

Pollock's Paradigm J3 Oil on Paper: 26 x 40 in.



Pollock's Paradigm J3

Photo: M. Vetter / J3 © 2017 / Photo: M. Vetter
Oil on paper / Size 26 x 40 in. (66.0 x 101.6 cm.)

Fractal analysis completed by Professor Richard Taylor, University of Oregon

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SCIENTIFIC EXAMINATION REPORT

Subject: Painting J3
Our ref.: AAR-MP-002/A.J3
Date: 29th March 2010



1. Introduction

This report contains summary information on the analysis of Chrysalis Collection painting **J3**, a work measuring 1013 mm by 657 mm (above right) executed on paper. It was previously examined by Peter Paul Biro (PPB) on the 22nd August 2007, at which time he removed a series of six paint fragments. The paint samples were subsequently transferred directly into the hands of Dr. Nicholas Eastaugh (NE), who has maintained holding since.

This report will focus on the results of analysis of this sample set. Details of the analytical techniques applied (including the protocols employed) are presented in a separate document, these being relevant to the group of paintings as a whole. However, in brief, the techniques concerned from which the results discussed here arise were:

- Polarised light microscopy ('PLM');
- Scanning electron microscopy-energy dispersive X-ray spectrometry ('SEM-EDX');
- Raman microscopy ('Raman');
- Fourier transform infrared spectroscopy ('FTIR').

All are standard approaches in the study of historical paint materials. In the main these techniques reveal data relating to the pigments present. Additionally however some information on binding media can be derived from the FTIR data, such as the presence of nitrocellulose lacquers and alterations resulting from certain pigment-medium interactions, as well as providing a tentative initial view on the presence of oils and other synthetic compounds. Further analysis is pending using gas chromatography-mass spectrometry ('GC-MS') and pyrolysis-GC-MS ('Py-GC-MS') to fully resolve the nature of the binding media. Additionally, studies by FTIR imaging have not yet been conducted.

Specific results from the various analyses are tabulated below (**Appendix I**) and representative spectra from EDX, Raman and FTIR attached (**Appendix II**). The principal compounds identified will be discussed below and the immediate implications outlined. A more detailed discussion of each compound in the context of the Chrysalis Collection as a whole will be presented in a separate overview document. For example, brief indications of relevant dates associated with pigments such as known patent dates will be given here, but the overview will discuss the specific patterns of historical use in greater detail. Similarly, where there are points of correlation with previously

analysed Jackson Pollock material of good standing such as the Pollock-Krasner Studio ('PKS') paint cans¹, this will be mentioned here but discussed in greater depth elsewhere.

2. Condition

The painting was additionally examined by PPB and NE in Tahoe, 30th January - 1st February 2010, during which time the work was de-framed for closer measurement and observation. Further notes were made on the condition, from which it was found that the paint is especially fragile with localised losses and delamination.

3. Analytical results

The following pigment types were identified in the samples –

Aluminium metal flake: The metallic silver paints on this painting were found to contain an aluminium metal flake type pigment. This was readily identifiable from the EDX analysis and the particle morphology by PLM. Aluminium powder has been used as a metallic flake pigment, produced by stamping sheet aluminium. According to Gettens and Stout (1966), although aluminium powder was probably available from the mid-nineteenth century, it was not until after the introduction of the Hall process for aluminium production in 1886 that these became readily available. Moreover, Edwards (1927) indicates that aluminium powder as a commercial paint was not widely used until after 1920. An aluminium flake pigment was found by the present author in one of the PKS paint cans, that labelled “Metaleaf/Aluminium Paint/Ready Mixed” from the Pittsburgh company.

Calcite: The calcite was identified by the presence of calcium in the EDX data, occasional detection of characteristic peaks in the Raman spectra and the particle morphology by PLM. This pigment is present as small angular fragments consistent with a very fine to medium ground limestone or similar source. Calcite is of ancient and continued use. Calcite was found in the PKS paint cans, in one instance associated with the unusual mineral Edenite, which was detected there by X-ray diffraction and thus unlikely to show in the present analyses.

Clay minerals: A number of samples show consistent levels of either magnesium, aluminium and silicon, or aluminium and silicon alone, by EDX. Detailed morphological study by SEM of the aluminosilicate types further suggested the presence of some of the characteristic flat plate-like particles associated with kaolinite, while those bearing all three elements exhibited particle morphologies consistent with palygorskite (sometimes known as 'attapulgitite' or 'Fuller's earth'). In modern pigmentary grades of kaolinite particle sizes are of perhaps only 0.5µm, which would be consistent with the particle morphologies observed by PLM (essentially, extremely small particles difficult to resolve fully by optical means). Kaolinite has a long history of use.² With the palygorskite the particle size appears somewhat larger, although these are probably aggregates.

¹ Eastaugh, N.; Gorsia, B. “What It Says on the Tin: A Preliminary Study of the Set of Paint Cans and the Floor in the Pollock-Krasner Studio” In catalogue: Landau, E. and Cernuschi, C. *Pollock Matters* McMullen Museum of Art, Boston (2007) 145-156.

Palygorskite has a similarly lengthy history of use.

Lead chromate: Detection of lead and chromium by EDX in yellow to red and green pigments typically indicates the presence of a lead chromate type pigment, with confirmation by techniques such as Raman and PLM. Here, lead chromate was found as a major component of sample [6]. Lead chromate was found in the PKS paint cans.

Phthalocyanine compounds: The presence of phthalocyanine compounds was noted primarily by Raman. However, this was further confirmed by PLM with transmission microspectrophotometry, this hybrid technique being sensitive to detecting these pigments and differentiating them in low, dispersed, amounts because of the high spatial resolutions possible. Raman analysis further suggested the presence of the green form only. Phthalocyanine compounds were first significantly studied as pigments in 1929, with various blue and green forms being developed in the first half of the 1930s. They have continued in general use since that time. Phthalocyanines were observed in the PKS paint cans.

Titanium dioxide white: Detection of titanium by EDX, particle morphology by PLM and identification of Raman bands for rutile confirmed the presence of a rutile-type titanium dioxide pigment. However, although Ti was found in many of the samples, detection of associated Raman bands was not universal across the material. Titanium dioxide whites were first developed as commercial products in the earlier twentieth century and their technical superiority over other types of white hiding pigment were such that by the time of Jackson Pollock's later activity they were coming to dominate this sector of the paint market. A rutile type titanium dioxide pigment was found for example in the PKS paint cans.

The black pigment in sample [4] was provisionally identified as a carbon-based black, although the PLM sample contained relatively little black pigment.

Provisional identification of binding media was accomplished from examination of FTIR spectra of the samples, but is subject to review when analysis is complete by GC-MS and Py-GC-MS. However, this indicated that there are likely to be at least three categories of binding media present: drying oil(s), alkyd resin(s) and nitrocellulose. The last of these is usually confirmed by FTIR analysis specifically as it is not amenable to the GC-MS/Py-GC-MS protocols employed.

No materials precluding an origin for J3 prior to Jackson Pollock's death in 1956 have been found to this point of the material analysis.



Dr. Nicholas Eastaugh

2 Brooks, L.E.; Morris, H.H. "Aluminium Silicate. Kaolin". In book: Patton, T.C. (ed.), *Pigment Handbook. Volume I. Properties and Economics*, John Wiley & Sons, New York (1973) 199-216.

Appendix I. Summary of data.

Table 1a. Summary of results - Pigments

		Colour	SEM/EDAX (elements)		Raman Microscopy (peaks, cm ⁻¹)	Identification
			Major	Minor		
1	1	Silver	Al, Ca	Si, Ti	1778 (vw)	Aluminium metal flake; Calcite
2	2	White	Ti	Al, Si, S	1778 (vw), 1205 (vw), 1045 (vw), 612 (s), 446 (s), 238 (w), 144 (vw)	Titanium dioxide, rutile type [P0118] Kaolinite
3	3	Red	Si, Ca	Na, Al, S, Cl, K, Ti	1776 (vw), 1203 (vw), 1089 (vw), 968 (vw), 422 (vw)	Calcium carbonate Kaolinite
4	4	Black	Si, Ca	Mg, Al, Ti	1778 (vw), 424 (vw)	Carbon-based black Calcite; Palygorskite; titanium dioxide white
5	5	Pale green	Ti	Mg, Al, Si, S, Cl, Ca	1778 (vw), 1536 (s), 1444 (vw), 1337 (w), 1279 (w), 1213 (w), 1080 (vw), 978 (vw), 816 (vw), 772 (w), 739 (w), 706 (vw), 686 (w), 612 (vw), 442 (w), 423 (vw), 347 (vw), 291 (vw), 263 (vw), 146 (vw)	Phthalocyanine green [P0035] Titanium dioxide, rutile type [P0118] Palygorskite
6	6	Yellow	Al, Pb	Si, S, Ti, Cr, Fe	1778 (vw), 1205 (vw), 844 (w), 403 (vw), 378 (vw), 360 (w), 340 (vw), 327 (vw), 139 (vw)	Lead chromate [P0898] Kaolinite

Notes:

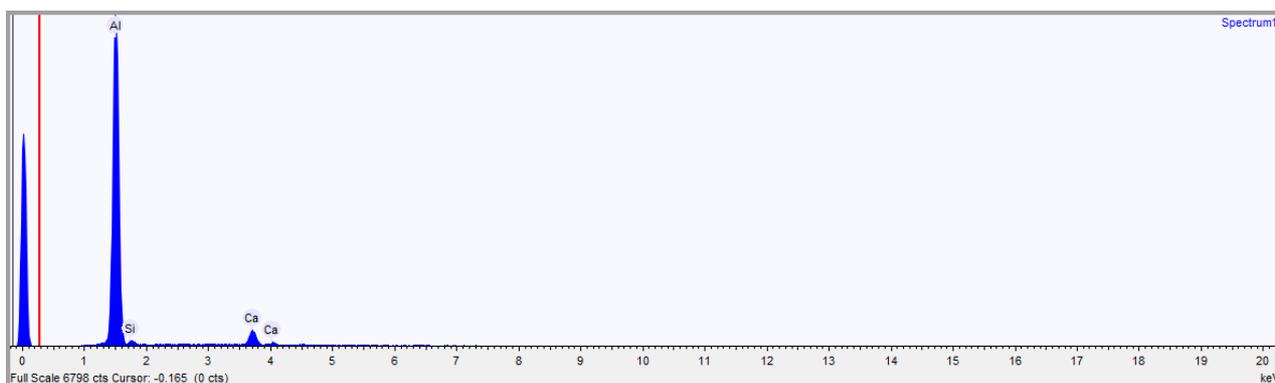
- 1) Identification incorporates information derived from PLM and UV-visible-NIR microspectrophotometry analysis not otherwise detailed in this table.
- 2) Numbers [Pnnnn] are matching reference samples from the collection of the Pigmentum Project, University of Oxford (<http://pigmentum.org/collection>).
- 3) Raman reference data was derived from primary pigment reference samples of good provenance and identity held by the Pigmentum Project and analysed on the same instrument used for the analysis of the paint samples of this report and Raman data published by Burgio and Clark (Burgio, L.; Clark, R.J.H. "Library of FT-Raman spectra of pigments, mineral, pigment media and varnishes, and supplement to existing library of Raman spectra of pigments with visible excitation" *Spectrochimica Acta Part A* 57 (2001) 1491-1521).
- 4) Raman data (and FTIR in the following table) is given as peak position in wavenumbers (cm⁻¹) with colour coding showing identification. Codes: (vw) = very weak; (w) = weak; (m) = medium; (s) = strong; (vs) = very strong; (sh) = shoulder.

Table 1b. Summary of results – Binding media

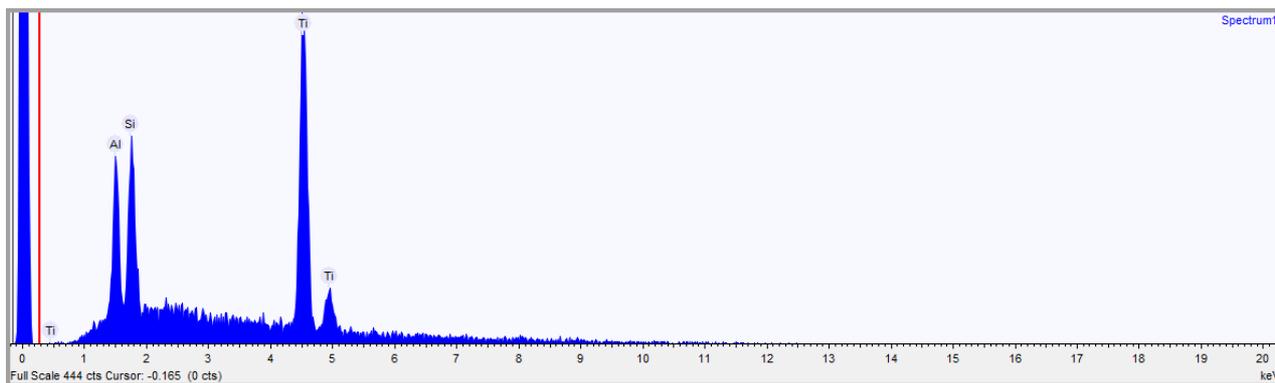
		Colour	FTIR (peaks, cm ⁻¹)	Preliminary identification
1	1	Silver	2926 (vw), 2858 (vw), 1722 (w), 1649 (vw), 1405 (w), 1258 (w), 1111 (vw), 1066 (vw), 1032 (vw), 1004 (vw), 948 (vw), 919 (vw), 880 (w), 840 (vw), 794 (vw), 772 (vw), 750 (w), 671 (w), 529 (w)	
2	2	White	3693 (w), 3675 (vw), 3647 (vw), 3620 (vw), 3450 (vw), 3336 (w), 2924 (s), 2853 (w), 1721 (vs), 1657 (vw), 1600 (vw), 1577 (vw), 1538 (vw), 1489 (vw), 1457 (vw), 1418 (vw), 1388 (vw), 1258 (vs), 1177 (vw), 1118 (w), 1069 (w), 1030 (s), 1004 (s), 942 (vw), 916 (w), 838 (vw), 740 (w), 600 (sh), 529 (w), 464 (w)	
3	3	Red	3695 (vw), 3655 (vw), 3621 (vw), 3446 (w), 3333 (w), 2926 (s), 2853 (s), 1728 (vs), 1654 (s), 1598 (vw), 1581 (vw), 1535 (vw), 1456 (s), 1417 (vw), 1388 (w), 1275 (vs), 1168 (vw), 1123 (s), 1066 (s), 1038 (w), 1004 (s) , 914 (vw), 874 (w), 840 (s) , 772 (vw), 750 (s), 710 (w) , 654 (vw), 535 (w), 461 (w)	Oil-modified alkyd resin Nitrocellulose
4	4	Black	3695 (vw), 3678 (vw), 3441 (vw), 2920 (s), 2853 (s), 1728 (vs), 1660 (vw), 1603 (vw), 1581 (vw), 1456 (w), 1377 (vw), 1258 (vs), 1168 (vw), 1117 (w), 1066 (w), 1015 (w), 987 (vw), 948 (s), 795 (sh), 744 (s), 704 (vw), 688 (vw), 671 (vw), 603 (w), 507 (w), 439 (s)	
5	5	Pale green	3695 (w), 3655 (vw), 3621 (vw), 3327 (w), 2920 (s), 2858 (s), 1728 (vs), 1649 (vw), 1603 (vw), 1581 (vw), 1543 (vw), 1457 (w), 1419 (vw), 1385 (vw), 1276 (sh), 1262 (s), 1171 (vw), 1119 (w), 1071 (sh), 1033 (s), 1009 (vs), 937 (vw), 914 (s), 842 (vw), 742 (s), 604 (sh), 518 (w), 461 (vw)	
6	6	Yellow	3457 (w), 2926 (s), 2853 (s), 1722 (vs), 1660 (w), 1603 (vw), 1581 (vw), 1496 (vw), 1451 (w), 1377 (w), 1258 (vs), 1168 (vw), 1117 (s), 1066 (s), 1044 (s), 981 (sh), 846 (s) , 795 (vw), 778 (vw), 744 (s), 704 (w) , 654 (vw), 631 (vw), 563 (sh), 478 (vw)	Alkyd resin Nitrocellulose

Appendix II. Exemplar spectra.

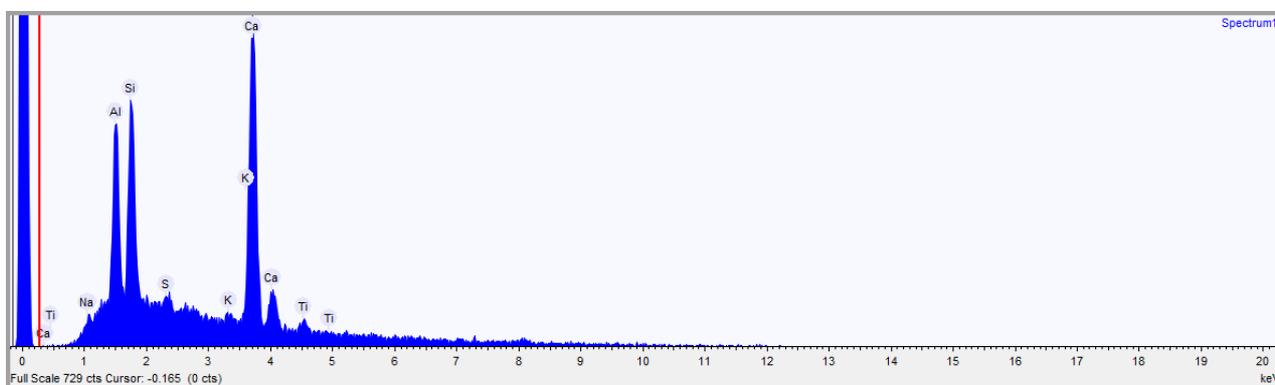
EDX



Sample 1



Sample 2

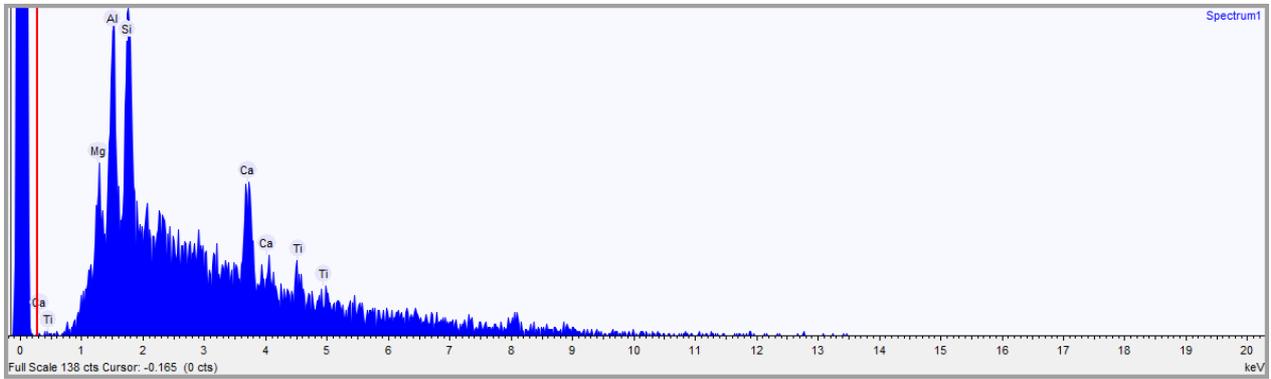


Sample 3

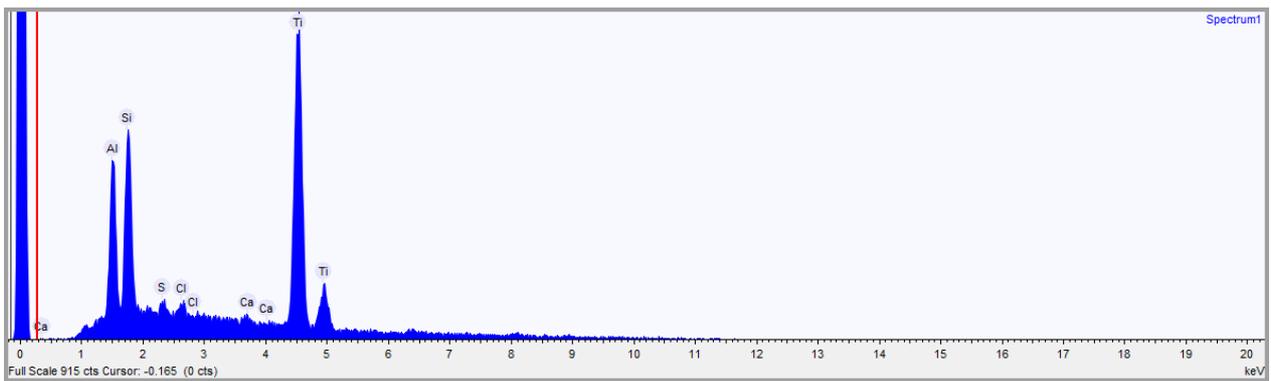


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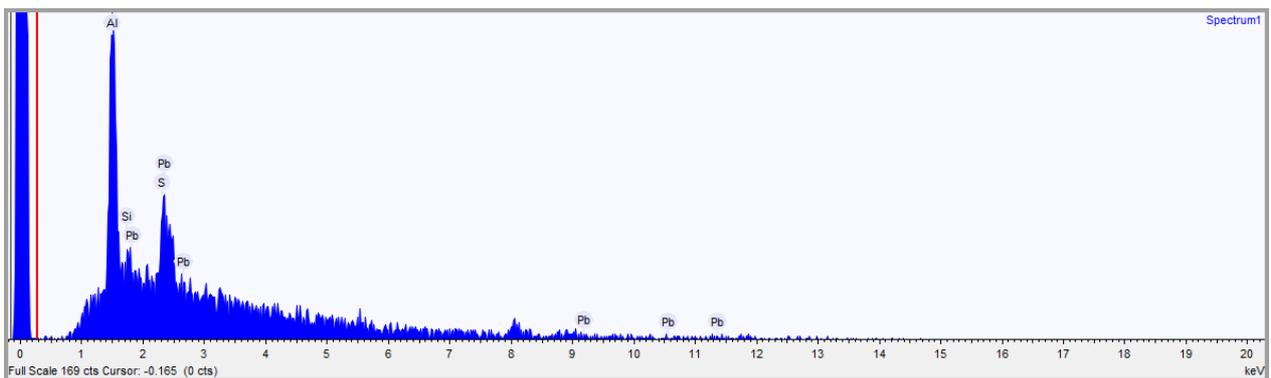
EDX



Sample 4



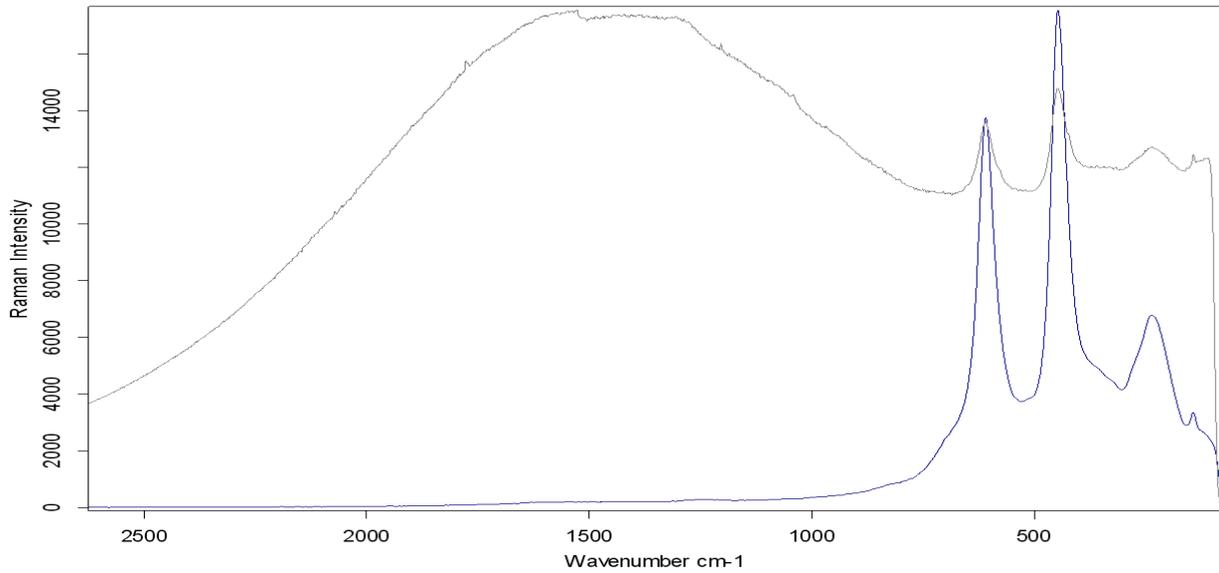
Sample 5



Sample 6

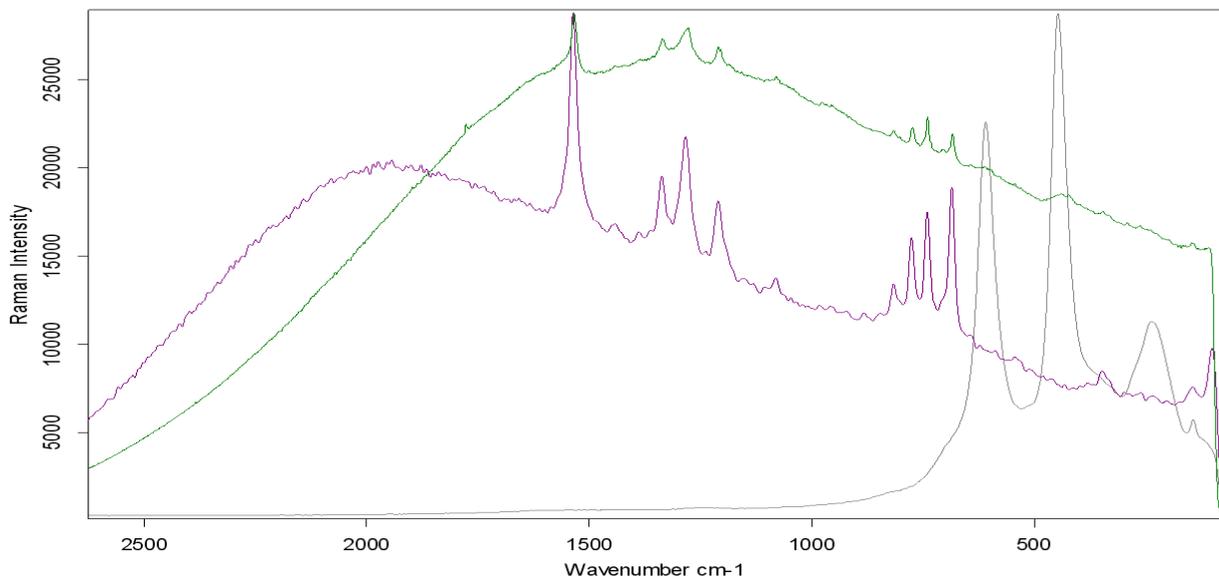
Raman (Comparison spectral overlays as labelled)

Raman (Comparison spectral overlays as labelled)



C:\Raman Data\Jobs\VAAR-MP-002\J-3\J-3.02 white.0	J-3.02 white	microscope, 785 nm, 25 mW	13/01/2010
C:\Raman Data\ReferenceMaterial\PigmentumCollection\P0118.1	P0118	microscope, 785 nm, 25 mW	05/10/2009

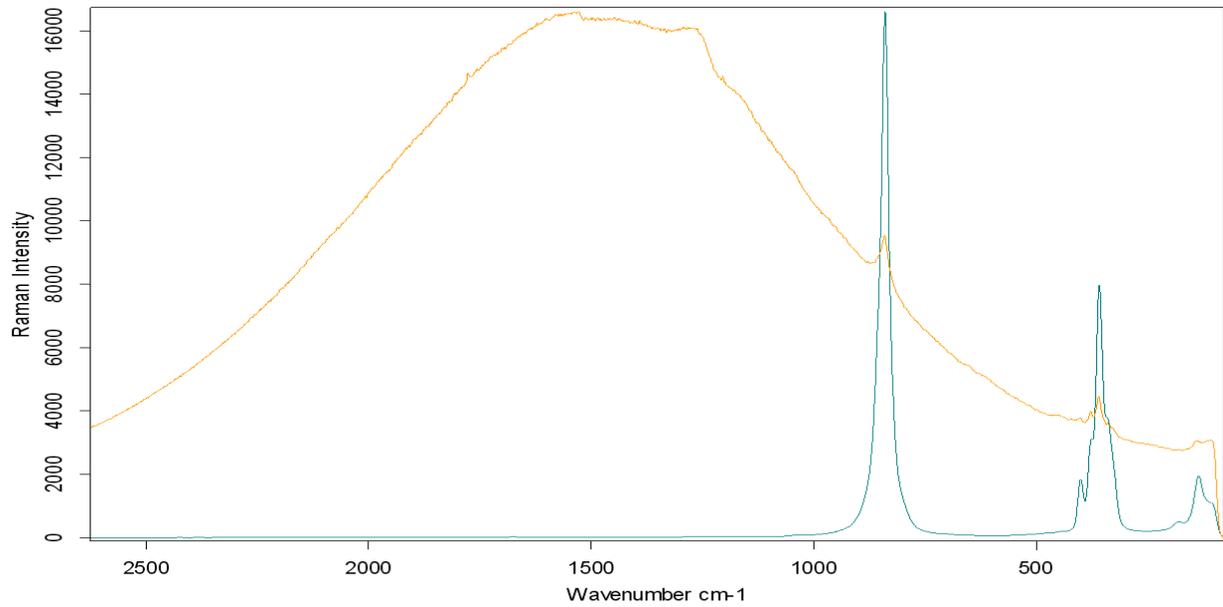
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C:\Raman Data\Jobs\VAAR-MP-002\J-3\J-3.05 pale green.0	J-3.05 pale green	microscope, 785 nm, 25 mW	13/01/2010
C:\Raman Data\ReferenceMaterial\PigmentumCollection\P0035.1	P0035	microscope, 785 nm, 25 mW	28/09/2009
C:\Raman Data\ReferenceMaterial\PigmentumCollection\P0118.1	P0118	microscope, 785 nm, 25 mW	05/10/2009

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Raman (Comparison spectral overlays as labelled)

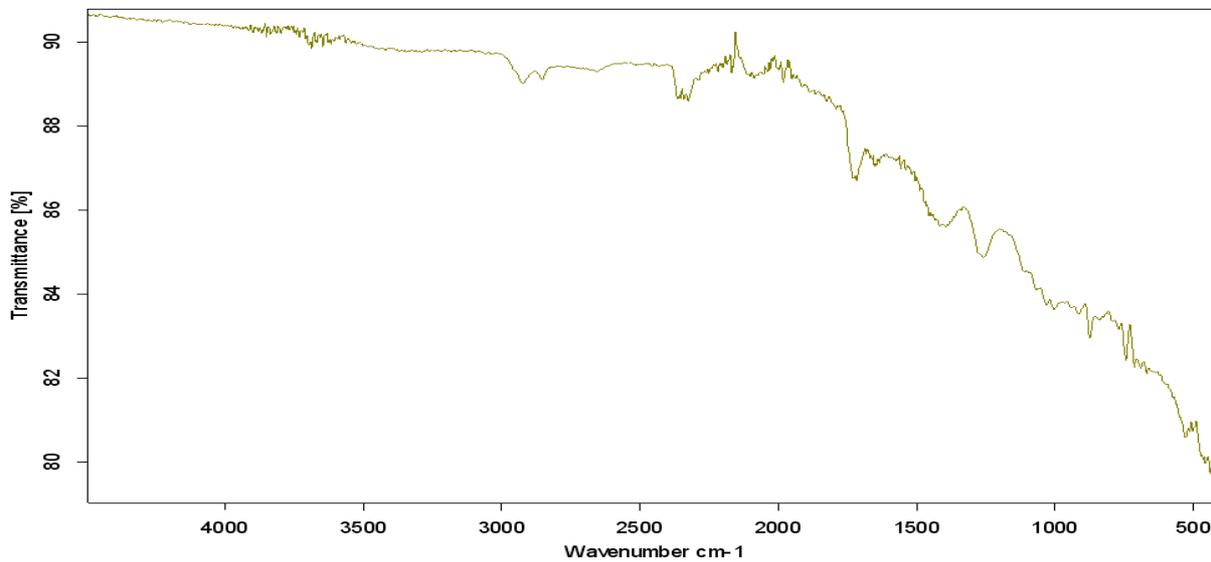


C:\Raman Data\Jobs\AAR-MP-002\J-3\J-3.06 yellow.0	J-3.06 yellow	microscope, 785 nm, 25 mW	13/01/2010
C:\Raman Data\ReferenceMaterial\PigmentumCollection\P0898.0	P0898	microscope, 785 nm, 10 mW	03/11/2009



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FTIR



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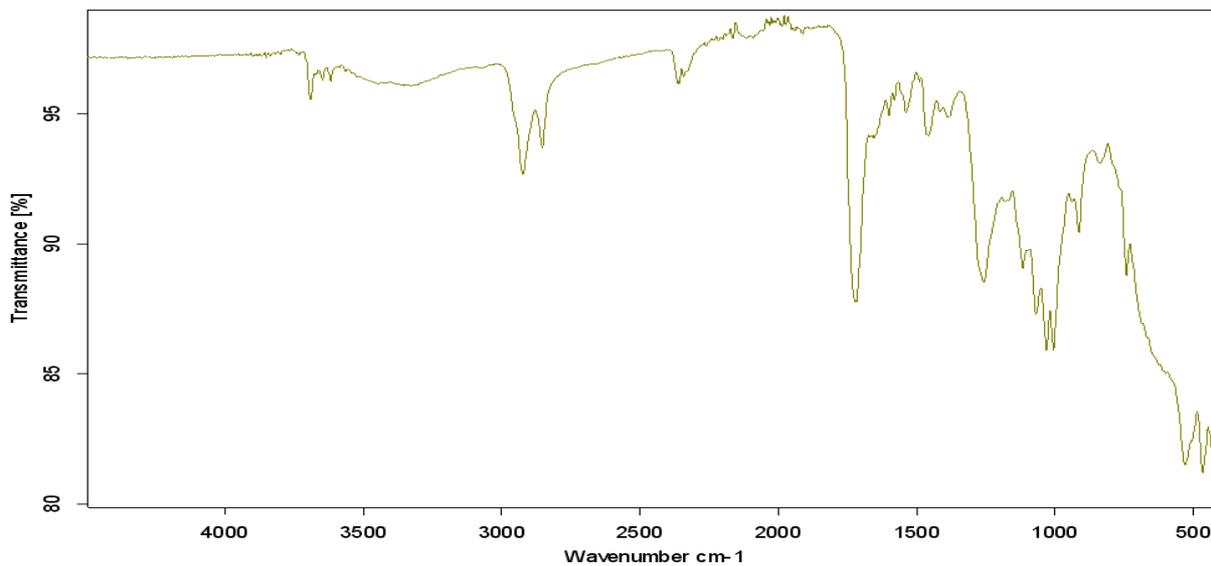
J-3.01

Instrument type and / or accessory

14/12/2009

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Sample 1



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J-3.02

Instrument type and / or accessory

14/12/2009

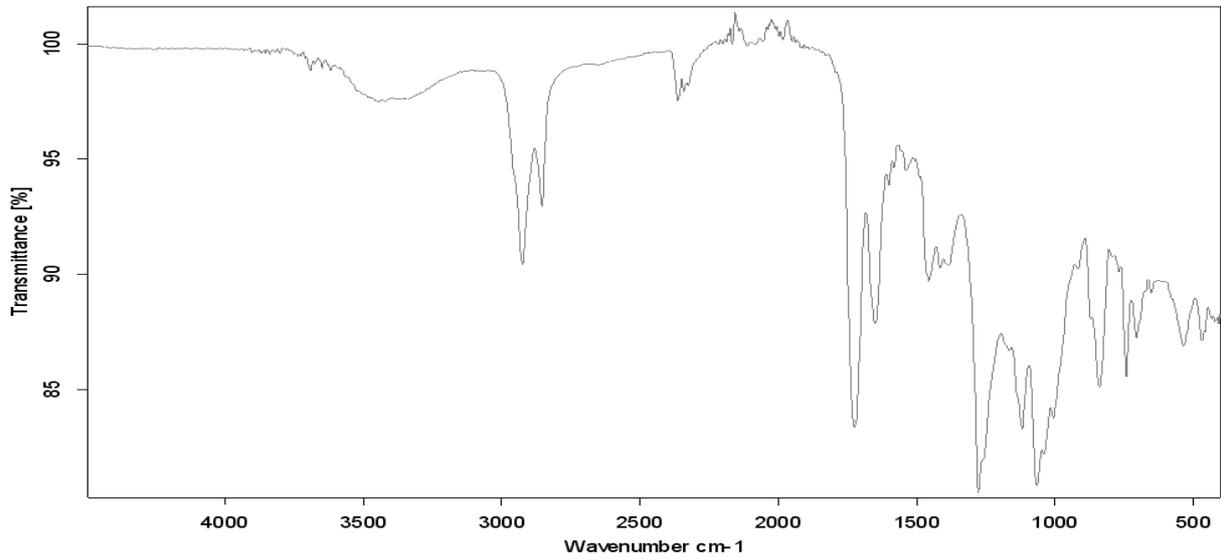
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Sample 2



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FTIR



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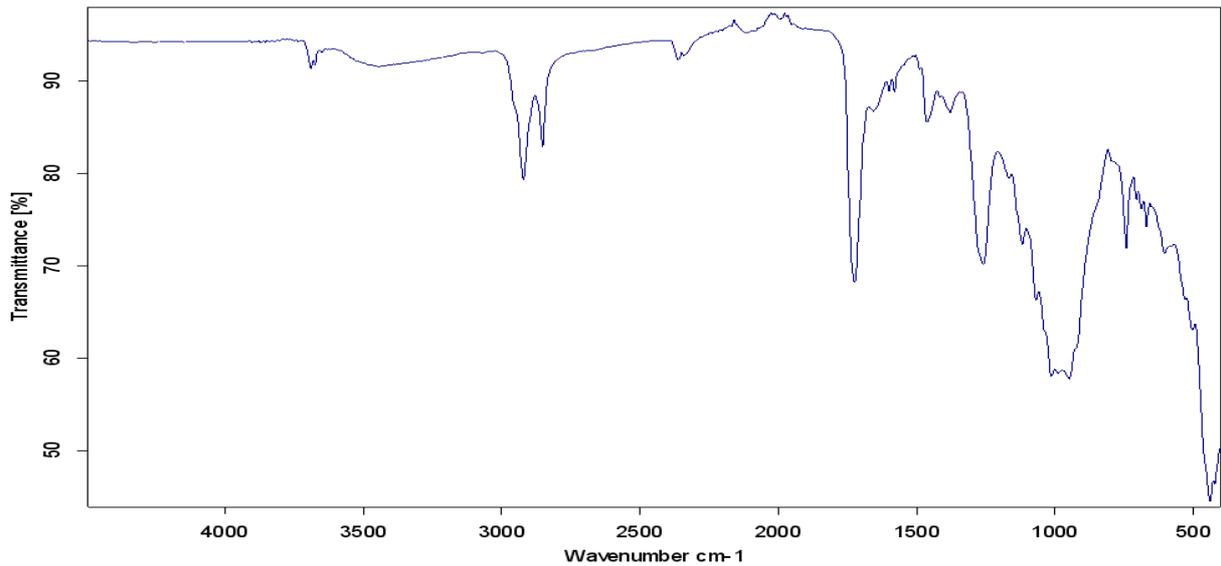
J-3.03

Instrument type and / or accessory

14/12/2009

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Sample 3



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J-3.04

Instrument type and / or accessory

14/12/2009

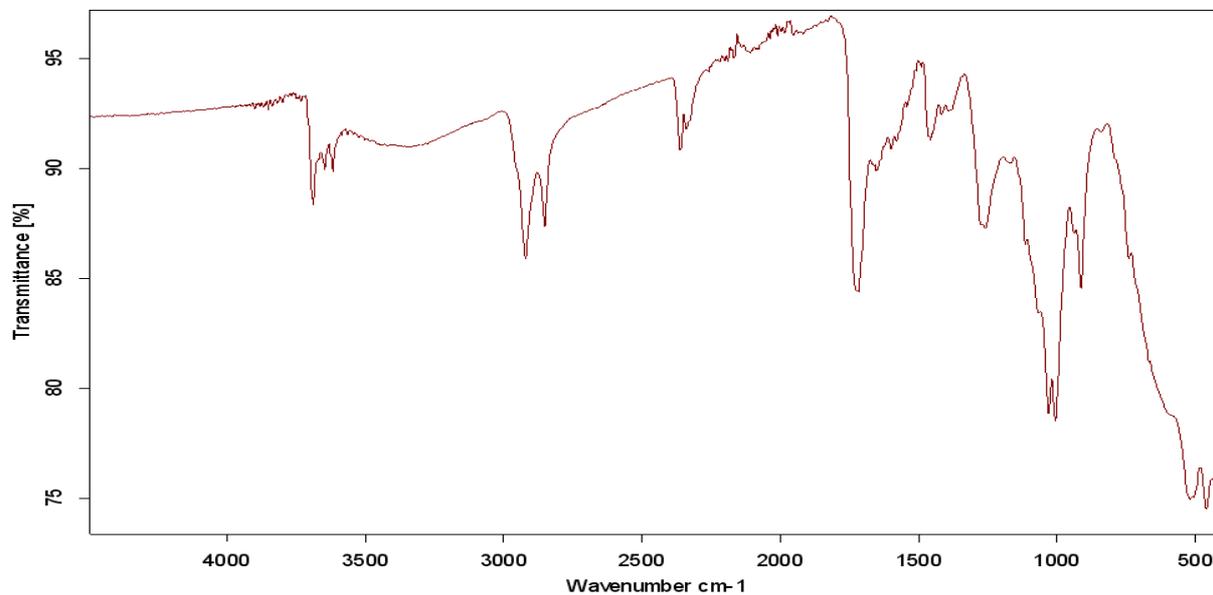
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Sample 4



Art Access & Research

FTIR



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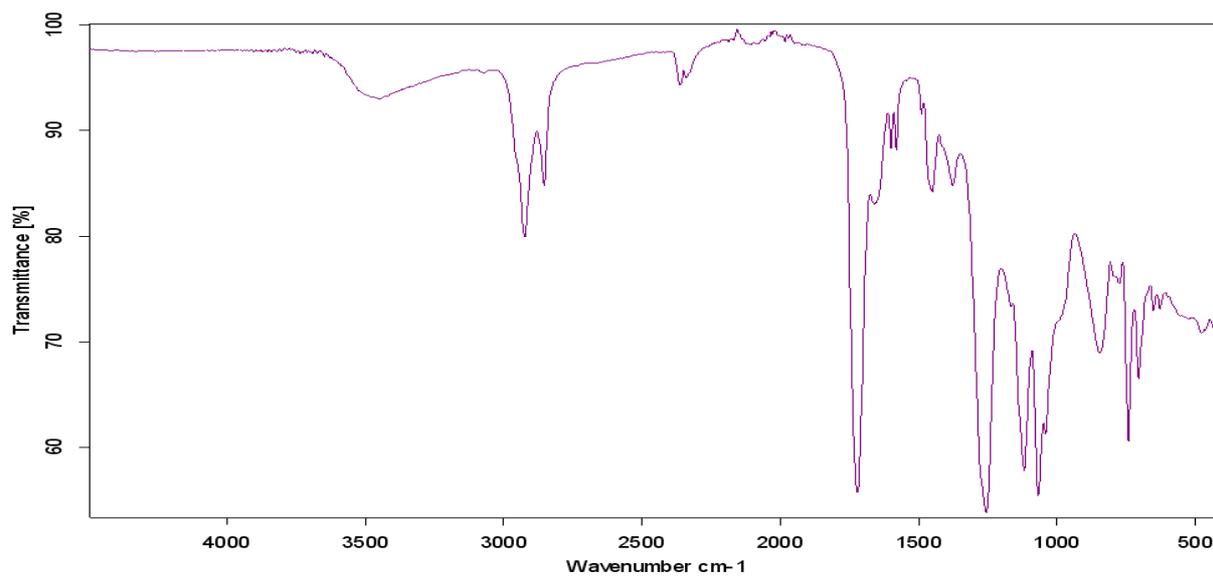
J-3.05

Instrument type and / or accessory

14/12/2009

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Sample 5



C:\Program Files\OPUS_65\MEAS\Jobs\VAAR-MP-002U-3U-3.06

J-3.06

Instrument type and / or accessory

14/12/2009

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Sample 6

Fractal Analysis of the Painting “J3”

Analysis performed by Fractals Research LLC

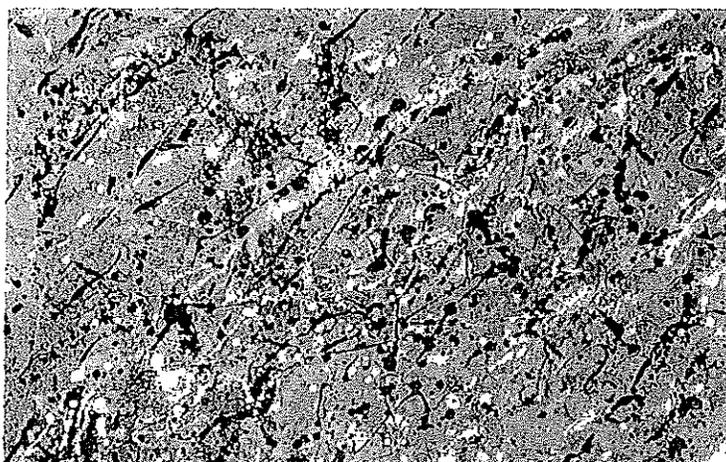
Working title: J3

Submitted by Gleeson

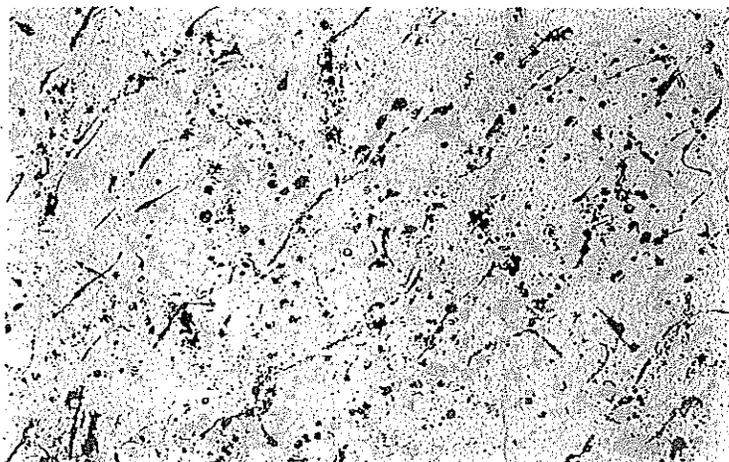
Size of Canvas: 98.8 x 63.8 (cm)

Size of analyzed image: 98.8 x 63.8 (cm)

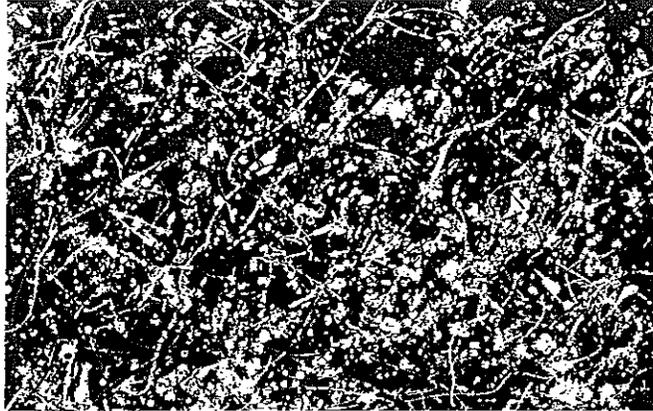
Medium: “paint on paper”



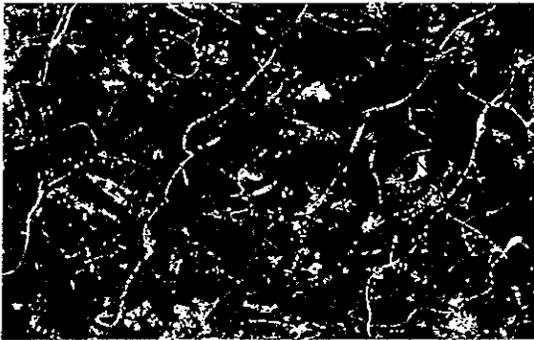
Original image



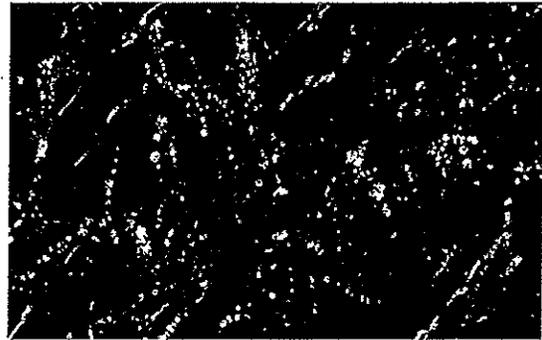
Composite of patterns sent through the fractal analysis



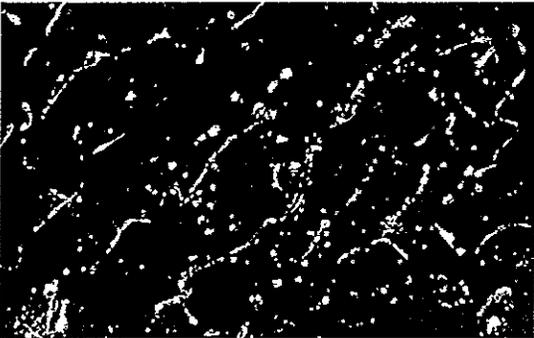
Composite of patterns sent through the fractal analysis



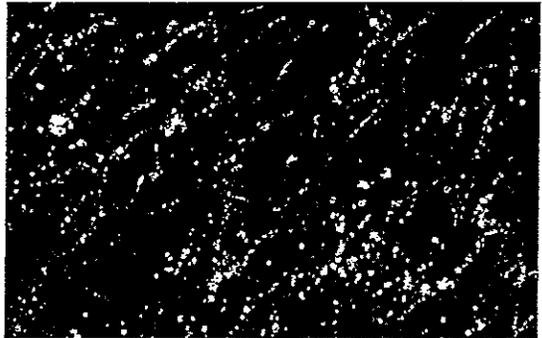
Yellow Layer



Black layer



Red layer



Blue layer

Table of Results

The table summarizes the results of applying a box-counting technique to investigate the scaling properties of the submitted painting. The parameters result from a "Dimensional Interplay Analysis" of the scaling plots for each of the colored layers. This analysis is based on the hypothesis that poured paintings are generated by two physical processes - the "drip" process (dominating small size scale patterns) and the "motion" process (dominating large size scale patterns). L_T is the crossover length scale for the two processes. The visual complexities of the two patterns are quantified by their effective dimensions D_D and D_L (corresponding to the gradients of the scaling plot over their respective length scales). This interplay between the two processes and their associated effective dimensions is quantified by the parameter sd .

J3	 yellow	 black	 silver	 red	 blue	 white
Layer Number	1	2	3	4	5	6
Coverage Density (%)	10.9	5.7	-	6.7	6.2	-
Free or Forced	free	free	-	free	free	-
L_T (cm)	1.5	2.0	-	7.0	2.2	-
D_D	1.40	1.23	-	1.33	1.25	-
D_L	1.80	1.77	-	1.01†	1.76	-
sd	0.024	0.024	-	0.037	0.027	-

Comments

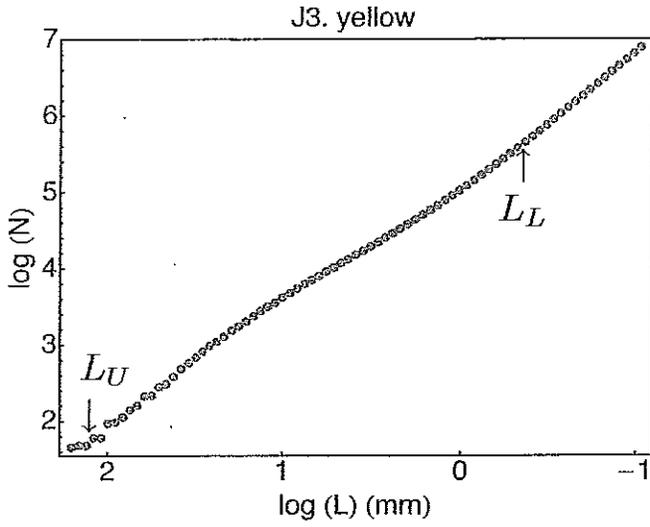
† The accuracy of this value, and its associated physical meaning, are compromised by the limited number of data points used in the fitting procedure.

The layer number is assigned according to the predominant sequence by which the levels were deposited during the painting process.

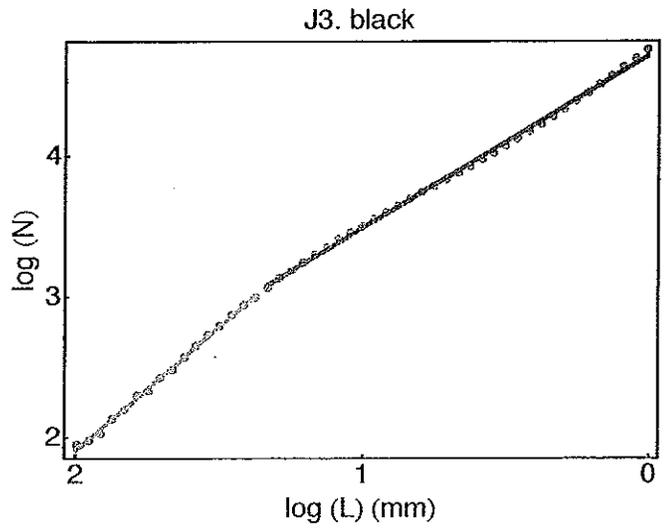
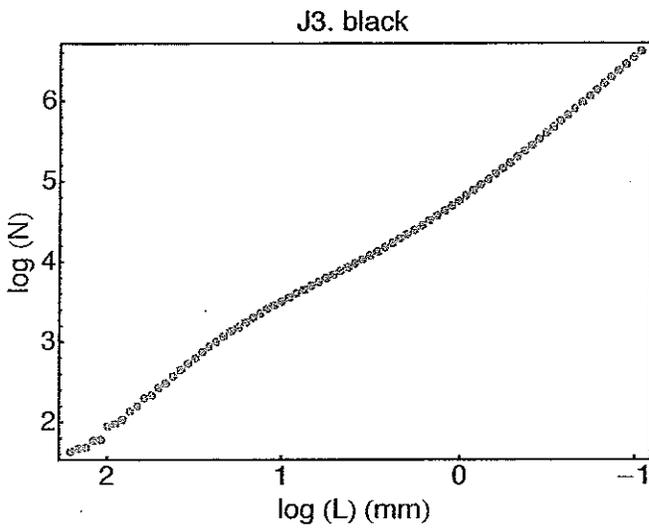
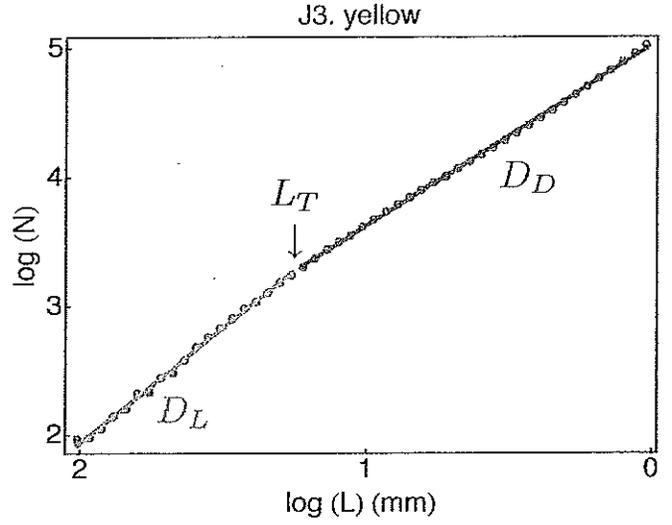
Layers 3 and 6 cannot be separated to the accuracy required for the fractal analysis.

The Scaling Analysis is valid between the upper and lower size limits shown in the graphs that follow. The lower size limit ($L_L = 0.05$ cm) corresponds to the size of a box that contains 25 pixels. The upper size limit ($L_U = 12.02$ cm) corresponds to the size of a box at which the image is covered by no less than 50 boxes. The Dimensional Interplay Analysis is performed across the standardized length scales of 1mm to 10cm.

Scaling Analysis

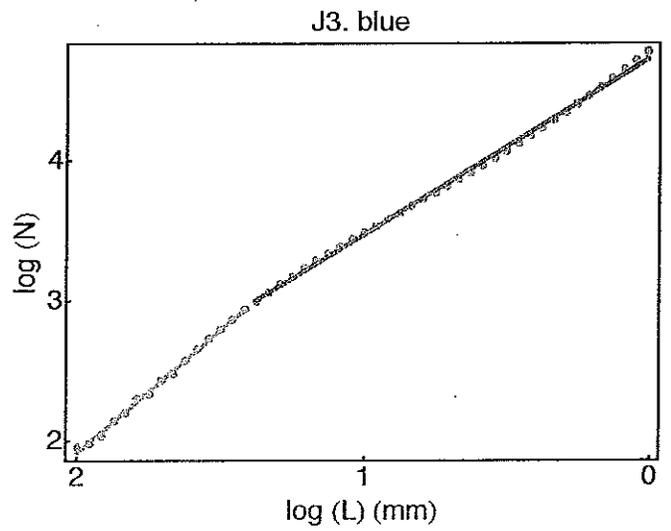
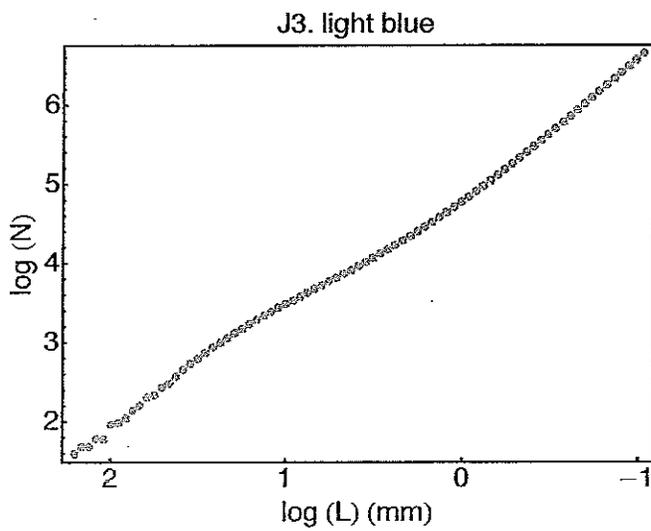
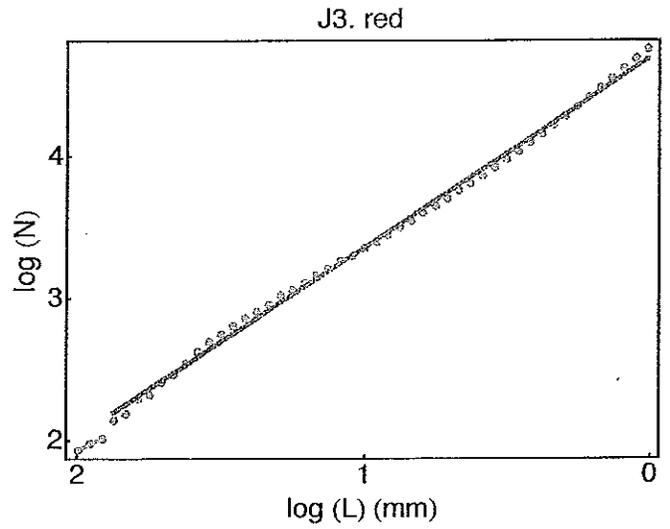
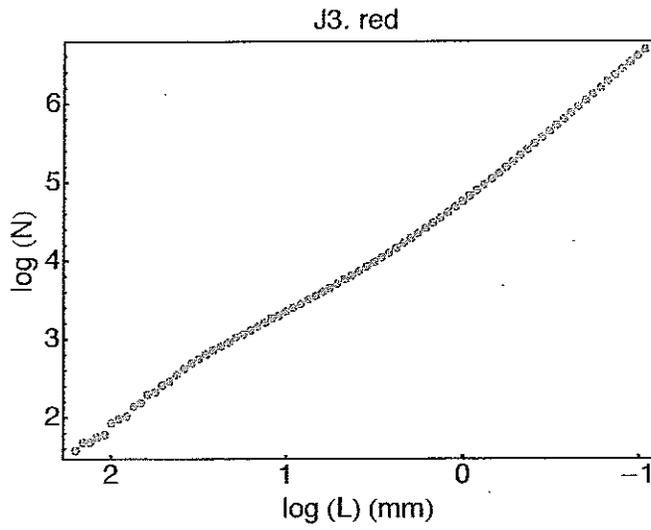


Dimensional Interplay Analysis



Scaling Analysis

Dimensional Interplay Analysis



Generally Applicable Relevant Research and Information



Scientific and forensic studies on the Chrysalis Collection

A report on the current status and remaining research

1. Introduction

This status report is designed to be a concise overview of the scientific and forensic work that has been carried out to date on the paintings forming the Chrysalis Collection¹. It also presents areas where research remains to be done and outlines what paths might be taken and some arguments for why. There is also an intention to take a holistic view, weighing the merits of the various scientific approaches as well as considering what other aspects, such as additional documentary evidence, could be beneficial to the overall project.

So far the scientific and forensic studies have consisted of fractal analysis, fingerprint examination and paint analysis, plus some examination of DNA material recovered from the paintings. Of these the first three have provided substantive positive outcomes while the latter has given some initial, if inconclusive, results, though without any contra-indicators regarding authorship. The fractal analysis has been applied to a number of the paintings with some of these giving values closely comparable to accepted Pollock works. A fingerprint survey has been made on about 23 of the works, with 8 paintings revealing 11 prints, of which several have been found to provide matches to reference prints for Jackson Pollock. Samples of paint taken from 16 of the paintings have been analysed in detail, with no date contra-indicators for Pollock's lifetime, apart from a couple of issues to be discussed below. Mitochondrial DNA (mtDNA) has been analysed from 10 hairs recovered from 27 paintings; it has been possible to show from this that mtDNA can sometimes be successfully recovered from such material, and that a mixture of human and cat hairs are present.

2. Fractal analysis

To qualify as a fractal in the present context a pattern must have three distinct features: first, it must have progressively finer detail; second, it must have 'self-similarity', the property of showing similar features at ever increasing magnifications; third it should be 'non-Euclidean', which means that it has a geometrical dimension greater than 1 (such as a straight line has) and less than 2 (a flat surface). Fractal dimension then indicates the complexity of the pattern, curves of varying convolution lying between these two extremes. Richard Taylor and colleagues have proposed that paint in Pollock's works exhibits such a fractal quality and that, moreover, a specific fractal dimension is characteristic for the artist; latterly they have extended this claim to there being a 'double-fractal' pattern, corresponding to Pollock's broad gestural way of working combined with small-scale behaviour of the paint itself.² However, this has not been without contention,

¹ For present purposes we may define the Chrysalis Collection as a large group (>50) of apparently related, but previously unknown, works plausibly associated with Jackson Pollock's dripped and poured paintings of the late 1940s and 1950s.

² Taylor, R.P., Micolich, A.P. And Jonas, D. "Fractal Analysis of Pollock's Drip Paintings" *Nature* **399** (June 1999) 422 and various subsequent papers.

particularly in respect of the need to measure (double-)fractal dimension across a sufficiently wide range of scale, which can be problematic with smaller works, and the possible rate of false positives.³ None-the-less there has been recent support for Taylor's basic contention, and the general validity of the mathematical approach, largely through image analysis and pattern classification extensions to his fractal 'box-counting' technique.⁴ In consequence we can say that fractal analysis undoubtedly has a continuing place in Pollock authentication studies, but that it will remain to an extent controversial for some time. In the context of the Chrysalis Collection it may therefore be advisable to extend the work that has been done to date by finding independent confirmation from another fractal group applying non-identical or enhanced methodologies.

3. Fingerprint examination

The use of fingerprints to identify a specific individual has a history well in excess of 100 years and the uniqueness of fingerprints is a fully accepted principle in fingerprint identification, one that has withstood extensive scientific and legal testing. Fingerprint examiners recognise a range of types of prints, including so-called 'latent' prints, where a mark is left on a surface from skin secretions, and 'impressed' prints, where a ridge pattern is left in a soft surface. Identification of fingerprints in paintings only considers prints that have been made in wet or soft paint as a plastic impression which has subsequently dried; only in this way there is a reasonable chance of the print having been left by the artist. Through comparison to a sufficiently large base of strongly documented reference material, which might be prints clearly embedded in original paint on fully accepted works or from an object closely associated with the artist, it is possible to claim matches. Although there may be contention over whether a certain number of comparison points are needed, the method used in this work employed the so-called 'holistic criterion' where a combined assessment of quantitative and qualitative aspects of the prints leads to a determination; this methodology is very widely used and accepted in major jurisdictions around the world, forming a robust basis for the judgements reached. Other protocols, such as a second opinion by an experienced fingerprint examiner, were also employed in the study to make the conclusions as secure as reasonably possible. Therefore the findings reported are robust, albeit within certain constraints. However, while a number of prints have been collected and some matches made, not every painting bears a print and not every print can at present be matched to an available reference specimen. Consequently some form of leverage is required to establish whether we can both reasonably show that other works in the Chrysalis Collection without fingerprints are from the same hand, and find further reference examples to help match currently unidentifiable prints. A complete survey of all paintings in the Chrysalis Collection is also, of course, highly desirable.

³ The main substantive criticism has come from the work of Mureika and co-workers as well as Jones-Smith and Mathur. The debate is well reviewed in: Cernuschi, C., Herczynski, A. and Martin, D. "Abstract Expressionism and Fractal Geometry". In catalogue: Ellen G. Landau and Claude Cernuschi (eds.) *Pollock Matters* University of Chicago Press (2007) 91-104.

⁴ Alvarez-Ramirez, J., Ibarra-Valdez, C., Rodriguez, E. and Dagdug, L. "1/f-Noise structures in Pollock's drip paintings" *Physica A* **387** (2008) 281-295. Irfan, M. and Stork, D.G. "Multiple visual features for the computer authentication of Jackson Pollock's drip paintings: beyond box counting and fractals" *Proc. SPIE* **7251**, p.72510Q, 2009.

4. Paint analysis

In the third strand of scientific examination, the composition of the materials of the paintings, appeal has been made to the principle that compounds present will reflect the time from which they come. As new materials become available and as old materials fall from use, so the pattern of pigments and binders used by artists will change. Analysis of artists' materials has a long history of use (in fact, longer than the history of fingerprint examination) and is a widely accepted approach to the study of authenticity in art. The techniques used are well established and largely robust, therefore carrying substantial weight in such discussions.

Here, the specific expectation is that the range of materials to be found in the Chrysalis paintings should be typical of those readily available in the years immediately prior to the death of Pollock, or that there should be special evidence that Pollock had access to such materials. A suite of common analytical techniques has therefore been applied to paint samples to determine to a highly refined degree what pigments and media are present, and then compare these results both to our expectations for the 1950s generally and Pollock in particular. An aid to this has been the access we have had to the Pollock-Krasner Studio paint cans, the paint on the studio floor, and a small set of samples from Pollock paintings in museum collections. In addition to determining the range of pigments and binders present and showing that these are in the main entirely plausible for Pollock it has also been shown that there is a high degree of coherence across the collection among the materials present in each of the works analysed so far.

Several issues remain to be resolved with the paint analysis though. One of these concerns the likely date of the Chrysalis paintings – surmised to be from the very end of Pollock's career – and the validity of the reference material. It is clear from the analytical results that the profile of pigments is different to that of, say, the paint cans, with more synthetic organic pigments present than found so far in the studio materials, implying a later date. This could of course be as a result of the paint cans being of older origin; we know for example that some paint cans are to be seen in the photographs of Pollock in action in the early 1950s, and that he re-used the cans (so that they may contain residues of much older paint). A second issue is the presence of CI Pigment Yellow 74 in a number of works, a pigment only marketed commercially after Pollock's death. However there may be perfectly reasonable explanations for this, ranging from later interventions to Pollock having been given access to experimental batches of the pigment (for which there appears to be some anecdotal evidence). Clearly these areas need to be more fully researched. Additionally, paint analysis is also applicable to all the works and is the only one of these approaches that can show whether parts of paintings contain anachronisms and may therefore be later additions. Consequently there is a need to apply it to all the Chrysalis works, feeding results back where necessary to validate and/or modify the conclusions drawn by the fractal and fingerprint analyses.

5. Conclusions

One aspect that should be stressed in the scientific and forensic work is the independence of the various approaches. That is, the data on which the conclusions are based in each method is derived from separate evidentiary aspects of the paintings: specifically, the fractal analysis depends upon the artist's gestural characteristics, the fingerprints come from the artist's direct physical contact with the work and the pigments are as a result of choices the artist makes amongst available starting materials. As a consequence of there being little or no overlap of substance between these

the evidence of each can thus be meaningfully combined to draw stronger overall conclusions. In other words, from knowledge of the reliability of each methodology combined with the status of the outcome of the associated analysis an overall confidence level can be established. Such approaches are increasingly being used in judicial settings, but are equally applicable here.

An important related point concerns documentary evidence. This has already been mentioned in the context of the materials analysis and the potential availability of experimental or pre-production paints to Pollock, but another specific question relates to extant documentation of the paintings themselves. For example, what impact on the overall assessment of the Chrysalis Collection would the appearance of, say, a contemporary hand-list of the works? In practice in such circumstances it is known that the focus of authenticity questions (not unreasonably) tends to shift towards the document itself. Scientific (and other) analyses then come into play on the document, raising very similar issues to the scientific studies of the works. It is also common for such documents to attract controversy in their own right, with doubters and detractors, such that one ends up in a situation where general confidence is unlikely to reach anything approaching 100%. None-the-less, it is possible to incorporate such findings explicitly into the overall evidential structure surrounding the Collection as part of the same methodology as that just described for the scientific elements of the study, enhancing confidence.

Several other areas remain to be fully addressed in the overall project, relating to both scientific and art historical studies. In the scientific domain, a more detailed survey of the papers remains to be conducted by an acknowledged specialist. It has been apparent in the physical surveys conducted as part of the fingerprint and paint analyses that there are quite specific types of papers present and it would be advisable to have clear opinion on these, including with respect to what is known of Pollock's other use of paper. Second, the supports are amenable to radiocarbon dating: while dating of the support papers and canvases does not necessarily date the works themselves, it can provide a date after which the works must have been created. Exploiting features in the radiocarbon record that resulted from the atmospheric nuclear testing that started in the 1940s and allowing quite precise date determinations, it is an approach that is both well-recognised and robust. Third, the mtDNA studies could be pursued, although it is unclear at this point whether evidence as strong as, say, the fingerprint analysis can be achieved. Fourth, the scientific and forensic studies would also benefit from greater art historical context. Rather than a purely connoisseurial opinion, this would essentially represent a view based on documentary and comparative studies of when the paintings in the Chrysalis Collection are each likely to have originated. For instance, do they represent output across a number of years and, if so, how broad a range? Is there any clear stylistic development involved? Additionally, closer examination of other documentary evidence such as studio photographs, extant purchase receipts for materials and so forth could give us a much more complete understanding of the paintings and exactly what they represent. The involvement of an experienced and respected Pollock scholar to assist with this would undoubtedly make the findings widely acceptable. Finally, it cannot be underestimated the extent to which a pre-existing coherent scientific survey of a large number of fully accepted paintings by Pollock could have played in this process, but that also it is not necessarily too late to develop at least a substantive subset of such a resource. It is important to note that in, say, the fractal analysis one of the criticisms has been that a

relatively small group of works was used for the published papers⁵, while the paint analysis is reliant on material from the studio paint cans, the studio floor (a potentially contaminated source) and a small group of paintings from which only a highly limited sample set is available. The scale of the Chrysalis Collection is such that a ‘scientific *catalogue raisonné*’ for Jackson Pollock could be contemplated, supplying further credibility to the project as a whole.

In conclusion, to this point the various scientific and forensic studies in principle broadly support the contention that the Chrysalis paintings could be by Jackson Pollock, though with a series of provisos that still need to be addressed. The various studies across the whole collection should consequently now be completed with any outstanding issues concerning current methodologies and individual results resolved so as to achieve the full benefit of the work already done. Additional analyses and other contextual research agreed to be necessary, both scientific and art historical, should be conducted so that a final ‘meta-analysis’ can be made and a strong conclusion drawn.

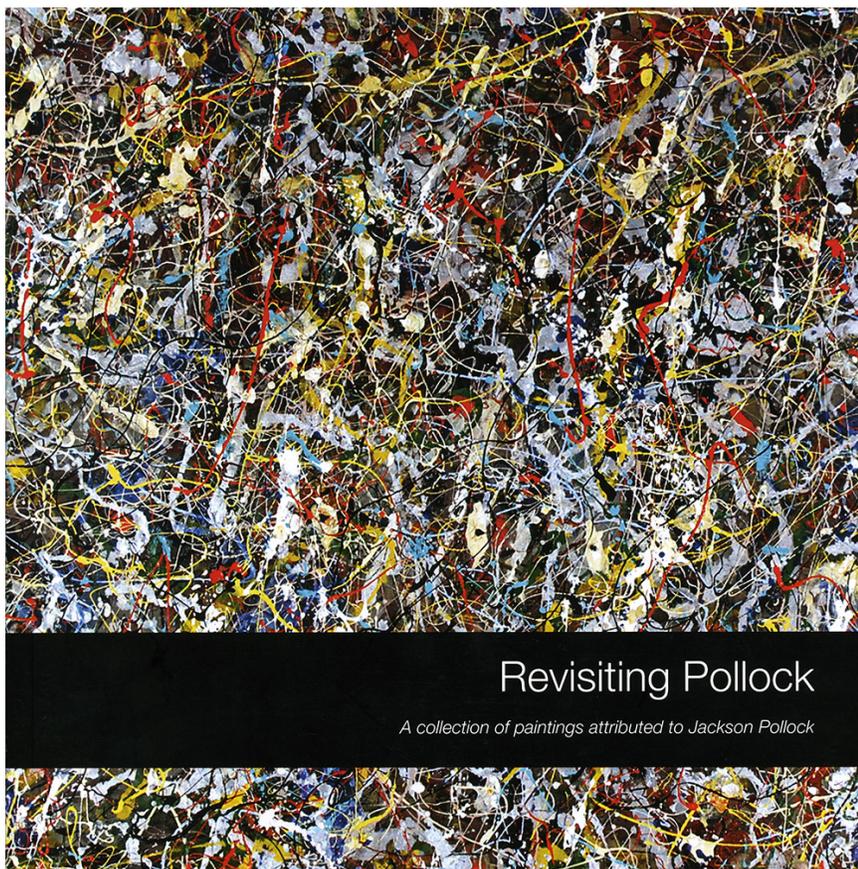
Dr. Nicholas Eastaugh
14th April 2010

⁵ In the 2007 critique by Cernuschi, Herczynski and Martin (*op. cit.*) it is reported that only 17 authenticated works had been examined by Taylor at that point, of which four apparently yielded inconclusive results. Image processing approaches typically demand quite large groups of works to be analysed to ‘train’ the systems, often a drawback in art historical situations where the datasets for specific questions may be small for statistical reliability.

Revisiting Pollock

A collection of paintings attributed to Jackson Pollock

This first public exhibition of paintings from Pollock's Paradigm was held at the Azusa Pacific University, California, in October, 2008. The exhibition was reviewed by the major newspapers, including the Los Angeles Times. (Some of the material on this page is copyright Azusa Pacific University, 2008)



Revisiting Pollock exhibition catalog cover ISBN: 978-0-615-24823-3

Below is an excerpt from the Exhibit Program where Paintings from this collection were showcased.

Introduction to Azusa Pacific Exhibition Catalog

By William Catling, MFA Chair, Department of Art

It is an unusual experience when a collection of art attributed to a major 20th century artist becomes available for exhibition, especially someone of Jackson Pollock's reputation. My interest in Pollock's work intensified 25 years ago when I searched through the Periodic Indexes of the San Francisco State University Library looking for articles that would inform my research on the tension between the myth and the man.

An art exhibition completes the dialog an artist begins when he or she transforms materials, adding content and concepts to the "stuff of art" and producing works for viewing. In a university setting, this process of visually engaging with works of art enhances the theoretical and practical instruction within the classroom setting. Usually this consists of local talent and student exhibitions. The opportunity to view works attributed to an artist of Pollock's stature intensifies the richness of the dialog students and guests experience in our galleries. We hope you will benefit from this experience and gain deeper understanding and appreciation for Pollock's work.

This exhibition of paintings attributed to Pollock involved the work of many individuals. Foremost on the list is Erich Neumeth, owner of these works. Our connection with Mr. Neumeth comes through APU Board Member Howard Kazanjian and mutual friend Russ Turner. On the APU campus, we especially thank President Jon Wallace and Executive Vice President David Bixby for their vision and support of the arts and this exhibition.

A special thanks to the hardworking university personnel on campus who have made this exhibition a success: Tom Andrews, special advisor, University Libraries and research historian for special collections; Lori Hester, executive assistant to the executive vice president; Laura Palusso, manager of special events; Louise Furrow, executive director of development; APU Department of Art faculty, staff, and students who helped install the exhibit especially Professors David Carlson and Amy Day and her Gallery Design students; Technical Manager Kris Hoffman and his support crew- John Navarro, Jeremiah Gatling, Daniel Miller, and Brian Allan.

It is with deep appreciation that I offer thanks to Professor Jim Daichendt for his tireless leadership and his fine essay, along with an insightful commentary by distinguished curator John H. Neff and a thoughtful writing on Pollock's works by Guy Kinnear, professor of painting. The printing of this catalog would not have been possible without generous contributions from Dean David Weeks, College of Liberal Arts and Sciences, and Vice Provost Paul Gray. I am also very grateful to the team from University Relations who have worked so diligently to promote the show and design the announcements, catalog, and website. Thank you, Maureen Taylor, Allison Oster, Brett Barry; Jason Flicker, Chris Easterly, Christian Brazo, and Sheree Black. As with all acknowledgements, I apologize to all who I have not mentioned by name. Thank you, as your contributions have made this exhibition a worthy endeavor, one of which I am proud to have been a part.

William Catling, MFA / Chair, Department of Art

Revisiting Pollock: Engaging Art Through Attribution and History
by G. James DaichendtSetting the Stage

Set in the shadow of Los Angeles, Azusa Pacific University serves as the host of the exhibition *Revisiting Pollock*, a collection of paintings thought to be the work of Jackson Pollock, one of the 20th century's most scrutinized and mythologized artists.

In 1949, *Life* magazine published a story asking if Pollock was America's greatest living artist. Mid-century critics hailed Pollock's potential to become one of the elite, as detractors claimed his paintings were degenerate and as unpalatable as yesterday's macaroni. Since that time, generations of historians and artists have devoted a substantial amount of scholarship toward his works, while the most powerful museums and galleries in the world hope to acquire and display his art. I invite you—the reader—to engage with these images and investigate for yourself, while learning about attribution and Pollock himself, not only to gain insight into this artist, but also to further your understanding of why we engage with great works of art.

Pollock was both revered and sneered at for his dripped paintings. Since his rise to fame during the postwar period, admirers eager to learn, in addition to con artists hoping to make a quick dollar, have duplicated his work. Scientists, art historians, conservators, and aficionados are involved in many attribution cases that have surfaced after the artist's death. It is a curious turn of events. Anything of value is often imitated. However, because Pollock's style is difficult to comprehend, novice collectors often materialize, wondering if the look-a-like painting they acquired is worth millions. Frustrating to both sides, most of these cases are easily dismissed and miss the central aspect of why art is important.

Examining the Paintings

The experience one has with a work of art can range from frustrating to enlightening. The best way to start involves looking carefully. With Pollock, the potential value often distracts the viewer from looking at the image for what it is: paint on canvas. In my encounters with Pollock's known works, the varieties of line and movement evoke strong feelings. Pollock's ability to control his mark and his sensitivity to the interaction between colors, canvas, and pattern communicate carnal responses that often physically move the viewer to recognize their position in relation to the image. The largest canvases executed by Pollock reach more than 17 feet wide. The technical application of dripped paint exudes a particular strength in itself. The journey of painted line travels back and forth, ranging in speed and thickness, often overlapping, and sometimes mixing and forming a texture due to variations in consistency. Yet smaller works painted by Pollock seem to deconstruct this physical response and contain the energetic feeling within a framed space. In these instances, the small-scale gestures feel like controlled experiments due to their limited size and dwarfed movement. Similar to the rhythms of nature, the larger the image, the more physical the impact. The smaller images pack a punch, but deliver an experience on a far more intimate scale.

The images exhibited in *Revisiting Pollock* range in size from 24 inches to

more than 10 feet, some on canvas, others on paper. Those produced on paper are all the same size and each exhibits a softer, more contained dynamic of colors not typical of Pollock. The paintings feature shorter drips where we can identify the beginning and end. These sprite marks leave evidence of quick flips from a painting instrument.

Many characteristics of the paintings are reminiscent of well-known Pollock works. For example, the groundwork or basecoat in each work pushes the most recent applications of paint forward, highlighting certain movements and colors. Despite similarities, each individual piece appears slightly different—the variety of application methods is apparent when comparing them with one another—yet there is a similarity in size, medium, and style that suggests they were completed around the same time. Some use a broader application of paint, while others have a thinned and controlled application in which the background drips contrast the marks on the surface. These lines of paint react to one another as they appear to be dripped carefully with attention to the previous marks. A wider application of paint was used to highlight these differences in particular instances, a technical aspect of Pollock paintings that often goes unnoticed.

The largest painting, *Revelation I*, offers a richer aesthetic much more dense and thickly compacted compared to paper works. The colors in this large painting overlap and form a deep convergence of elements that communicate an intricate web of lines in many directions and layers. The physical response to this work compared to the smaller images is encompassing, as each line appears to add another voice that overwhelms the senses. Though size is important, the amount of paint and the frequency of its application drive the strong reaction from the viewer. Similar to a crowded room full of loud voices, the painting's voice appears to burst from the corners of the canvas extending its impact beyond the frame.

As the sizes of all the pieces range, the aesthetic experiences should as well. Viewed as a group, the images have a presence and reflect a number of different directions noticeable only after close investigation. Color schemes were chosen carefully in addition to the application, which demonstrates intentionality and purpose. In the end, the images appear to communicate a message with similarities and potential experimentation from the oeuvre of known Pollock paintings. Yet they also exhibit differences that could point toward a forgery, a possible collaboration, or an extension of Pollock's known messages.

My own introduction to Pollock includes many slide lectures, museum visits, and history texts illustrating his importance as a member of the New York School synonymous with the movement Abstract Expressionism. This group of well known artists include Willem de Kooning, Hans Hofmann, Franz Kline, and David Smith, to name a few. This significant movement, internationally recognized by the field, secured New York City as the center of the art world, a role Paris previously held for hundreds of years. While the artists who made up this movement displayed stylistic differences from one another, the expressionist label references the emotional intensity associated with imagery. Pollock typified this group, often considered a poster boy for the abstract expressionistic movement (Woolfenden, 1965).

The expansive Pollock legacy includes myths about his persona, characterizing him as a wild, out-of-control cowboy artist who lived on the edge and took the art world by storm until his life ended abruptly. "We revere the art of

Titians, Michelangelos, and Leonardos, but it is the Van Goghs, Lautrecs, and Pollocks with whom we empathize and establish vicarious kinships. The sad fact is that the elderly lack glamour” (Jacobs, 1968, p. 121). The appearance of enamel paint dripped or thrown on canvas is akin to wild behavior. Like a candle burning on both ends, Pollock’s personal escapades provoked a lot of attention through his reckless attitude. These stories capture the imaginations of viewers as Pollock’s paintings take on a new level of understanding based upon his outrageous conduct. Lee Krasner, Pollock’s wife, recalls a dinner party where the couple entertained a dozen or so guests:

“Jackson and Hans Namuth were at one end of the table. I don’t know what the argument was about, but I heard loud voices and suddenly Jackson overturned the whole table with twelve roast beef dinners. It was a mess. I said, “Coffee will be served in the living room.” Everyone filed out and Jackson went off . . . “(Plessix & Gray, 1967, p. 50).

Krasner goes on to describe her husband as angry, bitter, and impatient, but not violent. Yet many stories persist to link the wild musings of Pollock to his painting style. Stories of being punched by fellow painter de Kooning or drinking escapades resulting in hospitalization earned Pollock quite a reputation. But was Pollock’s artwork out of control? Scholars disagree and authors like Coddington (1999) and Varnedoe (1999) paint an alternative picture of the wild cowboy artist. Coddington (1999) emphasizes the careful construction and implementation of various choices in media and materials of Pollock’s work. Exact combinations of pigment were carefully experimented with and ultimately executed with precise craftsmanship. Often, particular paints were mixed and poured within one another to achieve desired effects after trial and error. In a similar vein, Varnedoe (1999) noticed a disconnect between Pollock’s lifestyle and his art making. His rough lifestyle of drunken binges stood independent of his rhythms of creating art. This became especially apparent during a 1999 retrospective featuring Pollock, comparing his biography with his life’s work. The noted New York gallery owner, Betty Parsons, concurs:

“Inside himself there was a jungle, because during his life he was never fulfilled—never—in anything. Of course, this didn’t diminish his power as a painter. His conflicts were all in his life, not in his work” (Plessix & Gray, 1967, p. 55).

The reckless times clearly did not correspond with the advent and production of his work. Often, the wild lifestyle appears to personify his drips and splatters, but research demonstrates he was purposeful, rather than chaotic, in his art making. Ironically, during his uncontrollable moments, Pollock reverted back to black and white work with a figurative and human emphasis (Plessix & Gray, 1967).

A Brief History of Pollock

To understand Pollock and his artistic significance, one must gain an appreciation of his life and context. Born in Cody, Wyoming in 1912, Pollock spent the majority of his childhood in Arizona and California. His oldest brother, Charles, and his brief education at Manual Arts High School in Los Angeles influenced his interest in art. In 1929, Pollock moved to New York to study with

Thomas Benton, an instructor at the Art Students League. Benton was a realist who taught from a lineage with a 16th century aesthetic. Pollock was a poor draftsman as a student, yet his early images show evidence of initial attempts to stylize his imagery. Pollock quickly lost interest in the realist style propagated by Benton and took to the Mexican muralists Diego Rivera and José Clemente Orozco. This led Pollock to join the Mexican muralist David Alfaro Siqueiros' Experimental Workshop in 1936. In this environment, he became aware of unorthodox mediums and techniques he would later incorporate (Friedman, 1995).

Due to the war, New York City saw an influx of European artists in the 1940s, adding to the cultural richness of the city and its emergence as a cultural capital (Greenberg, 1965). European artists brought a rich tradition of art making that fertilized the thought of American artists. Many centers existed to encourage the exchange of ideas, including bars, studios, and specifically, Peggy Guggenheim's Art of This Century Gallery. The gallery predominantly exhibited surrealists and slowly included many of the New York School, including Pollock, who had a solo show in 1943. Pollock experienced a meteoric rise to fame during this time, achieving regional and national acclaim.

His decision to take the canvas off the wall and forgo traditional painter's tools is considered one of the central components for his significance as an artist. In place of tradition, Pollock laid the canvas on the ground and chose to drip paint onto the surface. Regarding this new technique, he states:

"My feeling is that new needs need new technique and the modern artist has found new ways and new means of making his statement. It seems to me that the modern painter cannot express this age, the airplane, the atom bomb, the radio, in the old forms of the renaissance or any other past culture. Each age finds its own technique . . ." (Woolfenden, 1965, p. 111).

This style led him to abandon realistic imagery and create an image without attention on the traditional aspects of the figure and composition. From horizon lines to a proper top or bottom, Pollock transcended these notions as he took the canvas off the easel. In a 1947 Guggenheim application, Pollock writes:

"I intend to paint large movable pictures which will function between the easel and mural . . . The pictures I contemplate painting constitute a halfway state, an attempt to point out the direction of the future. Without arriving there completely" (Stiles & Selz, 1996, p. 22).

Pollock's career continued to advance, thanks to wife Lee Krasner and critic Clement Greenberg. Krasner looked out for Pollock's business interests (Plessix & Gray, 1967), while Greenberg, a long-time champion of the artist, used a set of principles for evaluating modern artists that favored Pollock's style. Achieving international success as an exhibitor in the 1950 Venice Biennale, Pollock's paintings were acquired by major museums, including New York's Museum of Modern Art and the San Francisco Museum of Modern Art. Despite receiving critical success, self-doubt pervaded Pollock.

". . . Pollock was also sustaining frivolous and damaging

criticism, mostly aimed at his methods, and he received them with bitterness. He was especially vulnerable because of the personable nature of his work. It is terrible to be great alone, and . . . Pollock suffered from attention of the wrong kind” (O’Hara, 1959, p. 116).

Edwards (2006) illustrates how difficult it was for the average American to receive the genius of Pollock’s work. Whether it was a class or cultural issue, the musings of the cultural elite critics did not correspond with acceptable notions of fine art. Adding to his myth, Pollock died in an automobile accident on August 11, 1956. Alfonso Ossorio, a fellow painter, comments on Pollock’s untimely tragedy: “Jackson had no intention of dying when he died . . . He had just put lights and heat into his studio; he had new rolls of canvas, buckets of paint; he was all ready to work” (Plessix & Gray, 1967, p. 57). Soon after his death, a show planned at the Museum of Modern Art became a memorial exhibition, and the myth of Pollock began with pilgrimages to the accident site on Fireplace Road and legendary tales that often stretched the truth (Jacobs, 1968).

The Controversy: Pollock, or Not?

His short life, quick rise to fame, and growing mythology feed into recent controversies. Pollock’s work does not follow an obvious linear development, as he worked in variations of it simultaneously. This is prevalent in the 1950s, as his paintings varied and looked different from earlier known works (Kantor, 2003). In addition, he preferred to name his paintings with numbers so viewers would not look at them with preconceived notions. This ambiguity frustrates many in determining the essential qualities of Pollock’s paintings. Specifically, Alex Matter, the son of photographer and filmmaker Herbert Matter, a good friend of the Pollock family, has struggled to determine the essential qualities of Pollock’s paintings.

Matter’s case involves the discovery of 32 paintings in his father’s storage locker. The small paintings, completed in the poured and dripped style of Jackson Pollock, have left many professionals baffled. Since the find in 2002, the legitimacy of the images lies at the heart of a fierce debate. Pollock expert Ellen Landau confirmed the paintings’ authenticity, but conservators from Harvard University claim some of the images contain paint not available in pigment until 1996, while another pigment was only available after 1971 (Edgers, 2007), long after Pollock’s death in 1956. Another strike against Matter’s paintings involved findings from Richard Taylor, a physics professor who claims the paintings do not contain the patterns that regularly occur in known Pollock paintings. After all this research, the jury remains out and the debate rages for the foreseeable future.

Another notable authentication dispute involves former truck driver Teri Horton. The 73-year-old is the focus of the biographical film, *Who the #&% is Jackson Pollock?* Horton’s story starts when she bought a \$5 painting from a San Bernardino thrift shop in the early 1990s. The large image is thought to be a Pollock because it contains a fingerprint identical to one found on a can in Pollock’s Long Island studio, now a museum. The discovery leads Horton on an interesting trip through the art market, as she turns down an offer from an overseas collector willing to purchase the image for millions of dollars (Kennedy, 2006). Both attribution stories illustrate the unknowingness that historians,

scholars, and aficionados must live with when potential Pollocks appear on the market. Problems extend further to include political battles waged by foundations and dealers who often have much to gain—or lose.

To combat the surface-level similarities particular abstract paintings have with original Pollock images, a system has been developed by Taylor, an inquisitive scientist, that may accurately identify the unique aspects of Pollock's paintings. He developed a computer system to authenticate whether the drips in paintings match the characteristic geometric patterns Pollock actually performed. Taylor is responsible for attributing the large image referred to as Revelation I to Pollock. To achieve this feat, Taylor claims that the drip patterns of Pollock are fractal and can be measured. Ultimately, he concludes that the fractals within Revelation I match those found in known Pollock paintings.



UNIVERSITY OF OREGON

8th November 2004

To whom it may concern:

Dear Sir/Madam,

In my capacity as a Professor of Physics, Psychology and Art, Jackson Pollock's 'poured' paintings have been a focus of my research for the past ten years. The purpose of this letter is to express my opinion that the four 'poured' paintings referred to as Revelation I, II, III and Blue Heaven are highly significant art works.

In 1999, I published the results of a pattern analysis of 35 colored layers taken from 17 of Pollock's poured paintings. The 17 paintings were selected to represent the range of canvas sizes and paint media appearing in Pollock's catalogue and also spanned the 10-year period over which Pollock developed his poured technique. All 35 layers were found to be composed of a highly distinguishable form of fractal pattern. The chances of this specific fractal form occurring in all 35 painted layers by random coincidence was calculated to be less than one chance in ten million, indicating that this is the artistic signature of Pollock's poured paintings.

Fractal patterns are extremely intricate and complex, and for Pollock to paint these patterns so precisely is a remarkable achievement. My research indicates that he was able to do this by developing a highly systematic and refined process - one that would be very difficult to replicate by others. To gauge whether this fractal generation technique is unique to Pollock, we invited 37 people to replicate Pollock's trademark fractal patterns, but none of the participants was able to do so. In addition, a known fake Pollock painting and poured paintings by other artists (e.g. Max Ernst) also failed to match the fractal trademark found in Pollock's work.

This 100% success rate for Pollock poured paintings and 100% failure rate for non-Pollock poured paintings raises the intriguing possibility of using this analysis technique for authenticity studies, particularly when combined with other important information such as material analysis, connoisseurship and provenance issues. Consequently, my research group receives a large number of requests each year to perform fractal analysis of poured paintings of unknown origin. It is rare that the visual characteristics of submitted paintings are sufficiently close to Pollock's fractal style for my research group to conduct a full fractal analysis - since 1999, my research group has selected only 20 drip paintings submitted by private collectors. Of these, only the four paintings - Revelation I, II, III and Blue Heaven have been shown to be composed of the specific form of fractals found in Pollock's poured paintings. These four paintings therefore represent a rare and fascinating finding for researchers interested in Pollock's work.

Yours faithfully,


 Professor Richard Taylor

Fractals, a new form of geometry, emerged in the 1970s to describe and measure the scientific field of chaos theory (Taylor, 2002). A fractal is a structure whose parts resemble the whole (Mureika, Cupchik, & Dyer, 2004). “In contrast to the smoothness of artificial lines, fractals consist of patterns that recur on finer and finer magnifications, building up shapes of immense complexity” (Taylor, 2002, p. 118). Taylor began by examining the painting *Autumn Rhythm* by Pollock. Along with his team, he covered a scanned image of the painting with a grid of identically sized squares. The process created a statistical pattern by identifying which squares were empty and which contained a painted pattern. Magnifying the squares to uncover a similar pattern followed. Through this process, separate colors were analyzed, as well as the entire combination and layering of the pigments. By utilizing this process on squares ranging from a meter to a small paint speck, Taylor found the patterns to be fractal over all the size ranges, an amazing accomplishment he writes, because Pollock depicts an issue of physics 25 years before its discovery in nature (Taylor, 2002).

Taylor studied additional Pollock paintings in order of completion and found the complexity of fractal patterns increased as he refined or progressed in his technique, a method that could be used to appropriately date a Pollock. Later paintings use a consistent fractal pattern, but more layers of paint build up a fractal pattern that fills more space, eventually culminating in a solid canvas (Taylor, Micolich, & Jonas, 1999). Taylor, Micolich, and Jonas (1999) explain that Pollock’s fractal patterns increased from a single layer in 1943 to multiple layers of trajectory in 1952.

The question remains whether this method can help determine authentication issues accurately. Taylor is positive about its prospects because he has examined intentionally faked Pollocks in addition to questionable art work submitted by unsure collectors, which he reveals did not contain fractal patterns. Buchanan (2007), however, remains skeptical of Taylor’s findings and claims the analysis is not foolproof. As science provides data, it should be weighed against the history and provenance of images. Yet is scientific methodology the best process to attribute works intended to be expressive? It certainly deserves a voice and, as the methodology applied by Taylor, provides positive data for the exhibited paintings in *Revisiting Pollock* in contrast to negative data for Matter’s images.

Regardless of whether a computer program identifies characteristic swirls of Pollock, it begs the question: does it matter? The power of art lies in its ability to transcend what words cannot. The methodology has its strengths, yet it lacks the ability to comprehend the qualitative aspects of experiencing paintings. Pollock’s work communicates an unspeakable richness and depth through the various speeds and movements of the mark-making devices he used. The aesthetic experience can only be felt in the looking process and always requires reflection. Noticing the small and large details and where they interact with one another can only be accomplished through human consciousness. When individuals engage with works of art in this way and construct meaning through

the viewing process, the experience becomes the primary reason for looking.

Paintings Revealed After 40 Years

As a historian, I am concerned with the story and the significance of genuine ideas, and as an art aficionado, I am fascinated by the powerful experiences one can have with works of art.

In the 1960s, owner Erich Neumeth acquired the images exhibited, plus an unknown number making their way through the art market, from a debt owed to him. Tucked away for 40 years, only in the last 10 years have the images received outside interest (see figure 5). The unveiling of these works is timely, as many scholars wrestle with questions and issues regarding authorship. As a result of this exhibition, the images are now part of visual culture.

Conclusion

Several issues exist regarding the paintings, including provenance, the reliability of science, and Pollock's impact on the art world, which still reverberate. An artist who enacted a process often compared to performance art, Jackson Pollock danced around his canvases, spreading, pouring, and dripping. Interestingly, his dance continues metaphorically as the art field shimmies around sticky issues of attribution. Through *Revisiting Pollock*, we reacquaint ourselves with the man and the myth, while simultaneously attempting to engage with the works objectively as art. While some historical questions are easily answered, others dealing with attribution perhaps will emerge with time. However, in the end, great works of art are displayed for us to enjoy. The potential value should not determine importance. Rather, it is the experience we esteem. The process of looking at and thinking about art is the activity we facilitate, and hopefully, through this exhibition, you will engage with the paintings and revisit Pollock.

James Daichendt, Ed.D., is the exhibitions director and associate professor of art at Azusa Pacific University. As a scholar, he has written on modern topics, including the intricacies of the artist-teacher while serving as an administrator for The Dahesh Museum of Art, New York, teaching at Queens College, City University of New York. He received a doctorate from Teachers College, Columbia University; master's degrees from Boston University and Harvard University; and a bachelor's degree from Azusa Pacific University.

This article was originally published by Azusa Pacific University for the exhibition: *Revisiting Pollock* held at the Duke Art Gallery at Azusa Pacific University from October 4-11, 2008. The Department of Art faculty and students carefully framed and hung 7 canvases and 10 works on paper lent by Erich Neumeth to record crowds and critical success for the highly anticipated exhibition.

Works Cited

- Buchanan, M. (2007). Fractals can't separate the fakes from the Pollocks. *New Scientist*, 196(2629), 11.
- Coddington, J. (1999). No chaos damn it. In K. Varnedoe and P. Karmel (Eds.), *Jackson Pollock: New approaches* (pp. 101–116). New York: Museum of Modern Art.
- Edgers, G. (2007, January 30). Harvard study casts more doubt on disputed Pollock paintings. *The Boston Globe*.
- Edwards, K. D. (2006). *Jackson Pollock in the cultural context of America, 1943—1956: Class, mess, and un-American activities*. Unpublished doctoral dissertation, University of

Texas at Austin.

Jacobs, J. (1968). Of myths and men. *Art in America*, 56(1), 121–125.

Friedman, B. H. (1995). *Jackson Pollock: Energy made visible*. New York: Da Capo Press.

Greenberg, H. (1965). America takes the lead 1945–1965. *Art in America*, 43(4), 108–109.

Kantor, J. B. (2003). *Jackson Pollock's late paintings, 1951–1955*. Unpublished doctoral dissertation, Harvard University.

Kennedy, R. (2006, November 6). Could be a Pollock; Must be a yarn. *New York Times*.

Mureika, J. R., Cupchik, G. C., & Dyer, C. C. (2004, February). Multifractal fingerprints in the visual arts. *Leonardo*, 37(1), 53–56.

Taylor, R. P. (2002, December). Order in Pollock's chaos. *Scientific American*, 116–121.

Taylor, R. P., Micolich, A. P., & Jonas, D. (2002, April). The construction of Jackson Pollock's fractal drip paintings. *Leonardo*, 35(2), 203–207.

Taylor, R., Micolich, A. P., & Jonas, D. (1999, October). Fractal expressionism: Can science be used to further our understanding of art? *Physics World*, 12(10), 25.

Moses, H. (Director). (2006). *Who the #\$% is Jackson Pollock?* [Motion Picture].

United States: Picture House.

O'Hara, F. (1959). *The great American artist series: Jackson Pollock*. New York: George Braziller, Inc.

Plessix, F., & Gray, C. (1967). Who was Jackson Pollock? *Art in America*, 55(3), 48–59.

Soussloff, C. M. (2004). Jackson Pollock's post-ritual performances: Memories arrested in space, *The Drama Review*, 48(1), 60-78.

Stiles, K., & Selz, P. (Eds.). (1996). *Theories and documents of contemporary art: A sourcebook of artist's writings*. Los Angeles, University of California Press.

Varnedoe, V. (1999). Open-ended conclusions about Jackson Pollock. In K. Varnedoe and P. Karmel (Eds.), *Jackson Pollock: New approaches* (pp. 233–245). New York: Museum of Modern Art.

Woolfenden, W. E. (1965). The artist speaks: Part six. *Art in America*, 53(4), 110–130.

Pollock?

by John Hallmark Neff

How do we know if the works in this exhibition were made by Jackson Pollock? And why do we care?

The paintings in this collection are characteristic of the 1947-50 period, in which Pollock, sober and focused, made his so-called drip (or pour) paintings, which suddenly propelled him to worldwide fame as "Jack the Dripper."

Are they valuable because no great collection of 20th century art could be considered complete without at least one Pollock, one of the "breakthrough" paintings that played a major role in the cultural shift in hegemony from the School of Paris to the School of New York? Are they valuable because certain European critics and artists acclaimed Pollock as the first American painter to have made a difference in Western art, thereby extending his fame beyond the U.S.? Or is it merely because of their potential value in today's global art market that we want to know if they are indeed "authentic"?

Perhaps it is because we seek reassurance of the integrity of the Pollock canon. The canon manifest in the exemplary work of the Pollock catalogue raisonne team established standards for authentication and attempted to account for each and every one of his objects, paintings, drawings, prints, sculptures, and miscellaneous objects (O'Conner & Thaw, 1978; O'Conner, 1995). Following Pollock's death, this became a necessity due to numerous fakes, forgeries, and attempted copies that began to appear. Additionally, pickers scoured Long Island for overlooked Pollocks given to friends or bartered for services or groceries.

Do we care about authentication because this particular group of exhibited works questions our understanding of Pollock's achievement and poses the risk that we might praise what we can't confirm? Skeptics may relish the prospect that "experts" who think enough of Pollock's work to study it in detail may be fooled, thereby calling into question their claims of its significance.

Does their unexpected appearance keep the Pollock saga open-ended? Or might the fascinating CSI-like analysis of splatter patterns offer an intriguing distraction from news about the economy and the War on Terror?

Mistakenly, Pollock is often identified solely with his three years of poured, "overall" paintings. Yet many artists in the 1930s and early 1940s in Europe and the United States practiced dripping. Art classes also used this technique to facilitate a student's confrontation with a blank canvas and to probe the unconscious for imagery.

Pollock's approach was very much his own, although some critics, including many cartoonists, believed that making a Pollock was fool's play.

Stanley William Hayter, who came to New York from Paris in 1940, and in whose progressive Atelier 17 Pollock made etchings, challenged skeptics to try to imitate Pollock:

Go to it, and I'll bet you that not one of you can make one square inch of anything that could be mistaken for what Pollock's done ... And they couldn't because it's absolutely distinctive, more than handwriting. It's like attempts at faking Pollocks: You can't be fooled (Potter, 1987).

Hans Namuth's famous black and white photographs that originally accompanied Robert Goodnough's "Pollock Paints a Picture" article in *Art News* (May 1951), and his color movie, in addition to photographs by Rudy Burckhardt, show the artist at work. Pollock leans in from all sides above the un-stretched linen or cotton-duck flat on the studio floor, or outdoors on a concrete slab, drawing rhythmically through the air. Using sticks, stubby brushes, pierced paint cans, even basting syringes loaded with liquid oil paint or enamel, his gestures and gravity guiding into marks and stains.

First impressions and films aside, however, scientific analysis confirms the pour paintings weren't simply the result of a single prolonged outburst of energy and concentration, but evolved during numerous re-workings. This is similar to Monet, whose famous *Grain Stacks* and other series, once thought to have been completed rapidly outdoors to catch the changing light, were in fact refined later in the studio to work as an ensemble.

Pollock often returned to his paintings to nuance, inflect, or intensify colors, adjust the reflective or absorbent qualities of matte and gloss paints, submerge and/or reaffirm discrete images, and throw them back into the ambiguous flux of his painting. Indeed, his best work is as visually and materially complex as the Old Masters he most admired (Coddington, 1999; Karmel, 1999; Mancusi-Ungaro, 1999; Storr, 1999). Pollock frequently insisted that his work was not accidental, but controlled.

Nor is it simply "abstract." Infra-red, ultra-violet, and other sophisticated imaging techniques reveal that beneath even the most "atomized" of Pollock's constellations lies the representational (if calligraphic) armature for what we experience as abstractions, those stick figures and heads to which he returned in 1951 after the three-year run of pour paintings that made his reputation (Karmel, 1999).

His physically complex paintings contain unique structure and are seemingly forgery proof. Yet Pollock's idiosyncrasies and superstitions complicate the task of authenticating possible forgeries.

For instance, Pollock would often invite friends to add marks of their own. And, in order "to goad him to work" during one of his debilitating bouts of depression, artist Lee Krasner, Pollock's wife, sometimes initiated painting on the bare canvases herself.

Nor did Pollock like to sign his work. He hated it, famously procrastinating until the last minute when creating paintings for exhibitions or a rare collector. To sign his name imposed unwelcome closure and the end of possibilities - a kind of death.

Titles proved equally limiting. He avoided naming his work until pressed to do so, welcoming suggestions and feeling free to change them later. This further complicated identifications, exhibition histories, and provenance.

His works from the 1930s into the mid-1940s received verbal, allusive titles derived from invocations of classical and Mezzo-American mythology, his years spent with artist and mentor Thomas Hart Benton, his transformative experience working with Mexican muralist David Siqueiros, and his Jungian-based therapy. As his work became more abstract around 1947, moving away from Picasso, Miro, Matisse, Orozco, and others, he began to number the works instead, only occasionally using names. In order to simplify inventory, his new dealer Sidney Janis urged Pollock to use names. This coincided with the

reappearance of the figure in Pollock's paintings and drawings around 1951-52, reemerging from its structural, generative role beneath his veils of looping lines, drips, and spatters. This startling change appeared regressive to fellow artists and once-supportive critics.

These quirks and inconsistencies were compounded in the aftermath of Pollock's fatal car crash the evening of August 11, 1956, not far from his modest home in Springs on Long Island. Krasner quickly took charge to sort out the contents of his studio. Even so, close friends were certain that some paintings had already been removed from the old converted barn during the confusion. Krasner established three categories: those done by Jackson, those done by others, and "collaborations."

Not surprisingly, these paintings and drawings were largely unsigned, though Pollock's finger-, hand-, and footprints, and cigarette ash also witness to his authorship. Allegedly, some of these were inscribed by his widow, others at her behest. Consequently, we have examples of authentic Pollocks with forged signatures, but apparently not vice-versa (Potter, 1987).

These and other authentication issues may be resolved in time. Even so, does it matter? What is so important about the paintings of Jackson Pollock, apart from their value as cultural commodities? Why do we care?

Is it the art historical legacy of Pollock's process, not his imagery, that liberated younger artists? Richard Serra splashed liquid lead into a corner to form sculpture untouched by his hand. Barry Le Va created scatter piece installations. Robert Morris used gravity to give sculptural form to incised rectangles of suspended felt. Not to mention Helen Frankenthaler's stain paintings and Color Field Painting, among others.

Or is it perhaps what the great Italian painter Giorgio Morandi, accompanied by artists Gino Severini and Lucio Fontana, saw in 1950 when previewing the American Pavilion at the Venice Biennale? He turned around and saw a painting by an artist unknown to him and said, "Ah, ah . . . this is new. Vitality, energy-new!" (Potter, 1987).

For this writer, that says it all. More than 50 years later, Pollock's best work remains powerful-still challenging, still new, still intense, still raising questions.

Art historian John Hallmark Neff, (Matisse, Kiefer, & Newman, Art in Public Spaces), is an independent scholar, curator, and consultant for museums and foundations. Formerly director of the Museum of Contemporary Art. Chicago and other museums, he taught 19th and 20th century European and American art history at Williams College, and was art advisor to the former First National Bank of Chicago. He received a B.A. and Ph. D. from Harvard University.

Works Cited

- O'Connor, F. V., & Thaw, E. V. (1978). Jackson Pollock: A catalogue raisonne of paintings, drawings, and other works. New Haven: Yale University Press.
- O'Connor, F. V. (Ed.) (1995). Supplement number one to Jackson Pollock: A catalogue raisonne of paintings, drawings, and other works. New York: The Pollock-Krasner Foundation, Inc.
- Potter, J. (1987). To a violent grave, An oral biography of Jackson Pollock (pp. 98, 268). Wainscott. New York: Pushcart Press.
- Coddington, J. (1999). No chaos damn it. In Varnedoe, K. & Karmel, P. (Eds.), Jackson



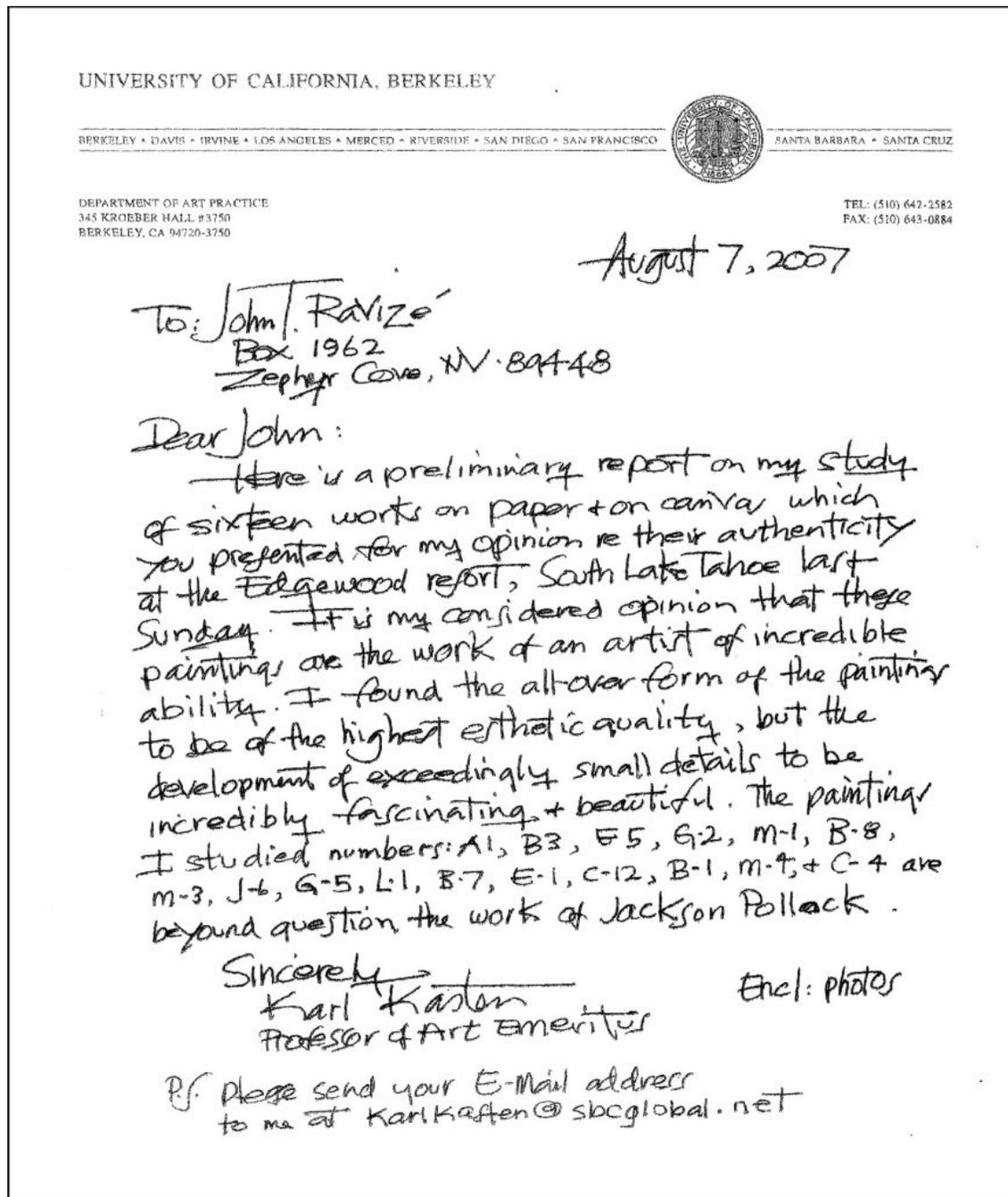
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- Pollock, new approaches (pp. 101-115). New York: Museum of Modern Art.
- Karmel, P. (1999) A sum of destructions. In Varnedoe, K. & Karmel, P. (Eds.), Jackson Pollock, new approaches (pp. 71-99). New York: Museum of Modern Art.
- Mancusi-Ungaro, C. C. (1999). Jackson Pollock: Response as dialogue. In Varnedoe, K. & Karmel, P. (Eds.). Jackson Pollock, new approaches (pp. 117-120 and 145-153). New York: Museum of Modern Art.
- Storr, R. (1999) A piece of the action. In Varnedoe, K. & Karmel, P. (Eds.). Jackson Pollock, new approaches (pp. 33-69). New York: Museum of Modern Art.

Expert Opinions:

Paintings from the collection: Pollock's Paradigm, were inspected by **Karl Kasten** in 2007. Karl is a respected art authority, artist, Professor of Art at UC Berkeley for 33 years, and eventually the chairman of the UC Berkeley Art Department. He was a contemporary of Jackson Pollock and also studied with Hans Hoffman and Stanley William Heyter. After close examination of paintings from the Pollock's Paradigm, in 2007, he stated: "They are beyond question the work of Jackson Pollock." The following are some of his writings about the Pollock's Paradigm collection.



***ARTIST UNKNOWN* by Professor Karl Kasten**

The works lie hidden, closeted, imprisoned
 They must find freedom, to be seen, minced, to live in all their glory. Why should they be sequestered for more than half a century?
 Can they be declared real?
 Who is to say them nay!
 Who will say they are real?
 Who can say these are the work of a creative genius.
 One of the greatest. Of whom de Kooning said, "He broke the ice!"
 Who will assume authority to declare them real?
 I will. I am the painter-educator who introduced the study of materials and techniques of painting at the University of California in 1961, and recognized the significance of unknown Egon Schiele in 1956. It was my judgment that influenced the careers of Elmer Bishoff, Allsandra Comini, Christopher Brown, et alia. These works will enjoy the light of day to the delight of the world.

***JACKSON POLLOCK, THE REAL McCOY* by Professor Karl Kasten**

McCoy was the name of a prizefighter who became so successful that an imitator took his name. Consequently, when he entered the ring he would announce, "Here I am, the Real McCoy."
 Jackson Pollock's father was born a McCoy, but was given up for adoption and the adopting parents, the Pollocks, gave him their family name. I have been asked to examine a group of paintings reported to be the work of Jackson Pollock. The group is comprised of fifteen canvases and thirty-five works on paper. As of this date, November 7th, 2007, I have studied six canvases and seventeen works on paper in the collection. They are beautiful. I was particularly struck by the paintings in mixed media on paper, 26x40 inches. The paintings are so beautiful that I want them declared "the real McCoy!"

***JACKSON AND $E = MC^2$* by Professor Karl Kasten**

Jackson and Einstein were all about the ultimate nature of reality. Jackson did not talk much about his work but he did say "I am nature", and Einstein put it in the equation $E=mc^2$ (mass and energy interacting). Robert Oppenheimer put it another way, he said the ultimate nature of reality must be something in between mass and energy. Jackson in his painting made this "something" manifest. That is the exciting thing about his work- it is not totally abstract, it is representational; it represents what he revealed between his action in painting (energy) and his material (mass).
 Jackson was not alone, no man is alone. DeKooning said, "Art is a railroad going back to Mesopotamia". All art forms we enjoy today had antecedents in the past. In Jackson's case his immediate leaders were Paul Gauguin for linear quality (the physicist's definition of line is that it is the "trace of a point in space"), Paul Cezanne for spatial quality, and Vincent van Gogh for mass.
 Paul Gauguin (1847-1903) was the first artist to use the term "abstract" in reference to painting, he was the first to reveal that line could be more than the manifestation of a contour, that it could be designed, that it could be an important plastic element in a composition taking its place along with color, value, and texture. He was also the first to use color as color.
 Paul Cezanne (1839-1906) revealed that the space in painting could be more than a matter of volume and void, that the picture plane could be more than a flat space for representing objects, that there could be spacial density in painting (at the same time that Einstein was formulating new concepts about space). He created this new sensation of density by painting objects (positive shapes) and the field around them (negative shapes) with the same small, brush strokes, which could be called facets of color. He painted

the entire surface in this same system, there was no longer a 'picture box' but an area filled with colorful energy. He was highly regarded by his contemporaries, but when asked the secret of success, he answered "you must study the sphere, the cone, and the cube," The statement had no relation to his own work, but was a popular edict of art teachers at the time. His work led directly to Picasso's analytical cubism.

Vincent van Gogh (1853- 90) discovered that the material with which an artist worked, the medium, could play an important role in the creative process, that it could be an element along with the other "plastic means"- color, value, texture, and line. He was the first artist to employ a heavy impasto of pigment throughout a composition. The tactile, visual, quality of the medium provided an esthetic factor to his work. He was well aware of this as is shown by the fact that before a painting was completely dry he would often press the skin of pigment to influence its shape when dry (some critics believe this happened because the paintings pressed together when stacked, not so!).

The work of these three fore bearers led Jackson to conceive of the direction his work was to take. Through his drip and pour technique he isolated Gauguin line. He created his lines by removing paint at the end of a stick from a container, suspended it in the air above his canvas, and determined its character by the height and speed by which he let it drip to the canvas on his studio floor. His entire body was involved as he worked around the canvas dripping and splashing his colors with sweeps of his arms. His was "action painting" using energy and working in space. The resulting work certainly was not a "volume and void" composition, it has the density of a Cezanne and reflects the utilization of materials as one of the essential plastic means introduced by van Gogh.

Expert Opinions:

This Painting was part of the group Shown to Ibram Lassaw who was Pollock's friend and neighbor. Lassaw was a member of the East Hampton Art Colony, and had known Pollock since the 1930s. He became a close neighbor in 1954. He writes on October 27, 1999 that both he and his wife Ernestine were very interested in the photographs of the paintings from Gabor Nemeth's collection (Pollock's Paradigm), and that "they both thought that they were genuine Pollock paintings." Mr. Lassaw had visited Pollock's studio a few weeks before the fatal accident, and states that Pollock was painting "huge canvases on the floor" at that time. He also stated that Pollock used acrylic paints! "Many artists used acrylic because it was cheaper, and Jackson used a tremendous amount of paint..." Ibram Lassaw
 "A couple of weeks before his fatal accident ... He was painting huge canvases on the floor" Ibram Lassaw

IBRAM LASSAW **STUDIO**

P.O. BOX 487 EAST HAMPTON, N.Y. 11937 (516) 324.4575

10/27/99

Dear Rudy,

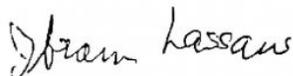
As I mentioned to you in our conversation about Jackson Pollock; a couple of weeks before his fatal accident I was visiting Jackson's studio and we had a conversation about what we were doing and about art generally, and he said he was interested in coming to my studio to watch me work. I had the intuitive understanding that he was feeling that he had to develop in the third dimension, that he was interested in doing his work in the third dimension. He was painting huge canvases on the floor but he wasn't yet "inside" his painting, and I thought he really wanted to work inside the space of the painting, as I was working inside space rather than outside of it. We talked about this interest, this need to be involved in space.

I first met Jackson in the 1930s in New York City, although we didn't work together, both Pollock and I worked on the PWP (Public Works Project) about 1934, cleaning monuments in the city. We became neighbors when I moved out to East Hampton in 1954. Around that time many artists moved to the Hamptons and several of us were within walking distance of each other's homes and studios. Many artists used acrylic because it was cheaper, and Jackson used a tremendous amount of paint... you know in those days no one had much money to spend on materials. We were all "broke".

Another old friend and neighbor was Bill deKooning. I first met Bill about 1935. We used to visit each other often and became very good friends, especially as we both had a great interest in music. Bill and I would sit for hours listening very carefully. Music was a big influence on both of us. Bill and his wife Elaine were the witnesses at our wedding and later became the god-parents of our daughter Denise. Bill and Elaine came over for dinner often- we lived within walking distance of each other.

We were very interested in the photographs you showed us of the Pollock paintings and both Ernestine and I thought they were certainly genuine Pollock's.

Best Wishes,



(Copy of this letter provided by Gabor Nemeth, 2002)



Wyoming Working Group
Researching Art and Artists of the American West

The Provenance of the Collection

In basic terms, the current theory is that these paintings were initially obtained from Pollock by Helen Rodfield, who sold them in haste to Armin Herschkowitz, who was then used the paintings to settle a debt with Gabor E Nemeth in the early 1960s. The WWG concluded that the most important facts would be to find evidence that Helen Rodfield, and Armin Herskowitz did exist, corroborating Mr. Nemeth’s story that he told consistently and on video about how he acquired the paintings.

Evidence of Armin Herskowitz’s in New York before the time in question:

This reference is from the Mormon Genealogy research database, Family Search locating Armin Herskowitz, the man who bought the paintings from Helen Rodfield and then sold them to Mr. Nemeth, was living in New York in 1920.

5/24/2017

Person Details for Armin Herskovitz, "United States Census, 1920" — FamilySearch.org

Armin Herskovitz		United States Census, 1920	
United States Census, 1920		District	ED 561
Name	Armin Herskovitz	Sheet	Number and 15A
Event Type	Census	Letter	Household
Event Date	1920	ID	691
Event Place	Manhattan Assembly District 7, New York, New York, United States	Line Number 1	
Gender	Male	Affiliate Name	The U.S. National Archives and Records Administration (NARA)
Age	29	Affiliate Publication Number	T625
Race	White	Affiliate Film Number	1197
Race (Original)	White	GS Film Number	1821197
Relationship to Head of Household	Lodger	Digital Folder Number	004966693
Relationship to Head of Household (Original)	Lodger	Image Number	01076
Birth Year (Estimated)	1891		
Birthplace	Hungary		
Immigration Year	1907		
Father's Birthplace	Hungary		
Mother's Birthplace	Hungary		
Sheet Letter	A		
Sheet Number	15		

Citing this Record

"United States Census, 1920," database with images, *FamilySearch* (<https://familysearch.org/ark:/61903/1:1:MJYG-DRX> : accessed 24 May 2017), Armin Herskovitz, Manhattan Assembly District 7, New York, New York, United States; citing ED 561, sheet 15A, line 1, family 691, NARA microfilm publication T625 (Washington D.C.: National Archives and Records Administration, 1992), roll 1197; FHL microfilm 1,821,197.

STATE: New York COUNTY: New York TOWNSHIP OR OTHER DIVISION OF COUNTY: New York City NAME OF INCORPORATED PLACE: Manhattan Borough WARD OF CITY: 7th R.D. SUPERVISOR'S DISTRICT NO. 1 SHEET NO. 15 A

DEPARTMENT OF COMMERCE—BUREAU OF THE CENSUS
FOURTEENTH CENSUS OF THE UNITED STATES: 1920—POPULATION
ENUMERATED BY ME ON THE DAY OF Jan 1920. ENUMERATOR Etzel Debs

PLACE OF BIRTH	NAME	RELATION	SEX	RACE	CITIZENSHIP	EDUCATION	FATHER			MOTHER			OCCUPATION	AGE			
							Place of birth	Native born	Place of birth	Native born	Place of birth	Native born					
274	681 Moskowitz, Lomis	wife	F	W	29	1905	2nd 1914	Eng	Poland	Eng	Poland	Eng	Poland	Cutter	Factory	W	1576
682	Saver, Joseph X	head	M	W	57	1863	1863	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1578
222	679 McCabe, Eugene J	head	M	W	30	1890	2nd 1898	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1460
	Joseph	son	M	W	26	1904	1904	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1494
	Joseph	son	M	W	24	1906	1906	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1576
	Caroline	daughter	F	W	21	1909	1909	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1578
	Patric	son	M	W	19	1911	1911	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1094
	Anna	daughter	F	W	18	1912	1912	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	11
	Patric	son	M	W	15	1915	1915	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	12
474	Bellevue, Eugene	head	M	W	41	1879	2nd 1879	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1248
	John	son	M	W	35	1894	1894	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1460
	Eugene	son	M	W	31	1909	1909	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	15
	Food	daughter	F	W	28	1912	1912	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1460
482	Edsall, Charles	head	M	W	49	1871	1871	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
	William	son	M	W	22	1908	1908	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1750
	John	son	M	W	19	1911	1911	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	10
	Walter	son	M	W	18	1912	1912	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	10
	William	son	M	W	15	1915	1915	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	10
478	Anderson, Alexander	head	M	W	48	1872	1872	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1148
	Mary	wife	F	W	41	1881	1881	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1148
	Alexander E	son	M	W	27	1905	1905	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	28
	Mary	daughter	F	W	25	1907	1907	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	28
	William	son	M	W	21	1913	1913	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	28
477	Higgins, Mary	head	F	W	53	1867	1867	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
	Robert	son	M	W	23	1908	1908	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
	Charles	son	M	W	21	1910	1910	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
	William	son	M	W	19	1912	1912	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
476	McCarthy, Mary	head	F	W	42	1874	1874	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
	Robert	son	M	W	23	1908	1908	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
	Thomas	son	M	W	21	1910	1910	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
	Thomas	son	M	W	19	1912	1912	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
	Thomas	son	M	W	17	1914	1914	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
475	Evans, John	head	M	W	43	1877	1877	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
474	Evans, Joseph	head	M	W	42	1876	1876	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
473	Evans, Joseph	head	M	W	41	1875	1875	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
472	Evans, Joseph	head	M	W	40	1874	1874	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
471	Evans, Joseph	head	M	W	39	1873	1873	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
470	Evans, Joseph	head	M	W	38	1872	1872	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
469	Evans, Joseph	head	M	W	37	1871	1871	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
468	Evans, Joseph	head	M	W	36	1870	1870	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
467	Evans, Joseph	head	M	W	35	1869	1869	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
466	Evans, Joseph	head	M	W	34	1868	1868	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
465	Evans, Joseph	head	M	W	33	1867	1867	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
464	Evans, Joseph	head	M	W	32	1866	1866	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
463	Evans, Joseph	head	M	W	31	1865	1865	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
462	Evans, Joseph	head	M	W	30	1864	1864	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
461	Evans, Joseph	head	M	W	29	1863	1863	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061
460	Evans, Joseph	head	M	W	28	1862	1862	Eng	Poland	Eng	Poland	Eng	Poland	none	none	W	1061

Evidence of Helen Rodfield in New York and around the time in question:
Below is a correspondence between JT Ravize and Harry Moses from 60 Minutes in 2010:

"JT,
Have started the research. Met with Tony Vaccaro today - a charming 89 year-old man who showed me the photographs he took of Jackson Pollock and gave me back the photographs of the paintings you had sent him some time ago. Tony said he met Helen Rodfield only once. It was at a cocktail party in the early '60s when the actress Sylvia Miles (yes the Sylvia Miles who was in "Midnight Cowboy") introduced them. Vaccaro, whose memory is frighteningly good, says it was the only time he met her, and because he know nothing of the connection between Rodfield, Pollock and Herschkowitz he did not raise the subject.

Best,
Harry"

More investigation into the initial painting purchasers would be helpful to establishment the provenance of the pieces.