treat; has given me a greater respect for the significance an artwork may hold for its owner, steward, or community; and continues to challenge my skills, perspectives and creativity as a conservator.

Cynthia Lawrence
Paintings Conservator
Fine Art Conservation Services
Englewood, Colorado
For those unfamiliar with icons, they are much more diverse than I had thought before beginning this project, varying stylistically and in size, as well as in terms of materials and techniques. They include what I think of as a classic example: a small oil on panel, with a metal oklad, in this case, embossed copper with a bronze recto. They may also be oil on tin, full-length images on canvas adhered to panel, or these more portrait-like representations of saints, executed on stretched canvas. The vast majority of icons I have worked on for the Heritage Group are Russian, however, a small number are considered to be Aleut in origin, these having incredible drying cracks. In all cases, icons are created as devotional objects above all else, not as purely aesthetic images, similar to retablo paintings. The act of creating them is considered a spiritual undertaking, and the materials from which they are made are inherently of spiritual value, having been prayed over prior to the creation of the object. Some iconographers consider the act of creating the icon a prayer, as well. These issues separate icons from easel paintings in important respects, and have, at times, greatly affected the choices I have made when treating them.

To better understand the people who hold these icons in trust, I will present a brief history. Christianity was carried to the Aleutian chain first by Russian trader-trappers in the 1740’s, and then in the 1790’s by missionaries sent by the Orthodox Church in Russia. It is said that by the end of the 18th century, the Church had become a dominant force in the islanders’ lives, with their culture being a unique blend of traditional Aleut spirituality and orthodox Christianity. Seven chapels were built on the Aleutian chain between 1800 and 1851, the first being constructed in 1808. The churches were adorned with holy icons and other objects with gifts from Russia and through the islanders’ own resources. They were the focus of the community and an integral part of the Aleutian people’s lives, acting as a sanctuary from the often harsh realities of life on the islands. They were maintained by the local villagers, with services held on each feast day and Sundays, and occasional visits by priests.

In 1867, The United States purchased Alaska from Russian, and the Aleut and Pribilof people were classified as “Indians,” becoming wards of the government. Other than the larger community of Unalaska, the typical Aleut village in 1942 had a chapel, a one-room school, radio service, infrequent mail, and travel by boat and ship. The main source of income came from work on introduced fox and sheep farms and more so from harvesting of sea animals, with residents of the Pribilof Islands being employed by the U.S. government to do such labor.

On June 5, 1942, Dutch Harbor, Unalaska, was bombed by Japan. Two days later, Attu and Kiska Islands were invaded by Japan, and all forty-two Atuans were taken prisoner. The U.S. government improvised a scorched earth policy within the next few days, leaving one village, including its chapel, burned to the ground and 881 Aleuts forcibly evacuated to five camps in remote, southeast Alaska. Internment extended from a two to three year duration, to permanent relocation.

Advance notice of evacuation of the Aleut people to camps ranged from none to a few days. Where there was advance warning, the icons were in some cases buried “for safekeeping,” with first hand accounts sometimes detailing oiling and or shellacking of the icons beforehand, to protect them “from the elements.” There are also accounts of icons having been packed in a barrel, which was then buried. Many icons and religious items were stored inside the churches, either by choice or necessity. A few were brought along to camps by evacuees in lieu of personal items, and fewer still were later shipped to the camps after some time. It should be noted that conditions in the camps were deplorable overall. With no churches inside the camps, the Aleut and Pribilof people turned mess halls or community rooms into temporary chapels.

Following internment, upon returning to their islands, the Aleut people generally found their villages in terrible conditions. Numerous houses were ransacked or destroyed, and American government personnel looted many of the churches. The U.S. Navy burned Atka’s church and all of its “treasures inside” to the ground. In Nikolski, the U.S. Army damaged most of the houses and the Church of Saint Nicholas, including using the church cupola for target practice, which allowed water to pour inside, causing extensive damage to the structure and its contents.

There are accounts of many icons being shellacked again at this point, in an attempt to stabilize them after the period of neglect. 3-in-1 oil was applied to their surfaces in many cases, and examination of icons indicates many were “cleaned” at some point, obviously not by professional restorers or conservators.

The Aleuts, in concert with Japanese-Americans who also faced internment, brought their claims for restitution to the U.S. Congress, and in 1988, congress passed the Aleutian Pribilof Islands Restitution Act, authorizing payments to be used to restore the Aleutian churches. A later amendment to the Restitution Act provided additional monies, and the Aleutian Pribilof Heritage Group was created to administer all restoration efforts.
The majority of icons I have treated exhibit at least some active flaking and cleaving of paint and/or ground layers, often delamination of and other structural instabilities in support layers, severe discoloration of surface coatings, and heavy accumulation of soot and grime. I have also encountered evidence of fungal activity; significant abrasion of paint and ground on high points, including the edges of cupped cracks; numerous accretions and indications of past use, including wax drips, miscellaneous glue residues, wall paint, and nail holes; and occasionally unique attached hardware.

In many cases, there appears to have been, and in some cases still is, great hesitancy on the part of the Aleutian people to send their icons away for conservation treatment. Based on their history, it is understandable that there may be a significant mistrust of "outsider" Americans with regards to the care of their cultural heritage. As presented earlier, the physical materials that make up icons are spiritual in nature and thus hold unique value, as does the history of their use. Some icons have been and continue to be decorated and/or used for religious purposes, such as processions. Burning of candles was and continues to be an important part of church services, the result often being numerous wax drips on the surfaces of the icons, sometimes even scorch marks. There are very aged and sometimes uncommon surface coatings on the icons, and a wish to not greatly alter their icons or make them look "brand new" has been expressed by the Aleuts. These factors have caused me to sometimes alter my approach to, or even my main goal, in a conservation treatment, or to sometimes devise a slightly unorthodox treatment. Preservation of the icon, including some of the history of its creation and use, is generally of far higher priority than the aesthetic presentation, with an approach that at times may seem more in line with treatment of ethnographic objects than with easel paintings.

The following offers four examples of ways I have dealt with these issues.

The first example involves cleaning methods for surface coatings. 3-in-1 oil becomes very black and soot-like in appearance. It is a non-drying oil, however, and so has not presented serious problems relating to treatment, generally being soluble in aliphatic or low aromatic content hydrocarbon solvents. The shellac layers, on the other hand, have often been quite problematic. In most cases, the coating barely became tacky upon exposure to ethanol or acetone, rolling with cotton swabs. Extensive solubility testing has pointed to three cleaning methods that have proved the most helpful in the majority of cases. Listed in order of effectiveness and my preferences, they are:

1. Ethanol and an ammonium hydroxide solution (approximately pH 9), mixed 1:1
2. Ethanol and m-pyrol, generally mixed 5 or 6 parts to 1 part, followed by straight ethanol or acetone
3. And 8:1 ethanol/xylene gel.

Also, as I started this project when I was pregnant, I tried substituting grain alcohol for reagent grade denatured alcohol, and often found the slightly increased water content to be helpful. On the other hand, I drew some nasty stares and comments with my big belly, or later, with an infant in tow, when getting my mega-size jug of Everclear from the liquor store.

As for re-varnishing, an area of our field that for me seems fraught with imperfection and compromise, for several years I decided to use dammar resin in a reagent grade mineral spirits with an amine light stabilizer added. I later switched to a reduced ketone resin with an amine light stabilizer added, after attending one of the varnish workshops with Rob, Jill, and Renee de la Rie. These decisions were made based on:

1. My reservations about the appearance and reversibility of at least some of the acrylic resins;
2. A cautious approach towards using aldehyde resins directly on a paint film, due to the relatively short length of time we have been able to study them under natural aging conditions and;
3. A lessened aversion in the case of icons to discoloration of aged, natural or ketone resins than I may normally have for easel paintings created purely as aesthetic images, and a determination of likely good reversibility of these aged resins from the icons, based on solubility testing. The fact that my clients readily accepted severely discolored surface coatings (think: a nearly 1/8" thick layer of old shellac covered with blackened 3-in-1 oil), weighed in on my choices, as well.

The next example involves an icon that was executed in oil paint with a gesso ground, on canvas, which was adhered to a wooden panel. The panel exhibited significant vertical, (parallel to the grain), splits and cracks. Corresponding to these cracks was considerable local planar deformation and delamination of the canvas from the wood panel, with evidence of extensive corresponding loss and instability of paint and ground layers. After considerable thought and discussion with trusted colleagues, the following treatment was devised:

After carrying out consolidation and cleaning, the canvas was removed from the panel and planar deformations were treated overall. Splits in the panel were aligned and readhered as possible with collagen glue, and reinforced with
mending plates. The painting was then lined to a secondary support of 10mil G-10, with a pre-stretched and washed linen interleaf, using BEVA film as the adhesive. The G-10 was cut to the same dimensions as the panel, while a 1½” allowance was made on the right and left sides of the linen. A layer of thick felt was laid onto the repaired panel recto to soften any remaining planar irregularities in the panel, and the linen borders of the lined painting were tacked onto the edges of the original wood panel, the idea being that the painting had its own in-plane, stable structural support, which could shift somewhat independently of the original panel, yet maintain the appearance of the original construction from the recto and verso, with all original components preserved together.

In another case where there was local delamination of a canvas adhered to panel and corresponding planar deformation, the canvas was not removed from the panel. In this case, the panel was in relatively good plane and condition, and deformation of the canvas appeared more like bubbles between the canvas and wood, corresponding to the wood grain. The majority of the canvas appeared well adhered to the panel and in plane, and in general, the interlayer delamination appeared to cause more of an aesthetic concern than a structural one. The lifted areas of canvas were locally stabilized to the greatest degree possible, by injecting copious amounts of BEVA 371 between the canvas and panel, and laying into plane as safely possible using local heat and pressure. Remaining planar deformation was accepted in this case, although it would likely be deemed too aesthetically disruptive to the image in the case of many easel paintings.

With the same consideration for maintaining original materials wherever possible, strainers are preserved whenever possible, removing nails from half lap or simple mortise and tenon corners and fitting with Best Corner hardware to allow the corners to be expanded, adding cross-members when appropriate for additional support. The only time auxiliary supports are replaced, are in cases where the existing auxiliary support is clearly not original or is missing altogether, such as was the case with one icon, where the canvas was merely held against the frame rabbet with pressure from a plywood backing.

Finally, I would like to speak to condition issues which relate directly to the devotional use of these icons. Where these condition issues do not conflict with the stability or preservation of the icons, they are generally minimally treated or left untreated. For example, nail holes used to mount the icons for use in processions are generally not all filled, often filling several in a grouping, but leaving one or two to be reused, and hopefully reducing the need to continue adding more holes. Nail holes from previous decorating campaigns, on the other hand, have generally been filled and inpainted. Glue accretions from applied decorations are reduced to minimize disfigurations, but not necessarily completely removed, or are left intact if decorations, such as artificial flowers, were still adhered; wax accretions from candle use are generally thinned to reduce discoloration, but often not completely removed. Borders of wall paint along the edges are often left intact if there is no framing element, and existing hardware is left in place when possible, while adding new hardware for safe hanging and proper reframing. For example, the blue paint was removed to reveal an original painted border on this particular icon, however, nails near the center of each edge were not removed, but were retouched to match surrounding color.

In summary, the opportunity to be part of this project over an extended period of time has reinforced old lessons I remember from when I first entered the field of conservation. First, respect the integrity of the artwork: Just like we learned in school, but maybe sometimes dismiss after having worked on our 100th or more treatment, each painting really is unique, with its own intrinsic value and set of concerns which need to be thoughtfully weighed before devising a treatment strategy. Secondly, have compassion for the client: Preservation issues aside, the needs of a client or the value and purpose the artwork for its owner, caretaker, or viewer may need to be weighed before devising a treatment strategy. Off course, this is not the same as honoring a client’s request to spruce up the 17th century Dutch canal scene they just acquired by painting out the “ugly” dirty snow in the foreground – yes, this really was once requested of me! Finally, be humble enough to know your limitations and to get on the phone and ask some respected colleagues for another perspective or fresh ideas. One of the greatest privileges I have had in my career was to work in some conservation labs where it was common practice to ask of a colleague “Why are you using this method or material and not another?” or “Have you thought about such and such consequences of doing this?” The phone has been, and continues to be, one of my favorite conservation tools (even with the inception of the PSG dislist), especially when I have been on my own, or in a studio lacking that kind of rapport between conservators.

Respect. Compassion. Humility. I would like to think that over the past decade or so, working with icons has taught me that not only are these three spiritual ideals good to apply to one’s personal life, they can be applicable to our professional lives, as well. Thank you.
ACKNOWLEDGEMENTS

I would like to acknowledge with gratitude the members of the Aleutian Pribilof Heritage Group and all the Aleut and Pribilof people involved in the conservation efforts of their icons, with special thanks to Jake Lestenko and Sherry Valentine. I would like to thank Vera Espinola for having given me the opportunity to be involved in this project, Ann Cunningham for conservation assistance, and Gina Laurin for her work as objects conservator on this project. I am eternally grateful to Ian Hodkinson for teaching me the invaluable approach of looking at all possible options for treatment and carefully weighing each one for potential pros and cons; to Alfred Ackerman, Barbara Heller, Kenny Katz, and all of the DIA conservation staff of 1999 for welcoming me into a lab full of lively questioning and discussion of materials and treatments and all the great benefits of such professional camaraderie; and to Steven Prins for the multitude of materials and methods available in his studio and his enthusiasm for studying and evaluating each one. And I would like to thank the conservators whom I frequently call for their unending willingness to discuss a treatment or answer one of my many questions.

REFERENCES

www.apiai.org (accessed 03/28/08)
www.nps.gov/aleu (accessed 03/28/08)

FURTHER READING

Kohloff, Dean. 1995. When the Wind was a River, Aleut Evacuation in WWII. Anchorage: Aleutian Pribilof Islands Association.

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.
This paper has not undergone a formal process of peer review.

88
This talk was primarily an overview of findings presented in an article in The Burlington Magazine. A summary of the research is given below. Since only a limited amount of technical details could be included in both the talk and the article, the summary is followed by a discussion of the most pertinent results of the technical examination carried out.

Recent technical examination of Vincent Van Gogh’s *Ravine* (Saint-Rémy, October 1889, Fig. 1) at the Museum of Fine Arts, Boston revealed the existence of a second composition below the paint surface. X-rays of the painting showed an abundance of small painted circles in the lower half and upper right, and parallel wave-like lines in the upper left, compositional elements unrelated to *Ravine*. In fact brushstrokes of various colours have remained visible in many places, left uncovered by the paint applied on top (Fig. 3), and the texture of the impasto brushstrokes below the paint surface is particularly noticeable when the painting is viewed in raking light. (Figs. 4, 5, 6).

A drawn copy of the lower painting made by Van Gogh before he painted over the composition was found to exist: *Wild Vegetation* now in the collection of the Van Gogh Museum, Amsterdam. (Figs. 7, 8). The X-rays, a small number of paint samples and close observation of the paint surface, combined with the *Wild Vegetation* drawing give us a reasonably good idea of the original appearance of the painting below *Ravine*. Applied mostly in short, spirited brushstrokes it showed a gently sloping mountain meadow filled with a bright array of flowers (mostly pink, white and yellow, some orange, red and mauve), with a view of the rolling Alpilles mountains (mauve and lavender) near Saint-Rémy in the distance set against a bright blue sky. The lively brushstrokes of the flowers in the foreground would have contrasted with the more fluid, cool strokes of the mountains in the background.

Based on the style and materials of the *Wild Vegetation* drawing Pickvance, Heenk and others have suggested that it formed part of a group of ten to a dozen drawn copies of recent paintings that Van Gogh sent to his brother Theo c. 2nd July 1889. “So that you have an idea of what I am working on, I am sending you ten drawings, all after paintings I am working on.” Prior to this research, however, no painting was known on which this particular drawing could have been based. The examination of *Ravine* has led to the re-discovery of this painting. The find strengthens the argument for the inclusion of the *Wild Vegetation* drawing in the batch of drawn copies sent to Theo in early July 1889, and this in turn provides a *terminus ante quem* for the painted version of the composition hidden below *Ravine*. The painting must have been (largely) complete by c. 2nd July 1889, when the drawn copy was presumably sent to Theo. Since Vincent did not venture to paint outside of the asylum walls until the first week of June of that year but the view is unmistakably of the local countryside, it is most likely to have been created between c. 6th June and c. 2nd July 1889.
The *Wild Vegetation* canvas was re-used as a support for *Ravine* in early October 1889. The Boston *Ravine* is the earlier of two versions painted by Van Gogh during his stay at Saint Rémy (May 1889 – May 1890). The second, now in the collection of the Kröller-Müller Museum, Otterlo, The Netherlands, (Fig. 9) was painted two months later in December 1889.

As is well known, the re-use of discarded paintings as a support for new compositions is relatively common in Van Gogh’s oeuvre. Recent systematic examination of his Antwerp and Paris paintings at the Van Gogh Museum, Amsterdam suggests that almost one third of the surviving paintings from these years (November 1885 – February 1888) was painted on previously used canvas. One of the aspects that is unusual in the case of *Ravine* is that the canvas was re-used without any apparent adjustments to the surface prior to painting. The large majority of paintings that Van Gogh re-used while working in Antwerp and Paris was prepared for the application of a new painting by applying an intermediate ground layer or a dark blocking-out layer, or by scraping down the paint layers to varying degrees, depending on the type of surface on which he wished to paint the new composition. The fact that Van Gogh decided to paint directly over the *Wild Vegetation* composition without taking these measures has contributed to its relatively good visibility today. The lower composition is also unusually clear and identifiable in X-rays due to the fact that the use of lead white seems to have been limited to the lower picture, while zinc white was the main white pigment used for the upper painting. (Fig. 10). As we have seen, the uncommon clarity of the abandoned picture made it possible to associate it with the drawn copy made of it, and, as a result, suggest a likely date for its creation.

While economy is seen as the reason for Van Gogh’s re-use of canvas prior to the spring of 1888, this is less likely to have been a motivating factor in the case of *Ravine* since Theo had not only increased Vincent’s monthly allowance in November 1888, but had also begun to pay for all of his brother’s artists’ supplies. As a result very few examples of canvas re-use are known in Van Gogh’s oeuvre after this date – only two apart from *Ravine*, and in neither case the lower composition has been identified. An examination of Van Gogh’s letters, however, reveals the most likely reason for recycling the *Wild Vegetation* canvas: Theo was slow in responding to Vincent’s requests for a supplies, so that the artist had depleted his supply of canvas before the new order arrived. In a letter of c. 8th October 1889, in which he mentions that *Ravine* is in progress, he expresses his frustration at the situation: “If you haven’t already sent off the canvas and the paints you should know that I am completely without canvas at present.”

Thus it seems that Van Gogh was forced to recycle a canvas in order to be able to capture the autumnal effects at a local ravine called ‘Les Peiroles’, it is possible that he also made extensive adjustments to *Entrance to a Quarry* in the same period (see note 21). He describes the circumstances in which he painted *Ravine* in a letter to his friend Émile Bernard: “[...] it is fun to work in rather wild places, where one has to dig one’s easel in between the stones lest the wind should blow the whole caboodle over.” Plant fibers embedded in the paint confirm his having worked *en plein air* (Fig. 11).
Microscopic examination of the painting has made it clear that Van Gogh laid out his composition for Ravine using charcoal or a soft graphite pencil, directly on top of the hard impasto surface of the Wild Vegetation painting. Some of these drawing lines remain visible with a stereo-microscope: where they have been left uncovered by the brushstrokes of Ravine, and where the graphite/charcoal particles have been picked up by and incorporated into the paint (Figs. 3, 12, 13).

In conclusion - technical examination of Vincent Van Gogh’s Ravine revealed the existence of a second painting below the paint surface. The underlying composition, a view of a mountain meadow in summer, was most likely painted in June 1889, early during Van Gogh’s stay at the asylum at Saint-Rémy in Provence. The canvas was re-used four months later in October 1889 as a support for an autumnal view of a ravine close to the asylum. Van Gogh’s letters help to reconstruct the circumstances under which one picture was sacrificed for another, while the identification of a drawn copy of the lost painting, combined with the technical examination of Ravine make it possible to form an impression of the original appearance of the lower painting.

TECHNICAL NOTES
Since Van Gogh’s earlier paintings have undergone systematic examination but relatively little technical information has as yet been published on the works created post-Paris (mid February 1888 - July 1890), it is hoped that the details given below on ‘Ravine’ will become more meaningful as more information about paintings created during his time at Saint-Rémy (May 1889 – May 1890) becomes available. Results of the examination of the canvas and priming layer are discussed below. This information may, in the future, make it possible to establish whether the paintings of which drawn copies were sent to Theo in July 1889 were painted on canvas cut from a single roll.

Comparative technical examinations of canvas supports and priming layers of Van Gogh’s paintings, combined with information available from his correspondence, have proven to be fruitful tools to help group works chronologically within his oeuvre, sometimes quite precisely. Since the composition of preparatory layers on commercially prepared primed canvases varied from roll to roll, even when derived from one particular colourman, examination of these layers has been particularly valuable.

While systematic examination of the preparatory layers of Van Gogh’s Antwerp and Paris paintings has been carried out, similar research into Saint-Rémy paintings has not yet been published but is currently in progress at the Van Gogh Museum and Kröller-Müller Museum. Some of this information was generously made available, and this is included in the discussion below in addition to findings from individual examinations at other institutions. It should be stated, however, that only a limited amount of directly comparable technical data is available.

During his stay at the asylum in Saint-Rémy Vincent used only one type of pre-primed canvas, ordered from the Parisian colourman Tasset et L’Hôte - he was not able to buy his materials locally, as he had done in Nuenen, Antwerp.
and Paris. He placed his orders through his brother Theo, who organised for the shipment and paid the bills.\(^3\) Vincent ordered the canvas in rolls of 2m wide by 5 or 10m long, which he stretched onto standard sized stretchers or strainers,\(^4\) as had been his practice once he moved away from Paris to Arles.\(^5\) The correspondence between Vincent and Theo provides the dates of orders and arrivals of canvas rolls, as well as the gaps in Vincent’s supply of canvas when Theo was late in responding to his requests.\(^6\) Weave characteristics and ground compositions of some of these rolls have now begun to be assembled for the Saint-Rémy paintings at the Van Gogh Museum, Amsterdam and Kröller-Müller Museum, Otterlo.

Where does the canvas used for *Ravine* and the painting below it fit in? It is likely that the majority of the paintings of which drawn copies were sent to Theo c. 2 July 1889 were painted on canvas cut from the same roll, since the next one did not arrive until c. 6th July. If we assume that the drawn copy of the *Wild Vegetation* painting belonged to this group, the painting is likely to have been created on canvas from this first roll that Van Gogh received at Saint-Rémy.\(^7\) As yet few of the paintings from May-June 1889 have been examined.

*Ravine* is painted on a simple tabby-weave canvas. (Fig. 14). The average weave density, measured from the X-radiographs, is 12.3 warp by 17.3 weft threads per centimeter, with a variation of 12-13 and 16.5-18 respectively. Very similar average thread-counts were found in forty of forty-two Saint-Rémy paintings from the collections of the Van Gogh Museum and Kröller-Müller Museum,\(^8\) and in three paintings that are likely to have been painted on the same roll of canvas as *Ravine*.\(^9\) Although this confirms that the canvas used for *Ravine* is likely to have been the standard type of pre-primed canvas from Tasset & l’Hôte that Van Gogh normally ordered, more information is needed to be able to group it with others that might have been cut from the same roll.

The rolls of pre-primed canvas that Van Gogh ordered would have displayed clear cusping patterns from the priming process, in which canvasses of 10 by 2 meters were stretched onto looms to be primed by the colourman. These cusping patterns, combined with irregularities in the weave pattern or in the application of the ground, can make it possible to establish whether two pieces of canvas were cut from the same roll, and, in some cases, reconstruct from which part of a roll a piece was cut.\(^10\) In the case of the *Ravine* canvas, cusping is visible in the X-radiograph along the left-hand vertical side, suggesting that the canvas was cut from one of the long sides of the roll.\(^11\) The cusps recur with intervals increasing from 7 cm at the top to 16 cm at the bottom, and extend into the painting by c. 11 cm. No weave irregularities or variations in the ground application were noted. The cusping pattern is quite irregular in comparison with data from the Van Gogh Museum and Kröller-Müller Museum – although this may prove to be a useful distinguishing feature of canvas from this particular roll, such conclusions are not possible until more paintings dating from May-June 1889 have been examined and other painting supports originating from the same roll have been identified.
A particularly useful source of information to distinguish different sources or rolls of canvas within Van Gogh’s oeuvre has been the comparison of the composition of canvas preparatory layers.41 The small number of paint samples taken from Ravine suggest that a single ground layer is present. It consists of lead white, with some zinc white and barium sulphate, and a small number of iron oxide earth pigment particles most likely present to adjust the tone of the ground layer to an off-white.42 The binding medium was not tested, but it is estimated to be oil. It is likely to have been a relatively unabsorbent ground. Although zinc was not found in the majority of Tasset & L’Hôte lead white grounds examined, grounds consisting of lead white with additions of zinc white and barium sulphate were also identified on a number of canvasses used in early 1889.43 Unfortunately no comparable data is available for paintings that are likely to have been painted on canvas from the same roll as Ravine.

The discovery of a composition below Van Gogh’s Ravine formed the stimulus for the technical examination described above. The relatively brittle condition of the paint layers limited the number of paint samples that could be taken. As a result the examination focused on the characterisation of the canvas support, and the microscopic investigation of the paint surface in order to reconstruct the original appearance of the lower painting and to establish the way in which it had been recycled in preference of the Ravine composition. The dearth of comparable information about the paintings that Van Gogh created at Saint-Rémy in May-June 1889 limits the conclusions that can be drawn at present, but it is hoped that the observations described here will become more useful as information on these pictures is collected.

ACKNOWLEDGEMENTS

I am grateful to Louis van Tilborgh for his generous and enthusiastic participation in this creative collaboration. I would also like to express my gratitude to Nienke Bakker, Gisela van der Doelen, Tiarna Doherty, Muriel Geldof, Charlotte Hale, Ella Hendriks, Richard Kendall, Irene Konefal, Rhona MacBeth, Dorothy Mahon, Chris McGlinchey, Cecily Morse, Richard Newman, George Shackelford, Elizabith Steele, Marcia Steele, Luuk Struick van der Loeff, Helen Mar Parkin, Elizabeth Rathbone, Henry Travers Newton, Evert van Uttert and Marije Vellekoop.

This research was carried out during an Andrew W. Mellon Fellowship for Advanced Training in Paintings Conservation – I am thankful to the Andrew W. Mellon Foundation for its support.

Images are courtesy of the Museum of Fine Arts, Boston; the Van Gogh Museum, Amsterdam, The Netherlands (Fig. 7); and the Kröller-Müller Museum, Otterlo, The Netherlands (Fig. 9).

BIBLIOGRAPHY


APPENDIX 1

Drawings after paintings, sent to Theo Van Gogh July 2nd 1889

The following drawings are likely to have been included in the shipment, listed here with the painting from which they were copied. The pairs included in this list are based on the references listed in note 7 above. Alternative titles are given where relevant, based on the title used by the current owner of the object. The shipment of drawings is referred to in letters 597, W13 and T12.

1. Cypresses
   Drawing – Brooklyn Museum, New York. (E1525, JH1747) (62.3 x 46.8 cm)
   Painting – Metropolitan Museum, New York. (F613, JH1746) (93.3 x 74.0 cm)
2. **Cypresses with Two Female Figures**
Drawing – The Art Institute, Chicago. (F1524, JH1749) (62.5 x 46.8 cm)
Painting – Rijksmuseum Kröller-Müller, Otterlo. (F620, JH1748) (92 x 73 cm)

3. **Enclosed Wheat Field with Reaper**
Drawing – Berlin, Kupferstichkabinett. (F1546, JH1754) (45 x 58.5 cm)
Painting – Enclosed Wheat Field with Reaper and Sun, Kröller-Müller Museum, Otterlo. (F617, JH1753) (72.0 x 92.0 cm)

4. **Field with Poppies**
Drawing – Private collection. (F1494, JH1752) (46.5 x 62.5 cm)
Painting – Kunsthalle Bremen. (F1581, JH1751) (71.0 x 91.0 cm)

5. **Enclosed Wheat Field after a Storm**
Drawing – Van Gogh Museum, Amsterdam. (F1547, JH1724) (47.0 x 61.8 cm)
Painting – Mountainous Landscape seen over the Wall, Ny Carlsberg Glyptotek, Copenhagen. (F611, JH1723) (70.5 x 88.5 cm)

6. **Olive Trees in a Mountain Landscape**
Drawing – Museum of Modern Art, New York. (F1544, JH1741) (47 x 62.5 cm)
Painting – Olive Trees with the Alpilles in the Background, Museum of Modern Art, New York. (F712, JH1740) (72.6 x 91.4 cm)

7. **Starry Night**
Drawing – Moscow, Museum of Architecture. (F1540, JH1732) (47 x 62.5 cm)
Painting – Museum of Modern Art, New York. (F612, JH1731) (73.0 x 92.0 cm)

8. **Trees with Ivy in the Garden of the Asylum**
Drawing – Van Gogh Museum, Amsterdam. (F1522, JH1695) (62.3 x 47.1 cm)
Painting – A Corner in the Garden of Saint-Paul Hospital, current location unknown. (F609, JH1693) (92.0 x 72.0 cm)

9. **Wheat Field**
Drawing – Pierpont Morgan Library, New York. (F1548, JH1726) (46.7 x 61.7 cm)
Painting – Green Wheat Field with Cypress, Narodni Gallery, Prague. (F719, JH1725) (73.5 x 92.5 cm)

10. **Wheat Field and Cypresses**
Drawing – Van Gogh Museum, Amsterdam. (F1538, JH1757) (47.1 x 62.3 cm)
Painting – Wheat Field with Cypresses at the Haute Galline Near Eygalieres Metropolitan Museum of Art, New York. (F717, JH1756) (73.0 x 93.5 cm)

11. **Wild Vegetation in the Mountains**
Drawing – Van Gogh Museum, Amsterdam. (F1542, JH1742) (47.1 x 62.4 cm)
Painting – [Museum of Fine Arts, Boston, beneath Ravine, October 1889. (F662, JH1804) (90.5 x 71.8 cm)

ENDNOTES


2. Oil on canvas, 71.8 x 90.5 cm. F662, JH 1804. The painting entered the collection in 1952, but was on loan to the museum frequently from 1929.

3. Initially, existing X-rays were examined taken in May 1932 by Alan Borroughs of the Fogg Art Museum, Cambridge, MA. (Record is available in conservation object file at Museum of Fine Arts, Boston). As soon as the significance of what was visible became apparent new X-rays were taken by the author at more appropriate exposure settings, this time including the edges of the canvas and overlaps between the plates so that a complete digital mosaic could be assembled.

4. Of the upper painting only the outlines of the natural bridge, the frothing stream and the sky directly surrounding the largest mountain peak were recognisable, as well as some of the shrubs clinging to the rock faces.

5. *Wild Vegetation*, reed pen, pen, brush and brown ink on wove paper. 41.7 x 62.4 cm. Van Gogh Museum, Amsterdam. F 1542. There are slight variations between the drawn and the painted version, possibly due to the
difference in shape of the supports. A comparison of the other paintings and drawn copies from this immediate period reveals similar shifts and variations.

6 Paint samples were examined by Richard Newman (Senior Research Scientist, Museum of Fine Arts, Boston), using incident polarised light microscopy and SEM-EDS.


8 The drawings are referred to in letters 786/597, 788/W13 and 791/603. The drawings that are likely to have been included are listed in Appendix 1 with the painting from which they were copied. The pairs included in this list are based on the references listed in note 7 above.

9 Letter from Vincent to Theo, 786/597.

10 See letters from Vincent to Theo: 780/593 (31st May-c.6th June 1889) and 781/594 (9th June 1889).

11 See letter 810/610.

12 Ravine (F661, Otterlo, Kröller-Müller Museum). Canvas, 73.2 x 93.3 cm. Van Gogh described the first version as a study (see letter 831/619, 13th December 1889). Regarding his opinion of both versions, see also letters 836/621 (3rd January 1890) and 838/612 (4th January 1890). See also J. ten Berge et al, The paintings of Vincent Van Gogh in the collection of the Kröller-Müller Museum. T. van Kooten, M. Rijnders (eds.). Otterlo, The Netherlands: Kröller-Müller Museum, 2003, pp. 332-35.


14 Twenty-five of sixty-seven paintings examined were found to have been painted on previously used canvas, in E. Hendriks in Hendriks and van Tilborgh 2006, op. cit. at note 13 above, p. 113. An earlier Van Gogh Museum study of paintings dating from 1883-1887 (Nuenen – Paris) showed that 15% (20 out of 130) pictures had been recycled, see S. van Heugten, ‘Radiographic images of Vincent Van Gogh’s paintings in the collection of the Van Gogh Museum,’ in: The Van Gogh Museum Journal, 1995, p. 63.

15 In the cross-sections examined it was not possible to distinguish a clear transition between the superimposed paintings.

16 See Hendriks and van Tilborgh 2006, op. cit. at note 13 above, Table 5. Of the 25 paintings listed, 5 had neither a second ground layer nor a dark blocking-out layer, and 11 were not scraped down at all.

17 He did not take the trouble to rotate the canvas to use it ‘upside down’ either, to reduce the degree to which the existing painting might have interfered with the creation of the new composition. In fact, it seems that he made use of both the colours and the textures of the brushstrokes of the lower painting for Ravine, letting his brush skip over the tops of the dry impasto and leaving the lower colours exposed in places. It is possible that his dwindling supply of paint at this time played a part in his decision to do so, see letters 807/608, 809/609, and 810/610. The arrival of the paints he had ordered is described in letter 817/611 to Theo, c. 25 October 1889. Regarding Van Gogh’s interest in painting on a distressed surface see E. Hendriks in Hendriks and van Tilborgh 2006, op. cit. at note 13 above, pp. 130-1.
A cross-section taken along the top-edge of the painting at centre shows that in this area the use of lead white was restricted mostly to the lower composition, and was only used in the first layer of Ravine, while zinc white is the main white pigment found in the paint layers of the upper painting in the area sampled. If this is reflective of Van Gogh’s choice of white pigments for other parts of the Ravine, it could explain in part why little of the upper painting is visible in the X-ray. Again, it is possible that his dwindling supply of paint at this time played a part in his choice of materials. See note 17 above.


See letter 595/475.


20 See letter 595/475.


Letter 810/610. Vincent had written to Theo on 28th September 1889 with his order (letter 708/608); in a letter dated 5th October 1889 he had urged him to send off his order as soon as possible and had asked him to add an additional 5 or 10 meters of canvas to his order (letter 809/609). The new canvas did not arrive until around 24th October 1889 (Letter 817/611). Many thanks to Nienke Bakker, who was quick to point out the relevance of these letters to our research. For a further discussion of disruptions in Van Gogh’s supply of canvas, please refer to M. Chavannes and L. van Tilborgh, op. cit. at note 1 above, pp. 549-550.

A 1889 photograph of the ravine is included in M. Bonnet, Saint-Rémy-de-Provence: chronique photographique de Frédérique George (1886-1933), n.p., 1992, p. 90.

Letter 811/B20, c. 8th October 1889.

Identification based on examination of a scraping using polarised light microscopy. The charcoal/graphite underdrawing was not visible in the paint samples that could be taken. The strong painted contours of the main shapes probably cover some of this underdrawing, but some lines remain visible, for instance at the upper arch of the natural ‘bridge’ in the centre of the composition, and indicating an initially lower placement of the right half of the central mountain peak. None of the drawing lines are visible with infra-red reflectography. Some exposed particles are likely to have been picked up and removed by varnishing and cleaning. Charcoal drawing lines used as part of the paint process to redefine initial paint layers are reported by L. van Tilborgh and E. Hendriks: ‘The Tokyo Sunflowers: a genuine repetition by Van Gogh or a Schuffenecker forgery?’, The Van Gogh Museum Journal, 2001, p. 35 and note 106 same page. See also K. Hoermann Lister 2001, op. cit., p. 64, and p. 65 n. 9.

Brushstrokes from the upper composition did not disrupt the brushstrokes of the lower painting or blend into them. In addition very few drying cracks have formed in the upper painting, reinforcing the impression that the paint layers were dry when they were overpainted.


See Appendix 1 for a list of the pairs of paintings and drawn copies, and see notes 8 and 9 above.


Many thanks to Ella Hendriks and Muriel Geldof for sharing some of their preliminary results.

Hendriks and Geldof 2005, op. cit. at note 27 above, p. 150, and p. 150 notes 50 and 55. For Van Gogh’s use of

32 The had begun to pay for Vincent’s supplies in spring 1888, see letter 595/475 and note 20 above.

33 Although Ravine’s tacking margins have been removed its dimensions remain close to a number 30 Figure standard size stretcher (92 cm x 73 cm): the painting’s current dimensions are 90.5 cm x 71.8 cm. Out of the eleven paintings in the group of which drawn copies were sent together c. 2nd July 1889, the current dimensions of ten are within a centimeter of a number 30 Figure standard size canvas. An early photograph of the Ravine of circa 1904 shows a slightly larger painted surface area along the upper and two vertical sides. Many thanks to Luuk Stuick van der Loeff for bringing this photograph from the Hélène Kröller-Müller archive to our attention. The painting was lined onto a primed canvas by Charles Durham on 3 November 1930. The original tacking margins were removed as part of this process. See ‘Treatment History’ report in MFA conservation file.


35 I am grateful to Louis van Tilborgh for sharing this avenue of his research with me. Some of these results are discussed in M. Chavannes and L. van Tilborgh, op. cit. at note 1 above, pp. 549-550.

36 The first roll was ordered c. 22 May 1889 (letters 778/592, 780/593), the order was changed to a longer roll c. 2 June 1889 (letter 780/593), and the shipment was received c. 9 June 1889 (letters 781/594, 782/W12). The second roll was ordered c. 25 June 1889 (letter 785/596), and received c. 6 July 1889 (letter 790/599).


38 Cypresses (F613, New York, Metropolitan Museum), Cypresses with Two Female Figures (F620, Otterlo, Kröller-Müller Museum) and Wheat Field with Reaper and Sun (F617, Otterlo, Kröller-Müller Museum), private communication with Ella Hendriks, Van Gogh Museum, Amsterdam.

39 See for instance Hoermann Lister, Peres and Fiedler 2001, op. cit. at note 29 above, pp. 365-6.

40 Primary cusping is also visible along one short side of three other paintings that were possibly painted on the same roll of canvas: F620, F612 and F617, private communication with Ella Hendriks, and Chris McGlinchey, Museum of Modern Art, New York.


42 See note 6.

43 Berceuse (F504, Otterlo, Kröller-Müller Museum), Orchard of Arles with Trees in Blossom (F515, Amsterdam, Van Gogh Museum), and Still life: drawing board, pipe, onions and sealing wax (F604, Otterlo, Kröller-Müller Museum), see Hoermann Lister, 2001, op. cit., pp. 72-3, n. 23. A similar ground, possibly artist-applied, was identified on a canvas from early summer 1886: View of Paris (F261, Amsterdam, Van Gogh Museum), see Hendriks and van Tilborg, op. cit. at note 13 above, vol. 2, pp. 55-56.
THE ART OF ARTE POVERA

Paula De Cristofaro

ABSTRACT — The Italian Arte Povera artists, active since the 1960s, are addressed in this research. Findings concerning the artists’ processes are presented and the content of artist interviews will be referenced. This research was conducted during an eleven-month Fellowship at the American Academy in Rome, where I was the recipient of the 2005-2006 Booth Family Rome Prize in Historic Preservation and Conservation.

INTRODUCTION

The artists associated with Arte Povera often employed natural, unorthodox, and ephemeral materials into their work, including elements such as water, fire, earth, and air, in addition to neon, ice, wax, straw, lettuce, coal, live animals, etc. In their use of such unusual methods and innovative media, the artists were responding to a culture torn by World War II, postwar rebuilding, industrialization and social change. With the passage of time, some of the Arte Povera works have aged to the degree that recording the thoughts of remaining living artist members is vital to understanding preservation issues relating to their more fragile creations. In some cases, the artists’ comments and expressed preferences touch on the subject of what conservation and preservation efforts, if any, should or can be employed. As the artists of the Arte Povera group age, the need to document their intentions grows more urgent. This research is based largely on my conversations with Arte Povera artists and with their gallerists, archivists and colleagues.

A fundamental goal of my research was to create audio and visual documentation of Arte Povera artists speaking about their works. Sources close to the Arte Povera artists were also interviewed. A brief introduction to the artists is presented here, along with examples of the artists’ works and references to their materials, installations, intent, and issues of preservation and conservation.

This study reflects the larger, on-going initiative to record artist interviews being carried out by the Conservation Department at the San Francisco Museum of Modern Art.

POSTWAR ITALIAN ART

During the years immediately following World War II, and into the 1950s and 1960s, a group of Italian artists modified or abandoned the use of paint media on traditional planar canvas supports, although these artists maintained strong ties to the practice of painting. These particular artists incorporated unorthodox media and supports (from tar, sack-cloth, mould, kaolin clay, Cellotex® fiber board, to the inclusion of industrial plastic sheeting and everyday objects). They created works which pushed a two-dimensional support into the depth of the third dimension, as the artists moved “beyond painting”. The material of the work, rather than traditional media, became its visual platform. The artists were profoundly influenced by earlier twentieth century art movements such as Dada, Futurism and Surrealism, movements in which similar technical explorations were conducted.

To initiate this discussion of Arte Povera, three Italian artists of the postwar period who influenced the succeeding Arte Povera group of the 1960s will be introduced: Alberto Burri, Lucio Fontana, and Piero Manzoni. Burri’s sackcloth supports, Fontana’s cut and punctured canvases, and Mazoni’s use of humble, everyday objects (bread rolls and cotton wadding) inspired the material choices made by the Arte Povera artists.

ALBERTO BURRI

Alberto Burri (1915-1995) was born in Città di Castello, in Umbria, central Italy. Trained in the medical profession, Burri served as a field doctor during World War II. Burri was captured by the Allies in Ethiopia and was detained in a Texas POW camp until the end of the conflict.

Paula De Cristofaro
Paintings Conservator
San Francisco Museum of Modern Art
When Burri returned to Italy after the war, he abandoned his aspirations for a career in medicine to become an artist. His *sacchi* (Sacking) works of the late 1940s and 1950s are composed of rough fabrics, which are stitched or glued together and are often torn, burned or penetrated with holes (Fig. 1). The *sacchi* reflect the skills of an artist who had the dexterity of a surgeon, and for whom the horrors of war remained very fresh. The burlap sacks in which foodstuffs were sent to Italy as part of the postwar relief effort became Burri’s rough canvas supports (Fig. 2).

Burri’s *plastiche* (Plastics) of the 1960s utilize films of industrial plastic sheeting which the artist melted with a blow torch and manipulated while the plastic was still malleable (Fig. 3). The *plastiche* works have lasted well, despite the potential fragility and ageing of the plastic.

**LUCIO FONTANA**

Lucio Fontana (1899-1968) was born in Argentina and moved to Milan in 1928 to study art. Fontana created works on fabric and paper supports in the late 1940s through the 1960s which he called *tagli* (Cuts) and *bucchi* (Holes). Fontana slashed and penetrated the surfaces of his works with fierce energy, using an extremely sharp knife, awl or punch tool (Fig 4). The *tagli* and *bucchi* illustrate the violence of Fontana’s technique and his quest to open up a two-dimensional support by creating a passage into the depth of the third dimension.

**PIERO MANZONI**

Piero Manzoni (1933-1963), was born near Cremona, northern Italy, and lived in Milan. Manzoni’s series of *achrome* (Achromatic) works from the late 1950s to early 1960s pushes the use of a “traditional” artist support to a different level. Manzoni added multi-dimensional elements of fiberglass, cotton balls, and fabric dipped in Kaolin clay to canvases and panels (Fig. 5). Manzoni’s work was influenced by the French artist Yves Klein, with respect to the use of monochrome paint but, in contrast to Klein’s deeply saturated blue paint, Manzoni used white media (representing the absence of color) to express his aesthetic. The white *achromes* (Fig. 6), should optimally be pristine, and are problematic with respect to their housing, framing and conditions of display. Some of the *achromes* have aged poorly.

Interviews conducted with the archivists of each of these three artists provided great insight into the nature of the artists’ works, and contributed information that is pertinent to conservation and preservation efforts.

**THE ARTE POVERA MOVEMENT**

In 1967, Germano Celant, an art critic who lives in Genoa, northern Italy, held the first of a series of exhibitions of a group of Italian artists who had in common the practice of utilizing simple, humble materials in their artworks, and who incorporated unusual techniques and experimental processes. Celant called this art and its creators *Arte Povera*. The activity of Art Povera was centered primarily in the cities of Turin, Milan and Rome.

The artists of the Arte Povera were an eclectic group of individuals who had been making art since the early 1960s. They were inclined to convey in their works what they considered essential, rejecting minimalist art and the trappings of mass consumerism, pop art and pop culture. The Arte Povera artists engaged, instead, with what is elemental, basic, and quotidian in human experience. The pervasiveness of classical antiquity (Fig. 7 and Fig. 8) in Italian culture is another reference point for Arte Povera.
When regarding Arte Povera in a contemporary context, it is important to keep in mind Italy’s postwar economic boom in the 1960s and the effect this had on Italian daily life. Recovering from postwar deprivations (referred to in Alberto Burri’s *sacchi*), many Italians could now afford to purchase basic domestic items and enjoyed a comfortable, middle-class lifestyle that had been difficult to realize in the years immediately following the war. As the economic situation changed mid-decade, so did the socio-political environment. Unemployment, student unrest, and the ongoing economic imbalance between Italy’s industrial and affluent North and the impoverished rural South lead to social upheaval; worker and student demonstrations later in the decade tore apart communities throughout the country. The social and economic milieu of the mid-to-late 1960s is woven into the fabric of Arte Povera.8

Celant continued to stage his group Arte Povera exhibitions until 1971. In *The Knot*, an exhibition held in 1985 at the P.S. 1 Contemporary Art Center, New York, Celant recreated his earlier group shows to a large extent, giving the Arte Povera artists their first significant collective exposure United States. Individual Arte Povera artists had been featured in gallery shows and small exhibitions in the United States since the late 1960s. However, Arte Povera remained a relatively unknown and distinctly under-appreciated art movement in America until quite recently. An exhibition created by the Walker Art Center and Tate Modern in 2001, *Zero to Infinity: Arte Povera 1962-1972*, galvanized critical attention and stimulated broad re-appraisal of Arte Povera.9 Collectors have actively purchased Arte Povera works on an international level in recent years, resulting in an increase in the monetary value of these works on the art market, which has in turn had an impact on aspects of preservation decision-making and conservation treatment.10

Five artists associated with the Arte Povera group are discussed below: Giovanni Anselmo, Luciano Fabro, Piero Gilardi, Pino Pascali and Alighiero Boetti.11

**GIOVANNI ANSELMO**

Giovanni Anselmo was born in 1934 in the Piedmont region of northwestern Italy and currently lives in Turin. He left his career as a graphic designer in the early 1960s to pursue his art full time, after experiencing a seminal experience on the volcanic island of Stromboli, where he was surrounded by the elements of fire, water, earth and air (elemental materials which serve as the inspiration for many Arte Povera works).

Recurring themes in Anselmo’s art include gravity, weight, and tension, which are manifest in Anselmo’s 1988 work *Grigi che si alleggeriscono verso oltremare* (Greys Lightening towards “Oltremare”). Anselmo created this installation for the Carnegie Mellon International exhibition, and it was subsequently acquired by the San Francisco Museum of Modern Art (Fig. 9). The artist discussed this work at length during an interview.12 The work is composed of a series of stone blocks which hang precariously on hooks bolted to the wall. Each block weighs approximately 250 pounds. Pairs of blocks are encircled by a steel cable and are hung suspended from the hooks on the cable’s slip knot. Central to Anselmo’s conception is that the blocks are held aloft by their weight and the effect of gravity, which tightens the slip knot. These heavy blocks, cloudlike in their grouping, conceptually become lighter in their successive positioning away from the center of the earth and the center of gravity (Fig. 10). A rectangle of acrylic ultramarine paint is applied directly to the wall below the stone blocks and is a reference to the infinite horizon.
Anselmo provided a schematic diagram of how the blocks should be positioned in the San Francisco Museum of Modern Art’s 1989 installation (Fig. 11). Photographic documentation of the original installation at the Carnegie Mellon reveals a variation in the arrangement of the blocks. Anselmo stated that the installation of *Grigi che si alleggeriscono verso oltremare* could be flexible, relative to the space where it is exhibited. Most important to Anselmo is the overall position of the installation, rather than the exact placement of the stones.

When he explained his process of obtaining the stone from a quarry in the southeastern United States, Anselmo revealed how he allowed the natural forces implicit in the stone to express themselves and influence his work. After the stone was removed from the quarry, it was crucial that the blocks be shaped rather than cut. Holes were drilled into each rough block and the stone was then split by means of inserting dowels into the holes and tapping the dowels with a mallet (Fig. 12). Anselmo emphasized that when the blocks were split, the stone gave him direction. If the blocks were shaped by cutting, “the stone would be like merchandise, and would say nothing”.

The blue acrylic rectangle painted under the granite blocks was applied by Anselmo himself when the work was first installed in San Francisco. The original rectangle on its drywall substrate has been preserved for use as a template when applying the blue field each time the work is exhibited (Fig. 13).

The ultramarine serves to lead the viewer’s eye into distant space, to the horizon. The literal translation of *oltremare*, ultramarine, is “beyond the sea”, a reference to the exotic and precious lapis lazuli stone which was imported to Europe and made into the beautiful and expensive blue paint so prized in the Middle Ages and the Renaissance.13

When Anselmo reviewed a photograph of SFMOMA’s installation, he was concerned to see how low the ultramarine rectangle was applied in relation to the height of the average viewer (Fig. 14). The ultramarine blue, in its representation of the sea, the horizon-line and infinity, is meant to be positioned at eye level (about two meters up from the floor). It is the artist’s intention that the viewer look directly at the ultramarine, not downwards; the ultramarine should lead one’s gaze upward to the stone blocks. The work has been positioned too low since the original installation.

The information provided by Anselmo regarding how this work was made, and the appropriate height of the installation, articulates his concept, and allows it to be translated into a more expressive statement of his vision. As a result of his comments, the archive installation instructions for the work have been changed to insure that *Grigi che alleggeriscono verso oltremare* will always be installed at the proper height in the future, according to Anselmo’s intent.

**LUCIANO FABRO**

Luciano Fabro (1936-2007) lived and worked in Milan. The artist was born in Turin and spent his youth and adolescence in the Friuli region, in northeast Italy, before moving to Milan. His works are inspired by life’s daily experiences. Situations of time and space which actively engage the participation of the viewer are recurring themes. Fabro’s works can be ephemeral and fragile, requiring specific care and maintenance. The artist discussed examples of his work with these issues in mind when he was interviewed.14
Raccordo annulare (Ring Connection), 1963-64, is a three dimensional sculpture/installation (Fig. 15). Two brass rings of different circumferences are connected by a telescoping tube of brass. The circumference of the smaller ring corresponds to the circle the artist created by joining his thumbs and index fingers together; the circumference of the larger ring corresponds to a circle created by the artist’s outstretched arms. The rings can be installed as single or multiple units.\(^{15}\)

It was Fabro’s intention that Raccordo annulare be polished by hand while on exhibit, so that the brass surface would not become tarnished or worn, but always remain shiny. Polishing the brass is an important part of the work in itself, beyond the activity of maintenance. At one point, Fabro applied a protective coating to Raccordo annulare, but he decided that that the physical act of polishing the work in order to keep it bright was preferable.

Tre modi di mettere le lenzuola (Three Ways of Arranging Sheets), 1968, (Fig. 16) is comprised of white cotton bed sheets mounted on three separate wooden frames; the folds are carefully composed and secured, and the surface patterns vary between the panels. The pristine white surface and the sculptural forms of the folds are reminiscent of drapery carving on classical marble statuary. As was his intent with Raccordo annulare, Fabro did not want Tre modi di mettere le lenzuola to become grimy with age, but always wanted the work to look fresh and new. The sheets were hand-embroidered by the artist’s mother, so they cannot be replaced or refabricated if they become worn.

This information is essential to displaying and maintaining such works properly. If instructions are not recorded and do not remain with a particular work, there is a high probability that the artist’s intent will be compromised as the work and its context evolve, especially as the work ages with the passage of time. With Fabro’s oeuvre, each object has different requirements, and the artist’s instructions vary on a case-by-case basis.

PINO PASCALI

Pino Pascali (1935-1968) was born in Bari, in southern Italy. He moved to Rome in the early 1960s, where he worked as a set designer for Italian state radio and television, RAI. From the mid-1960s, Pascali devoted himself exclusively to art-making. He died in Rome from injuries incurred in a motorcycle accident.

Pascali’s style changed rapidly throughout the course of his artistic career. His use of a variety of materials, water, earth, straw, steel wool, and everyday objects including bristle scrub brushes (Fig. 17), exemplifies what is natural and humble in Arte Povera.

Il dinosauro riposo (Reposing Dinosaur), 1966, (Fig. 18) is an example of Pascali’s finte sculture (Pretend Sculptures). The finte sculture are three-dimensional works executed in canvas stretched over an underlying wooden framework. Some works are free-standing; others are mounted on a wall. The finte sculture evolved from the artist’s earlier shaped-canvas works (Fig. 19).

The finte sculture can be easily damaged and they are prone to visual change as their materials age. The finte sculture mimic marble sculptures of classical and modern periods, but Pascali’s glue-primed and white-painted canvas structures are easily scuffed, as these works are often exhibited on the floor and are hard to protect. The monochrome surfaces are prone to degradation, becoming discolored and grimy over time.
Examples of *finte scultura* works in the collection at the Galleria Nazionale d’Arte Moderna, Rome, are in good condition and have not required major conservation intervention. Other *finte scultura* have changed considerably, and may no longer represent Pascali’s original intent (Fig. 20 and Fig. 21). The challenge of how to maintain, preserve or treat these works is ongoing. Replacement of key elements and refabrication could be a treatment option when damage is severe.

Pascali’s gallerist and friend, Fabio Sargentini, first exhibited Pascali’s works (as well as those of Arte Povera artist Jannis Kounellis) in Rome at his Galleria L’Attico during the mid 1960s. Sargentini owns a number of works by Pascali. He discussed the possibility of refabricating elements of Pascali’s works with great forthrightness. It is Sargentini’s belief that Pascali himself would have approved refabricating his works in instances where they were damaged or worn. The *finte scultura* pose one example where refabrication has been considered as a treatment option; Pascali’s fragile steel wool objects are another (Fig. 22). While it is appropriate to treat small damages locally, Sargentini is convinced that the canvas elements of the *finte scultura* can be replaced by a skilled artisan; this is an acceptable course of treatment when the work no longer represents Pascali’s original idea. “These works are not antique art,” Sargentini states. The underlying wooden framework of the *finte scultura* over which the canvas is stretched is proprietary to the artist’s hand; this element of the structure is most important and should be left intact, according to Sargentini (Fig. 23).

Refabrication or replacement of key elements of the components of contemporary art is a complex issue. Artists may, or may not, be inclined to carry out or authorize replication of their works in their lifetimes. Upon the death of an artist, the question of who decides when a particular artwork should, in whole or in part, be remade, and how this should be done, is a delicate issue. Unless a conversation with a living artist is held where their intentions are discussed, reconstructive treatment options become problematic, subjective, and can be hard to justify or accept from an ethical standpoint. Thus, the activity of gathering data and documentation specific to the artist’s intent and wishes while the artist is still living is of utmost importance. This information serves to guide informed decision-making with regard to exhibition, preservation and conservation of an artist’s work. One viable option is an authorized and clearly recorded conversation about these subjects with the artist, which effectively documents their specific instructions and directions. This record can guide the maintenance and preservation of works when the artist can no longer be consulted.

**PIERO GILARDI**

Piero Gilardi (born 1942) lives in Turin. In the 1960s, he created works made out of polyurethane foam, which he called *tappeti natura* (Nature Carpets). The *tappeti*, constructed in brightly colored, sculpted foam, replicate several square meters of a natural setting: a rocky beach, a forest floor, a detail of a garden, a fruit-bearing tree (Fig. 24 and 25). The *tappeti* were intended for interactive use. *Tappeti* could be produced in large rolls, and the artist implied that the works could be cut up into smaller sizes to fit a particular space or environment. Gilardi describes his work from the 1960s as “micro-emotive”.

Gilardi gave the author a studio demonstration of his method of carving, sculpting and adding color to the polyurethane foam (Fig 26). While informal, the demonstration covered the process from start to finish, and a video recording of this instructive session provides fairly complete documentation of this aspect of Gilardi’s method and materials.
Polyurethane foam is a problematic material; it can deteriorate over a short period of time, becoming desiccated and brittle. Gilardi was well aware of the challenges of using such a potentially fragile, non-durable material when he made these works. He experimented with different types of foam, consulting with manufacturers to learn more about the long-term properties of the material, and tried to utilize the highest grade foam products available, those which were least likely to age poorly.22

Going back in time to talk about his 1960s works made Gilardi pensive. He is very forward-thinking with regards to his artistic output and current projects. But he remains much involved with the conservation and preservation of his early works, collaborating with conservators on treatments of the tappeti23 and carrying out his own treatments, although the artist is not always satisfied with the results. Gilardi’s fragile tappeti are now often exhibited in Plexiglas® vitrines as a preventive conservation measure, but these works lose their essential vitality as tactile objects when enclosed behind protective glazing. Should a work made out of a medium which is not durable and is deteriorating due to the inherent vice of its materials and fabrication be exhibited in a manner far removed from the artist’s original conception? Should an artwork be relegated to a slow death in storage, even though much can be learned from exhibiting it in a deteriorated state? Who has the authority to make such exhibition and storage decisions?

ALIGHIERO BOETTI

Alighiero Boetti (1940 -1995), born in Turin, lived and worked in Rome. Boetti’s creative output revolves around the themes common to Arte Povera: dualism, tautology, mimetics and dialecticism. Boetti incorporated industrially manufactured products in his works and found many of his materials in hardware stores.24 Eternit®, a commercial substrate and pipe material which resembles lightweight concrete and is made out of asbestos, was an industrial product that Boetti and other Arte Povera artists chose to use (Fig. 27). 25

In the 1970s, Boetti traveled frequently between Rome and Afghanistan, and considered Afghanistan his second home. Boetti commissioned Afghani embroiderers to make his artworks while he ran a small hotel in Kabul. He did not return to Afghanistan after the Soviet occupation in 1979. Boetti created mappe (Maps), hand-embroidered on linen, which were fabricated by the best Afghani embroiderers the artist could employ. The large-scale mappe, resembling tapestries, depict the countries of the world with an embroidered representation of each region’s national flag (Fig. 28). Boetti declared that he had nothing to do with making these works—someone else did it for him.26

Boetti distanced himself from the physical creation of the recami (Embroideries) as part of his process, but he did make detailed preliminary studies for the mappe which were used as templates by the embroiderers (Fig. 29). Boetti introduced appropriate modifications to each new mappa as governments and borders changed. The mappe were intended to be suspended from rods and hung on the wall like tapestries, but many are now backed with fabric and mounted onto wooden frames. The mappe are thereby transformed into more rigid objects, loosing their original and characteristic fabric “drape”.

Boetti’s biro works, ballpoint pen ink on paper, relate to the mappe in that Boetti’s assistants carried out the execution of the background fields (Fig. 30). Variances in the multiple ink markings are reminiscent of the irregularly embroidered backgrounds of the recami. The individual pattern of the assistants’
drawing in these works was much prized by Boetti, who claimed he could identify which assistants had drawn a particular section of the background on the basis of their penmanship (Fig. 31).

The biro works are particularly sensitive to fading: some of the drawings have been damaged by exposure to prolonged illumination or high light levels. The artist’s widow, Anne-Marie Sauzeau Boetti, recalled one instance where a biro drawing had become badly faded. The assistant who had originally worked on it was called back to go over the damaged surface with a new application of ink, but the results of this treatment were not satisfactory. In cases where black biro works have faded to a softer grey, the transition is subtle and more acceptable. In brighter red, green and blue biro drawings, the disfigurement caused by fading is less acceptable. Limiting the biro drawings to light exposure is a crucial preventive conservation measure.27

The conservation and preservation issues associated with Arte Povera were a primary focus of this research. An additional goal of the project was to illustrate Arte Povera in its cultural setting, enabling the viewer to more fully understand and appreciate what unique to the Italian provenance of these works. Boetti’s L’albero delle ore serves to illustrate this point.

L’albero delle ore (Tree of the Hours), 1979, is an embroidery made in three versions (Fig. 32). Boetti created numerous preparatory sketches for the work in pen or pencil on paper (Fig. 33). L’albero delle ore was inspired by the twenty-four hour sequence of bell-chimes of the church of Santa Maria in Trastevere, Rome, which is across the piazza from the studio Boetti maintained in the 1970s.

To depict the two different notes of the church’s bells, Boetti had his embroiderers use symbols to indicate the hour and quarter-hour chimes (Fig. 34). The hours of one am and one pm are indicated at the top of Boetti’s symmetrical, tree-shaped image; forty-five minutes past twelve noon and twelve midnight are represented at the bottom of the design. The progression of chimes is transcribed downwards in horizontal rows from the minimum to the maximum sequence.

If one is in Rome’s Trastevere neighborhood, across the Tiber River from the oldest part of the city’s historic center, the experience of hearing Santa Maria in Trastevere’s bells at any hour, with Boetti’s L’albero delle ore in mind, lends a particular poignancy and site-specific impact to the work (Fig. 35). One considers the constant presence of the ringing bells in Boetti’s studio life, day and night, and is reminded of the inexorable passage of time.

SUMMARY
My goal is to publish English transcripts of my artist interviews and to create a website devoted to the Art of Arte Povera, which will feature my audio and video documentation. My archive of material will serve as a resource for anyone interested in the processes, materials and preservation issues of Arte Povera.

ACKNOWLEDGEMENTS
I am indebted to my colleagues at the American Academy of Rome and at the San Francisco Museum of Modern Art. I also wish to thank the many Italian individuals who were so generous with their time, in particular, Giovanni Anselmo, Luciano Fabro, Piero Gilardi, Fabio Sargentini, and Anne-Marie Sauzeau Boetti.
REFERENCES

1 “...when we explore the nature of matter, we are not talking about a technique, but about the use of something substantial which is applied, distressed, etched into, slashed, fossilized, even vaporized, in order to become in the end the work of art, that moment of intelligence and intuition which is the artist’s gift to us” (Renato Miraco, “Encounters with Matter,” *Beyond Painting: Burri, Fontana, Manzoni* [London: Tate Publishing, 2005]: 20).

2 Tate Modern’s 2005 exhibition *Beyond Painting: Burri, Fontana, Manzoni* and the accompanying book of the same title feature these three artists and their moment in postwar art. It is worthwhile noting that numerous American artists, including Robert Rauschenberg, Cy Twombly and Jasper Johns, had traveled and lived in Italy and exhibited there in the 1950s and onward; there was much exchange between American and Italian artists in the decades following the war.

3 From a note in the Yves Kein file, SFMOMA, “International Klein Blue is just an ultramarine pigment. Klein worked with a scientist in order to create a pastel effect, whereby powdered pigment would stay powdery-looking but would also adhere to the surface. The surface, however, was never actually a loose powder, but was rather always bound with a Rhodopas® paste product” (excerpt from a telephone conversation between Will Shank and Sidra Stitch about Yves Klein’s technique on March 17, 1999). See also Carol C. Mancusi-Ungaro, “A Technical Note on IKB,” *Yves Klein, a Retrospective* (Houston: Menil Collection, 1982), 258.

4 According to Manzoni’s archivist, Rosalia Pasqualino di Marineo, Manzoni wanted his achromes to remain pristine (conversation between the author and Sra. Pasqualino di Marineo at the Archivio Piero Manzoni, Milan, on January 24, 2006).


6 The name Arte Povera, used by Celant, was inspired by Polish playwright Jerzy Grotowski’s “poor theater” movement, where the trappings of the theatrical experience were stripped away to the bare essentials: the actor and the audience.

7 “Arte Povera, like other Italian art tendencies that preceded and follow it, had to negotiate the present through the residue of the past” (Francesco Bonami, “Now We Begin,” Richard Flood and Frances Morris, *Zero to Infinity: Arte Povera 1962-1972* [Minneapolis: Walker Art Center, 2001] 110).


9 The exhibition *Zero to Infinity: Arte Povera 1962-1972* was staged at Tate Modern, the Walker Art Center, the Museum of Contemporary Art, Los Angeles, and the Hirshhorn Museum and Sculpture Garden, between 2001 and 2003.


11 Interviews were carried out with Luciano Fabro, Giovanni Anselmo, and Piero Gilardi. Interviews were also conducted with Pino Pascali’s gallerist, Fabio
Sargentini, and Alighiero Boetti’s widow, Anne-Marie Sauzeau Boetti, as Pino Pascali and Alighiero Boetti had passed away in 1968 and 1995, respectively. Germano Celant’s original group of Arte Povera artists included Giovanni Anselmo, Alighiero Boetti, Pier Paolo Calzolari, Luciano Fabro, Jannis Kounellis, Mario Merz, Marisa Merz, Giulio Paolini, Pino Pascali, Giuseppe Penone, Michelangelo Pistoletto, Emilio Prini and Gilberto Zorio.

12 Giovanni Anselmo was interviewed by the author at his home in Turin on April 6, 2006.


14 Luciano Fabro was interviewed by the author at his home in Milan on March 9, 2006. The artist died the following year, on June 22, 2007.

15 “My ambition was to build a hinge between myself and the outside world, to find a point of contact, the point of naturalness between reciprocal contact,” Luciano Fabro as quoted in John Caldwell, Luciano Fabro (San Francisco: San Francisco Museum of Modern Art, 1992), 98.

16 Paola Carnazza, conservator at the Galleria Nazionale d’Arte Moderna in Rome, discussed the Museum’s collection of Pascali works in detail with the author. A large number of Pascali’s works were donated to the Museum by the artist’s family.

17 Fabio Sargentini was interviewed by the author at his Galleria L’Attico in Rome on May 11, 2006.

18 Cesare Brandi’s seminal treatise on the conservation of antique and traditional artworks has been translated from Italian into English. See Cesare Brandi Theory of Restoration, (Florence: Nardini Editore, 2005). The conservation of contemporary art is a relatively recent specialization in the field. Traditional ethics and methods of conservation treatment cannot always be applied to challenging condition problems presented by contemporary artworks.

19 Please refer to the Getty Conservation Institute’s website to download presentations in video format from the important conference on the conservation of modern and contemporary artworks. The Object in Transition: A Cross-Disciplinary Conference on the Preservation and Study of Modern and Contemporary Art was held at the Getty Center, Los Angeles, January 25-26, 2008. http://www.getty/object_in_transition_html

Excerpt from the Getty website for The Object in Transition: “...conservators by necessity study art through the empirical and scientific analysis of objects. However, the challenges posed by modern materials often lead to decisions about an object’s preservation and acceptable aging that are based on more subjective inferences about the artist’s original intent—an interpretive concept that many art historians view with some skepticism.”

20 “Make what you will of these rolls of Nature rug. If you can persuade Sperone to sell you some by the metre.... you can cover the paving of your terrace with ‘sea’, so that it will get drenched when it rains, and even feel realistic to the touch...” Gilardi quoted in a 1967 interview (Carolyn Christov-Barkargiev, Arte Povera [London: Phaidon Press Limited, 1999]: 278).

21 Gilardi uses pigments ground in synthetic resin Plextol® acrylic medium. His primary methods of applying the paint to the polyurethane foam surfaces are as follows: he dips the foam element in a container of liquid paint and squeezes out the excess, he applies paint directly to the surface with a brush or roller, the paint is spray-applied to the surface, or combinations of these techniques. Gilardi was interviewed in his Turin studio by the author on May 4, 2006.


24 “These were tremendous times for materials as well—a revelation. When I made the Catasta (Pile) from asbestos tubing, I went to a supplier of building materials. It was thrilling to see the wonderful things that were there! There was everything, from refractory bricks (which are stunning) to glass wool, to polystyrene, everything...some of the best moments in Arte Povera were hardware shop moments, there’s so much in a hardware shop!” Alighiero Boetti quoted in an interview in 1972, (Flood and Morris, Zero to Infinity, 189).

“...anyone could do it! The embroideries too! There is nothing new about it...” Alighiero Boetti interviewed in 1972, (Flood and Morris, Zero to Infinity, 190). A few years earlier, Andy Warhol expressed a similar sentiment regarding his silkscreen works: “One of my assistants, or anyone else for that matter, can reproduce the design as well as I could.” Jo Crook and Tom Learner, “Andy Warhol” The Impact of Modern Paints (London: Tate Gallery Publishing Ltd, 2000), 170.

Anne-Marie Sauzeau Boetti, Alighiero Boetti’s widow, discussed the artist’s working processes and the problems of his more fragile works with the author during an interview at the Archivio Boetti in Rome on May 3, 2006.

SELECTED BIBLIOGRAPHY


Photographic credits:

©Palazzo Abizzini Foundation, “Burri Collection” 2, 3
©San Francisco Museum of Modern Art, 1, 4, 7, 8, 10-14
© Ben Blackwell, 9
©Archivio Piero Manzoni, 5, 6
©Estate of Luciano Fabro, 15, 16
©Galleria Nazionale d’Arte Moderna, 17-19, 22
©Fabio Sargentini, 20, 21
©Piero Gilardi, 24-26
©Studio Giangaleazzo Visconti, 29, 30, 31, 33, 34
©Castello di Rivoli, 27, 28
©Dallas Museum of Art, 32
©Gian Franco Gorgoni, 35
©Vittorio Ribi, 23

Presented at the AIC annual meeting in Denver, Colorado, April 21-24, 2008.
This paper has not undergone a formal process of peer review.

109
ABSTRACT - A large portrait of St. Michael the Archangel as a Spanish Soldier was brought to our laboratory for analysis as part of an authentication study. In the course of our examination, we found that the painting had been folded, overpainted, after which at least some of the paint had been removed. All of this had occurred before a more recent restoration.

Our analytical strategy consisted of determining, first of all, whether the material constituents were consistent with the date and the geographical location of its supposed creation, and second, to sequence the painting's complex history and try to see if it could inform us about the painting's possible authenticity.

All of the paints analyzed, both present painting and the remnants of overpainting were found to be consistent with 18th – early 19th century South American usage. While we were able to sequence the various events in the painting’s story with some confidence, much about the painting remains a mystery.

INTRODUCTION

In the summer of 2007, we were asked to examine a large (64.5” x 41.5”) painting from South America, a full length, life-sized portrait of St. Michael the Archangel as a Spanish Soldier, complete with wings and arquebus. Figure 1 is a photograph of the painting; in Figure 2, co-author Carol Injerd is standing next to it for scale. The purpose of the study was to test its authenticity, to see if the painting’s constituent materials were consistent with 18th century availability and usage, the period suggested by style and costume. Please note, however, that our analysis was based solely on material factors; all art historical and provenance studies were undertaken by our client, a noted scholar and collector in this area.

EXAMINATION

During the examination and sampling (Fig. 3), a number of peculiarities came to light. The painting appeared to be not quite finished, as there was a white shield in the bottom left appropriate for a coat of arms, family emblem or at least a family name, but it was blank. Also, the craquelure was particularly heavy, even for a painting of this age. We also noticed that, while most of the craquelure was distributed in the random patterns associated with age, some of the deepest craquelure occurred as straight lines; it became clear that the painting had been...
folded. This was especially apparent when the painting was examined and photographed with ultraviolet fluorescence (Fig. 4). The painting had been folded once in the vertical direction and twice in the horizontal; we do not know in what order. Folded, the painting would occupy a space roughly 21” by 14”. This is small enough to easily store or transport, although at great cost, as the action clearly damaged the painting significantly.

As we examined the painting under stereomicroscopic magnification, we noticed that, in many areas, there was paint of a different color within the rather wide craquelure gaps. For example, there was blue paint within the craquelure on the white shield. Figure 5 is a photomicrograph from that area. Figures 6A and 6B show left white sleeve; above the elbow had been overpainted in blue, and below in red. We ultimately examined the entire painting and mapped the colors within the cracks. In many cases the paint in the cracks coincided with the paint surrounding the cracks, but often it did not. Figure 7 is a photograph of the painting showing the extent of the colors in the cracks.

But was the paint in the cracks actually an earlier underpaint? Lifting a few paint edges, it quickly became clear that under the present paint was only the light gray ground, whereas under the overpaint was the top paint or, in some cases, ground. So, the painting had been overpainted at some point in its history – and later, that overpaint had been mostly removed.

Just what was the source of the paint in the cracks? We immediately considered that perhaps there was a painting underneath, and it was only being exposed through the extensive craquelure. However, examining the painting layers by lifting paint at the edges of the cracks with a sharpened tungsten needle revealed that under the current painting was only the ground layer. Interestingly, this was also true of the paint in the cracks – it was not over the new layer, but over ground only. We could only conclude that the cracks had to be present before the paint in the cracks was applied to the painting. The painting had been over-painted in selected areas after the craquelure had formed, and then it had been removed at some point between then and now.
ANALYSIS

As customary in painting analysis, we began by collecting small samples of each of the constituent colors under the stereomicroscope. Because of the confusion due to the paint in the cracks, we collected about twice the number as usual, a total of 25 samples all together, 23 paint and two fiber samples. We analyzed the samples with a combination of polarized light microscopy (PLM) and scanning electron microscopy with energy dispersive x-ray spectrometry (EDS in the SEM) with a little help from infrared and Raman spectroscopy (IR and Raman).

CONSTITUENTS

The light gray ground layer turned out to be a mixture of chalk and charcoal black. Although elemental analysis was performed on every sample, these identifications were based on the particles' unique morphologies and distinctive optical characteristics.

The orpiment was very coarsely ground. Even with just the stereomicroscope, during sampling, we suspected that this would be orpiment, as the accordion-like shapes of the particles were already obvious. This was confirmed both with PLM and EDS in the SEM (Figures 8A and 8B). This pigment, arsenic sulfide, is easily identifiable with PLM alone and confirmed by the elemental analysis. Small amounts of realgar (a similar arsenic sulfide) were also found as an associated mineral; however, realgar does not appear to have been used as a primary pigment.

The red pigment was, in most cases, vermilion, in the dry process form. This pigment is also easy to identify, especially in the dry process form with a wide range of particle sizes. The boxy, well formed crystals, with very high refractive indices and high birefringence, almost black with plane polarized light and a fiery, cherry red with crossed polars – this pigment is unmistakable. Confirmatory EDS in the SEM indicated the presence of mercury and sulfur.

The painting contains two blue pigments, Prussian blue and smalt. This is a particularly interesting combination, in that smalt is a relatively ancient pigment, whereas Prussian blue was of more recent invention. The two blues have very different microscopical characteristics: Prussian blue consists of very small particles, which are almost invisible unless in aggregates, so PLM, while useful, is not definitive for Prussian blue. However, both infrared and Raman spectroscopy provide excellent, unambiguous spectra for Prussian blue. The Raman spectrum is shown in Figure 9A; compare to Figure 9B, the reference spectrum for Prussian blue. Although this spectrum is noisy, the single peak at 2154 cm$^{-1}$ is unique to Prussian blue.
On the other hand, smalt can be identified by PLM alone. Smalt particles are generally large and glassy; see Figure 10A, a photomicrograph of smalt from the light blue sleeve. Other features of smalt include concoidal fracture and a cherry red tint with the Chelsea filter. For smalt, EDS in the SEM is ideal: in addition to cobalt, generally present in the low amounts shown in Figure 10B, the strong peak for potassium (plus other glass elements) is confirmatory.

Other materials identified in the painting included lead white, the iron earths and an organic red lake, probably rose madder. The canvas is cotton, and the binding medium is a drying oil.

All of the materials identified in the painting materials were available in 18th century Latin America. But a question remained: just how common were the materials in Latin American religious paintings of this period? It turns out that they are all quite common indeed. Two very useful studies were recently published in the Journal of the American Institute for Conservation, one on the use of blue pigments\(^1\), the other dealing with green, yellow and red pigments\(^2\), in South American paintings of the Colonial period. All of the pigments are completely appropriate for South American paintings of the Colonial period.

THE OVERPAINT

By carefully examining the entire painting, we were able to more or less reconstruct what the overpainted painting looked like. As noted above, Figure 7 is a rough guide showing the extent and the colors of the overpaint. The blue sleeve on the subject’s right arm showed excellent layering of three shades of blue. Both the darkest blue and the middle blue turned out to be Prussian blue, while the lightest blue was smalt, which is also the uppermost color. In the shield area, however, the blue in the cracks is Prussian blue, as is the blues in other cracks. The bulk of the blue paint on the painting is Prussian blue, with the topmost and most recent blue is smalt.

The red paints are also very interesting. The topmost red (the present painting) consists of dry-process vermilion, lead white, and a little charcoal black. The red paint in the cracks is the same material. Dry process vermilion is obsolete today.

Thus, there are no significant differences between the paint as presently seen and the paint found in the cracks; on the contrary, the paint in the cracks is visually and chemically consistent with the paint overall. This strongly suggests that the present paint and that in the cracks were both applied within the same workshop, using similar palettes, possibly by the same artist.

SUMMARY

Our visual and chemical analyses permit the following conclusions:

- All of the materials identified in the painting are appropriate to both the region and the historical period.
- The painting had been folded in a once-horizontal and twice-vertical sequence
- The folding resulted in numerous losses along the crack lines
- The painting was overpainted with the same or similar materials as those used for the original painting
- The overpainting was removed
- The painting was restored in recent times (it has an acrylic based varnish)
A POSSIBLE SEQUENCE

We suspect that the sequence of events went something like this:

• The original painting was painted, possibly as a commission (note the shield) or as a stock studio item
• The painting was folded up and stored, possibly having been rejected by the customer
• An attempt to salvage the painting was attempted by overpainting parts of the original image
• That effort was abandoned and the overpaint removed
• All operations took place in a single workshop, possibly by a single artist.

CONCLUSION

We were able to conclude, based on the typicality of the material constituents of the painting, and the lack of evidence to the contrary, that the painting could very well be authentic. The unusual sequence of events as revealed by clues in the cracks, while puzzling, neither confirms nor rejects that conclusion.

REFERENCES


Charles L. Mo, *Splendors of the New World: Spanish Colonial Masterworks from the Viceroyalty of Peru*

Julia P. Herzberg, “Angels with Guns: Image & Interpretation”

Alicia Seldes, Jose E. Burucúa, Gabriela Siracusano, Marta S. Maier, & Gonzalo E. Abad “Blue Pigments in South American Painting (1610–1780)”, *JAIC* (1999)

Alicia Seldes, Jose E. Burucúa, Gabriela Siracusano, Marta S. Maier, & Gonzalo E. Abad “Green, Yellow, and Red Pigments in South American Painting, 1610–1780” (2002)

ENDNOTES

1 Alicia Seldes, Jose E. Burucúa, Gabriela Siracusano, Marta S. Maier, & Gonzalo E. Abad “Blue Pigments in South American Painting (1610–1780)”, JAIC (1999)

2 Alicia Seldes, Jose E. Burucúa, Gabriela Siracusano, Marta S. Maier, & Gonzalo E. Abad “Green, Yellow, and Red Pigments in South American Painting, 1610–1780” (2002)
A NEW METHOD OF “INSERT” OR “CAMI” LINING

Rustin Levenson

In the never-ending quest to avoid lining paintings, and yet still protect and support them, I have devised this system for “Insert” or “Cami” lining. As you see in the photograph, the material (in this case PeCap, but another material can be selected if the conservator wishes) is cut, fitted inside the stretcher members, and held with bass wood strips using copper nails.

Rustin Levenson
Rustin Levenson Art Conservation Associates
New York and Miami

A SEWING SUPPLY CATALOGUE

Randy Ash

There is a terrific sewing supply catalogue I have used for many years. It has small hand tools and a terrific very small tacking iron that is temperature adjustable. Once you get through the needles and threads, there are some very useful items in the catalogue and most reasonably priced.

The catalogue is: Clotilde
P.O. Box 7500
Big Sandy, TX 75755-7500
1-800-772-2891
www.clotilde.com

M. Randall Ash
M. Randall Ash & Associates
Fine Arts Conservation
USE OF COROPLAST TO IMPROVE SKYLIGHTS

Dennis K. Calabi

This tip is regarding the use of Coroplast beneath skylights to diffuse the light, reduce heat loss in winter and heat gain in summer, and eliminate dripping from condensation.

My studio has north facing skylights made from double glazed sliding door panels. While generally providing good light, they create various problems. On cold sunny mornings they have a tendency to drip from condensation. In cold weather heat loss is substantial, and in hot weather, heat gain is even worse, as the sun’s more northerly position allows direct sunlight through the skylights early and late in the day. About 10 years ago, I mounted 1/4" translucent Coroplast (corrugated polypropylene) under the skylights, about 1” below the glass. The diffuse quality of the light was fantastic, heat loss and gain were hugely reduced, and dripping was eliminated. Unfortunately, about 8 years later, the panels started to sag, and then to “rain” flakes of rapidly biodegrading plastic. I removed the flaking plastic and discovered some mold, indicating that condensation was still occurring under the glass. Plan B was to protect new Coroplast from UV rays (it seems to hold up well if not exposed to direct sunlight) and to mount 6” from the glass to provide more insulating air. Although thinking of varnishing the Coroplast with Golden MSA-UVLS, Chris Stavroudis suggested using the UV protective film commonly used on windows as a more effective approach. Rather than attaching the film to the glass or plastic, I simply laid the film, still on its mylar backing, over the plastic before mounting. I taped the edges to seal them off, and mounted the plastic in such a way as to prevent any airflow. Hopefully, this will prevent or minimize the condensation. The new UV protected installation has been up for a year and should last far longer than the original setup.

Dennis K. Calabi
Conservator in Private Practice
Sebastopol, California