

7-2007

## 'I am Nature': Science and Jackson Pollock

Michael Schreyach

Trinity University, mschreya@trinity.edu

Follow this and additional works at: [https://digitalcommons.trinity.edu/art\\_faculty](https://digitalcommons.trinity.edu/art_faculty)



Part of the [History of Art, Architecture, and Archaeology Commons](#)

---

### Repository Citation

Schreyach, Michael. "I am Nature': Science and Jackson Pollock," *Apollo: The International Art Magazine* (July 2007), 35-43.

This Article is brought to you for free and open access by the Art and Art History Department at Digital Commons @ Trinity. It has been accepted for inclusion in Art and Art History Faculty Research by an authorized administrator of Digital Commons @ Trinity. For more information, please contact [jcostanz@trinity.edu](mailto:jcostanz@trinity.edu).

# 'I AM NATURE'

## SCIENCE AND JACKSON POLLOCK



An attempt has been made to determine the authenticity of some newly discovered paintings that may be by Jackson Pollock on the basis of a belief that his art incorporates fractal patterns seen in the natural world. This is only the latest in a long line of interpretations of his works in terms of references to nature, as **Michael Schreyach** discusses.

**F**or some viewers, certain features of Jackson Pollock's drip paintings of around 1947-50 result in an acute sense that arbitrary divisions – like those imagined to exist between the beholder and a work of art, product and process, or even between a delimited pictorial field and the larger environment – have broken down. One aspect of the radical breakthrough often attributed to these works is a reduction of the distance traditionally maintained between the consumption of art objects and the experience of extra-artistic processes or events.<sup>1</sup> Perhaps the most significant instance of such categorical collapse in regard to Pollock's work concerns the classic opposition between 'Nature' and 'Art'. Standing before such paintings as *Lavender Mist* (1950) or *Autumn Rhythm* (1950; Fig 2) it becomes extremely difficult to maintain the kinds of

The works illustrating this article are by Jackson Pollock (1912-56) unless stated otherwise. <sup>1</sup> Pollock outside his Long Island studio, photographed by Hans Namuth (1915-90). Photo: © Hans Namuth





'modernist' distinctions between an instantaneous apprehension of optical fact and the temporal duration often associated with art and nature respectively.<sup>2</sup> The titles of many works hint at a reservoir of reference that is tied to the natural world: in the case of the paintings mentioned, to atmospheric conditions or to seasonal cycles.

Additionally, Pollock's technique itself prevents the secure separation of art from nature. It is difficult to discriminate Pollock's technical mastery of art materials (his automatic or habitual following of, or modifications to, painterly conventions) from his natural spontaneity (his instinctive responsiveness to the demands of the medium).<sup>3</sup> Instead of immediately seeing Pollock's deliberate craft – his careful, even mechanical, ordering of means to ends – a viewer encounters a visual field that appears to provide an experience similar in kind to that of a natural environment. Perceptual experience overwhelms appreciation of technique. Arguably, it is exactly this elision of art and nature that has contributed to the pervasive understanding of Pollock as the best representative of that momentous historical shift, admirably detailed by M.H. Abrams, from the view 'that the making of a work of art is a supremely purposeful activity' to the view 'that its coming-into-being is, basically, a spontaneous process independent of intention, precept, or even consciousness'.<sup>4</sup> Pollock is an artist whose work has come to symbolise an acute form of this essentially natural or 'organic' aesthetics.

This is an identification that has become a truism in Pollock studies, and not without reason.

A recollection of Lee Krasner's provides a dramatic origin for it: responding to Hans Hofmann's admonition that he should paint from nature, Pollock supposedly retorted, 'I am nature'.<sup>5</sup> The exclamation is often taken at face value. Pollock's relation to 'nature' is a pervasive theme in the interpretation of his work. Art historians, critics and the public alike frequently think of Pollock as an artist connected to nature on at least three counts. First, his personality (his individual nature) is considered to be intimately attuned to the natural world. Such an assumption is partly due to the persistence of romantic notions of artistic temperament in western culture. On these terms, the artist stands interposed between the external world of sense and the work of art, and may convey this intimate association with nature to properly conditioned viewers.

This is a central legacy of Pollock's immediate artistic heritage. But perhaps more immediate sources for this idea are popular images of Pollock, such as those taken in 1950 by Hans Namuth (Figs 1 and 3), which show the artist, either animal-like in his dance around his canvases, or else with brow wrinkled in pensive furrow, at home in the high grasses outside of his studio in the Springs on Long Island, where he and Krasner had moved in 1942. Here mention could also be made of the unattributed snapshot (of around 1927-28) of Pollock in full cowboy gear (Fig. 4), with a low-slung pistol on his hip. Pollock highlighted his period of 'knock[ing] around' California and Arizona and his 'feeling for the [vast horizontality of] the West'.<sup>6</sup>

**2 *Autumn Rhythm*  
(Number 30), 1950.**

Enamel paint on canvas,  
266.7 x 525.8 cm.  
Metropolitan Museum  
of Art. © The Pollock-  
Krasner Foundation/  
Artists Rights Society,  
New York. Photo: SCALA

I would like to thank Michael Golec for his comments on a draft of this essay, and Elissa Calfin for her research assistance.

<sup>1</sup> This distinction has played an important role in the field of Pollock studies since Allan Kaprow began in the late 1950s to contest what many assumed to be the modernist evaluation of Pollock as the latest representative of painting driven to 'purity' (a view commonly associated with Clement Greenberg and Michael Fried). In contradistinction, see Allan Kaprow, 'The Legacy of Jackson Pollock', *Art News*, vol. LVII, no. 6 (October 1958), pp. 24-26; 55-57.

<sup>2</sup> The classic statement on modernist temporality is often linked to the criticism of Clement Greenberg, who associated the relation of viewer and artwork with a mode of temporality foreign to critics such as Kaprow and Harold Rosenberg. See Clement Greenberg, 'The Case for Abstract Art' [1959], in John O'Brian, ed., *Clement Greenberg: The Collected Essays and Criticism*, four vols., Chicago and London, 1993, volume 4, pp. 75-84.

<sup>3</sup> On this distinction, see Richard Shiff, *Cézanne and the End of Impressionism: A Study of the Theory,*





Second, Pollock's process after 1948 of dripping paint onto a horizontally placed canvas has been understood as more 'direct', and hence more natural, than conventional modern painting techniques. Pollock's working methods and techniques, as they developed through the 1940s, increasingly rejected conventions of European modernism, particularly those associated with cubism. Those technical innovations were subsequently seen not merely as unconventional, but as 'wild' (hence natural). The drip technique allowed Pollock to work on his canvases from all four sides, and therefore to be more direct (to

**3 Pollock painting *One: Number 31*, 1950, photographed by Hans Namuth (1915-90). Pollock's *Number 1*, 1949 hangs on the wall to his right. Sunlight hits Pollock's head. In the upper left corner a small window opens on the grass outside. Photo © Hans Namuth**

literally be 'in the painting' as he himself put it) than he would otherwise have been if utilising standard techniques.<sup>7</sup>

Interestingly, some analysts have also associated this directness with a child-like naïveté, positioning Pollock as an artist who overcomes (or is able to circumvent) those habits of technical proficiency which are the result of artistic training. As a result, his drip works appear on co-equal terms with the natural, spontaneous scribbling of children (Fig 5).<sup>8</sup> Finally, Pollock's paintings themselves are frequently taken to be connected, imagistically or emotively, to nature. Either the paintings contain images





abstracted from some natural scene (think of his 'Accabonac Creek' series; *Galaxy*; and *Summertime*), or the paintings convey the sense or mood of natural phenomena (think of the 'Sounds in the Grass' series; *Croaking Movement*; and *Lavender Mist*). A powerful example of the early art-cultural sanction of this connection was provided by *Art News Annual*, which printed a photograph of the artist painting *Number 32, 1950* next to a picture of flowering marsh grasses for an essay by Parker Tyler (Fig 6).<sup>9</sup> Through visual analogy, the magazine spread encouraged readers to associate the painting and the natural scene, potentially eliding the difference between natural and artificial phenomena. What is interesting is that the co-appearance of such disparate realms (a painting and a grass field) hardly seems strange: indeed, the comparison comes across as entirely expected, even 'natural'. Juxtaposition becomes conjunction, or even identification. Such familiarity only demonstrates the extent to which we have come to understand Pollock as a modern 'nature painter'.

Estimations of the relation of Pollock's paintings to nature have continued to play out in the critical literature, in the public imagination, and even in scientific discourse. The relevance for Pollock studies of these concerns has been highlighted by the recent discovery of 24 paintings, putatively by Pollock and previously unknown, and the attendant interest in the possible scientific verification of their

authenticity. In 2007, the long-awaited exhibition 'Pollock Matters' is scheduled to open at the McMullen Museum of Art at Boston College.<sup>10</sup> The show will include work by Lee Krasner, Mercedes Matter and Herbert Matter, but it will showcase many, if not all, of the 24 paintings found in 2002 by Alex Matter in his parents' storage facility in Wainscott, New York. No small amount of media attention has been focused on this group of paintings, with good reason. The discovery of such a large cache of previously unknown works by a major artist is the stuff that auction-house dreams are made of: the market value of the set promises to be in the millions, if the 2004 sale of Pollock's *Number 12, 1949* – a painting only 79 x 57 cm – for \$11.655m is to be any indication.<sup>11</sup> Moreover, the extension of the existing body of work (should any or all of the works be authenticated) would provide a significant platform for a scholarly review of Pollock's early experimentation with the drip technique.

As with any new discovery, however, there are sceptics. The argument about the authenticity of Matter's paintings is continuing, but it reached something of a high point in February 2006, after the *New York Times* ran an article by Randy Kennedy covering research conducted by Richard P. Taylor, a physicist at the University of Oregon – research that, if correct, would dispute the authenticity of the paintings on the basis of fractal geometry.<sup>12</sup> Taylor's work focuses on discerning 'fractal patterns' (more on this below) in Pollock's drip paintings, and measuring their degree of 'fractal dimension'. Although Taylor did not come to a final conclusion regarding Matter's paintings, he is so confident about his method of technical analysis that he has claimed that he can date authentic Pollock's to the year in which they were made.<sup>13</sup> The *New York Times* article came out on the day that Taylor's findings were summarised in the science journal *Nature*.<sup>14</sup>

Although Taylor was not paid by the Pollock-Krasner Foundation, which approached him for his unique expertise and commissioned the study, his high-profile views on Pollock were published just two weeks in advance of the first public presentation of art-historical scholarship on Matter's paintings by Ellen Landau, a leading Pollock scholar, who delivered some of her findings at the 2006 College Art Association meeting in Boston, in a session called 'Jackson Pollock's Afterlife' (the session was chaired by my colleague Todd Cronan and myself).<sup>15</sup> Landau's art-historical argument centred on the relationship between Pollock and Herbert Matter, whose photographic practice Landau convincingly related to some of Pollock's working methods. The argument for authenticity based on art-historical inquiry stood in

4 Pollock in cowboy dress, photographed c. 1927-28. Reproduced from K. Varendoe, *Jackson Pollock*, New York, 1999, p. 316

*Technique, and Critical Evaluation of Modern Art*, Chicago, 1984, pp. 14-20.

4 M.H. Abrams, *The Mirror and the Lamp: Romantic Theory and the Critical Tradition*, London, 1953, p. 157.

5 Lee Krasner, 'Interview with Bruce Glaser' [1967], in K. Varendoe and P. Karmel, eds., *Jackson Pollock: Interviews, Articles, and Reviews*, New York, 1999, p. 28.

6 Jackson Pollock, 'Jackson Pollock: A Questionnaire' [1944], in K. Varendoe and P. Karmel, op. cit., p. 15.

7 Jackson Pollock, 'My Painting' [1947-48], in K. Varendoe and P. Karmel, op. cit., p. 18.

8 See Jürgen Weber, *The Judgment of the Eye: A Further Development of Gestalt Psychology*, New York, 2002, p. 120. On the idea of the child-like in modern art, see Richard Schiff, 'From Primitivist Phylogeny to Formalist Ontogeny: Roger Fry and Children's Drawings', in Jonathan Fineberg, ed., *Discovering Child Art: Essays on Childhood, Primitivism, and Modernism*, Princeton, 1998, pp. 157-200.

9 The photograph was taken by Rudy Burckhardt. See Parker Tyler, 'Hopper/Pollock', *Art News Annual*, vol. xxvi (1957), pp. 92-93.

10 After the McMullen Museum opening, the exhibition is scheduled to travel to the Everson Museum of Art in Syracuse, New York. For updated information on the exhibition schedule, readers should refer to the official website, [www.pollockexhibit.com](http://www.pollockexhibit.com).

11 This was at the time the auction record for a Pollock and was the top lot at the sale at Christie's New York, May 11, 2004. See [www.artnet.com/magazine/news/artmarketwatch2/artmarketwatch5-12-04.asp](http://www.artnet.com/magazine/news/artmarketwatch2/artmarketwatch5-12-04.asp).

12 See Randy Kennedy, 'Computer Analysis Suggests Paintings Are Not Pollocks', *New York Times*, Arts, February 9, 2006. The issue has become even more complicated since January 29, 2007, when a report released by the Harvard University Art Museums, based on a year-long study, implied that Matter's paintings could not have been made by Pollock, since they include pigments that were not commercially available until some years after the artist's death in 1956. See Harvard University Art Museums, 'Technical Analysis of Three Paintings Attributed to Jackson Pollock', available on-line at [www.artmuseums.harvard.edu/home/HUAMreport012907.pdf](http://www.artmuseums.harvard.edu/home/HUAMreport012907.pdf). For the response to the HUAM report by the organisers of the Pollock Matters exhibition, see [www.pollockexhibit.com](http://www.pollockexhibit.com); for that of



**5 Pollock's work compared with examples of children's drawings, from Jürgen Weber, *The Judgement of the Eye: the Metamorphoses of Geometry, One of the Sources of Visual Perception and Consciousness*, New York, 2002, p. 120**

the Pollock-Krasner Foundation.; see [www.pkf.org/press.html](http://www.pkf.org/press.html).

**13** He did, however, find 'significant deviations' from Pollock's other works. Quoted in Alison Abbott, 'In the Hands of a Master', *Nature*, no. 439, February 9, 2006, p. 648. According to Taylor, fractal analysis 'could be used as a quantitative, objective technique to validate and date Pollock's drip paintings'. See R.P. Taylor, et. al., 'Fractal Analysis of Pollock's Drip Paintings', *Nature*, no. 399, June 3, 1999, p. 422.

**14** See Abbott, op. cit., pp. 648-650.

**15** The other participants in the session were Claude Cernuschi, Margaret Holbein Ellis, Peggy Phelan, and Lisa Frye Ashe.

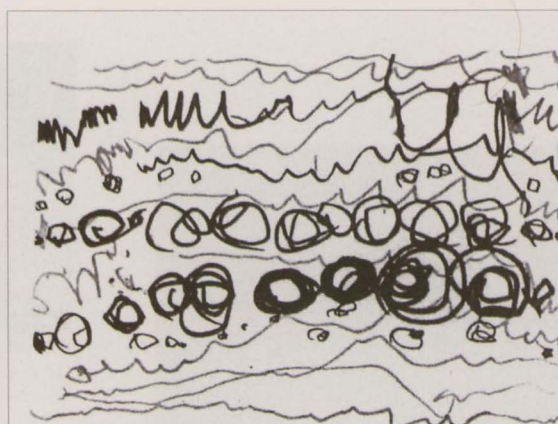
**16** Abbott, op. cit., p. 650.

**17** Among Taylor's numerous articles on the subject are 'The Use Of Science To Investigate Jackson Pollock's Drip Paintings', *Journal of Consciousness Studies* vol. VII, no. 8-9, 2000, p. 137; 'Order in Pollock's Chaos', *Scientific American*, December, 2002, p. 116; 'Perceptual and Physiological Responses to the Visual Complexity of Pollock's Fractal Dripped Patterns', *The Journal of Non-linear Dynamics, Psychology, and Life Sciences*, vol. IX, no. 115 (2005). For a refutation of Taylor's method of fractal analysis, see Katherine Jones-Smith and Harsh Mathur, 'Fractal Analysis: Revisiting Pollock's Drip Paintings', *Nature*, no. 444, November 30, 2006; Taylor's response may be found in the same issue, published on-line at [www.nature.com/nature/journal/v444/n7119/abs/nature05398.html](http://www.nature.com/nature/journal/v444/n7119/abs/nature05398.html), and, most recently, 'Authenticating Pollock Paintings Using Fractal Geometry', *Pattern Recognition Letters Archive*, vol. XXVIII, no. 6 (April, 2007), pp. 695-702.

**18** R.P. Taylor, et. al., 'Fractal Analysis of Pollock's Drip Paintings', op. cit., p. 422.

**19** R.P. Taylor, 'Fractal Expressionism', *Physics World*, vol. XII, no. 10, 1999, pp. 25-28; 28.

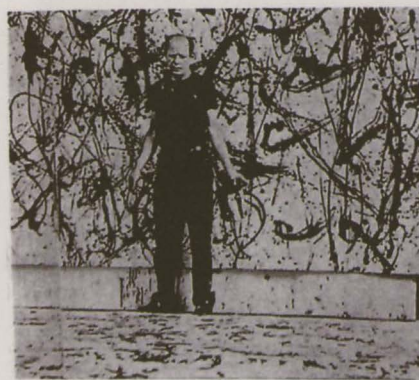
**20** R.P. Taylor, et. al., 'The Visual Complexity of Pollock's Dripped Fractals'. Although I was not able to obtain a hard-copy citation, this essay is available for viewing at [materialsscience.uoregon.edu/taylor/](http://materialsscience.uoregon.edu/taylor/)



18 Lotte, 2



19 Lotte, 2



20 Pollock



21 Lotte, 2

stark contrast to that proposed by Taylor, who – although he does not dismiss the value of provenance, connoisseurship and material analysis – primarily examined the works in terms of their exhibition of fractal patterns identical to those found in nature.<sup>16</sup>

An expert on fractals, Taylor has presented his scientific analysis of Pollock's works repeatedly since the late 1990s.<sup>17</sup> Essentially, Taylor argues that Pollock's dripped paintings exhibit natural fractal patterns. A fractal, understood in its traditional mathematical sense, is a curve having the specific property that any small part of the curve, when enlarged, will exhibit the same statistical character as does the whole curve. In other words, fractals have a consistent geometric property evident on different scales or magnifications. The property that is defined on the smallest scale, or the highest magnification, will resemble (although it need not be identical to) the property found on larger scales. Fractal patterns, then, may be discerned by taking note of such repetition at various scales. Natural objects such as tree branches, rivers, and coastlines, all exhibit some degree of fractal pattern.

In 'The Fractal Analysis of Pollock's Drip Paintings', written with two colleagues, Taylor

clarifies that fractals consist of patterns that recur or repeat on finer and finer scales. One way to quantify the visual complexity of fractal patterns is its fractal dimension, or D. This is a number that ranges from 1 to 2; the higher the number, the more complex the fractal pattern. To quantify the fractal dimension of some of Pollock's paintings (the article reproduces Pollock's *Alchemy* of 1947, although it is otherwise unclear what specific paintings were studied), a scanned image of the work was covered with 'a computer-generated mesh of identical squares'.<sup>18</sup> Additional 'meshes' varied in density, and were applied in order to obtain the D value at different magnifications. Thus, the paintings were covered with multiple grids containing an increasing number of squares, ranging in sizes from that of the whole canvas to that of the finest paint work (about 1 mm square). By counting, at different grid-intervals, the squares within which part of the painted pattern was visible, the scientists arrived at the D value of each painting. This is the so-called 'box-counting method'. The D values for the set of paintings studied ranged from 1.3 to 1.9. Because the D values of Pollock's works increase from low to high over a period of 10 years, Taylor's team concluded that the increase in complexity was not





Flowering marsh grass

Jackson Pollock at work, 1950

social rhythms exercised by moral consciousness and psychic sympathy—Hopper portrays the Loneliness of the Crowd.

**POLLOCK**

Whether Pollock's fluent calligraphy of paint whorls and threads (proliferating from between voids as plants do from between rocks) be based on the human figure or on itself, it possesses the darting and continuous energy of the forces circulating around, through and in all substances, whether skyscraper, planet or human being. Thus, even when "static" or relatively inert features appear—like the crawling poles staggered across *Number 21*, 1952 (page 181)—they seem in motion like fixed or inertial things attacked by wind or water. In time, the figure of a woman emerged as the black and white phantom of a wooden-like sexuality (page 102); she was destined to disappear as though given in death to a field of rising grasses. As seen clearly and climactically in one of his last works, *Some* (page 97), his emulation of wall graffiti progressively sublimated to a pattern of line and impasto so extravagant that both image and wall were lost. In so totally reducing visual expression to a washed-out, self-contained interaction of pure intangibles—regardless of the principle of human variety and the drama of human situations-of-identity—Pollock portrays the Loneliness of the Universe.

**HOPPER**

Hopper's space is penetrable only (literally; symbolically, it is impenetrable). As objectively stated as possible in his or early light whose luminosity creates strict vertical separations of shadow, his

accidental: it demonstrates Pollock's increasing mastery of the drip technique itself.

Taylor holds that Pollock's drip paintings, because they contain fractal patterns, exemplify natural properties: '[Pollock] described nature directly. Rather than mimicking it, he adopted the language of nature – fractals – to build his own patterns'.<sup>19</sup> What explains viewers' appreciation of Pollock's drips? In another article, 'The Visual Complexity of Pollock's Drip Fractals', written with three colleagues, Taylor suggests that these patterns have an 'aesthetic quality based on [their] visual complexity'.<sup>20</sup> Because we see them in nature, we are pleased when we see fractals in art. Perhaps a basic, biological predisposition to these pleasing patterns explains, precisely, what it means when we say that Pollock's paintings have an aesthetic quality: Taylor goes so far as to assert that a 'fractal aesthetics' would explain the 'fundamental content' of Pollock's work.<sup>21</sup>

A key point in Taylor's article comes when he repeats the well-known story of Pollock's move to the Springs in 1945. In this re-telling of Pollock's return to nature, Taylor relates 'the many hours that Pollock spent on the back porch of his new house, staring out at the countryside as if assimilating the

natural shapes surrounding him.'<sup>22</sup> An illustration accompanies the anecdote, showing a photograph of Pollock's house, where the artist was 'surrounded by the complex patterns of nature'; it is juxtaposed with three smaller images showing the fractal patterns of tree branches (Fig 7).<sup>23</sup> What is at stake in this analysis? For Taylor, it seems nothing less than identifying, once and for all, the grounding reference of the abstract drip paintings. The scientist intends to rectify what to his view is the impoverished situation of Pollock scholarship, where 'despite the millions of words written about [the artist], the *real meaning* behind his infamous swirls of paint' has remained inscrutable.<sup>24</sup> Science will – assertively, it seems – rectify this situation. Taylor's website boasts: 'After fifty years of debate, the answer to Modern Art's greatest question has been delivered from an unexpected source – science.'<sup>25</sup> Exactly what this question is, or why answering it matters, is, however, left implicit.

Taylor's work reflects a broader interest in explaining how the perceptual effects of Pollock's works are grounded in natural phenomena, including the experience of our bodies' naturally adaptive responses to stimuli in the environment. Writing on Pollock is often characterised by a

**6 A photograph by Rudy Burckhardt of Pollock at work compared to flowering Marsh Grass, from *Art News Annual*, volume XXVI (1957), pp. 92-3**

art/Taylor/CCS2002.pdf (accessed May 30, 2007); it appears as entry number 16 on Taylor's on-line bibliography: <http://materials.science.uoregon.edu/taylor/art/info.html>. The ICCS program can be found at <http://neci.org/events/ics/ics4program.html>, where it appears that Taylor's paper was originally called 'The Discovery of Fractals in Jackson Pollock's Paintings: Implications for the Visual Sciences'.

<sup>21</sup> R.P. Taylor, et al., 'Fractal Analysis Of Pollock's Drip Paintings', op cit., p. 422.

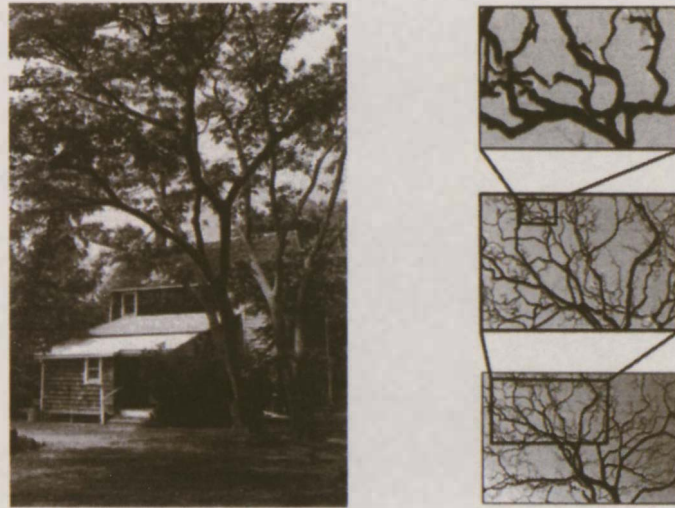
<sup>22</sup> R.P. Taylor, et al., 'The Visual Complexity of Pollock's Dripped Fractals', op. cit. p. 1. Here, Taylor is relying on testimony given by J. Potter, *To a Violent Grave: An Oral Biography of Jackson Pollock*, New York, 1985.

<sup>23</sup> The same illustration is Figure 1 in R.P. Taylor, et al., 'Perceptual and Physiological Responses to the Visual



concern to elide the difference between the effects of the artist's work and the experience of natural phenomena. This equation sometimes takes the form of an analogy between principles of 'artistic creation' and the productive principles of nature; at others, between the formal characteristics and features of a painting and those proper to natural phenomena. What is the root of this drive? Perhaps it is the common discomfort or difficulty involved in tying abstract art to a referent of some sort. In the absence of recognisable subject matter, conventional approaches to interpreting the meaning of pictures falters; the incommensurability of description to content when considering abstract art produces anxiety. Linking Pollock's paintings to nature is a way to ground interpretation. The interpretative strategy seems to divulge the meaning of this particularly recalcitrant art: taken as either a depiction of nature, or an exemplification of nature's productive principles, a painting such as *Autumn Rhythm* attains a certain security of reference.

Scientific interest in Pollock, such as that exemplified by Taylor, is no isolated instance: there is a historical context for this type of analysis. Two instances, roughly contemporary with the surge of interest in Pollock after his death in 1956, will have to serve as an introduction to this wider context. Firstly, in 1957, the gestalt psychologist Rudolf Arnheim employed a box-counting method of his own to contest the idea that Pollock's works exemplify anything like the complex, natural patterns later identified in Taylor's studies. That year, Arnheim had joined the art historian Meyer Schapiro at the annual meeting of the American Federation of Arts in Houston, Texas. The conference featured speakers who addressed the issue of abstract art; in particular, participants discussed the cultural value of 'spontaneity' in artistic expression.<sup>26</sup> While Schapiro famously found abstract art to be characterised by a 'liberating quality', owing to various hand-made, material features that indexed freedom, Arnheim worried that artists (and their critics) afforded too much credit to chance, or 'automatism' (a catch-all phrase referring to the battery of accidental techniques that by the 1950s were broadly believed to aid the artist in producing the very kinds of material configurations sponsored by Schapiro). Mere chance or accident, for Arnheim, was opposed to true spontaneity, which requires some measure of intent, recognised through the artist's procedures of ordering his means. What troubled the psychologist about contemporary abstract painting, such as Pollock's, was its apparent lack of spontaneity: its seeming eschewal of order and complexity. He wanted to preserve an understanding of the artist



**Figure 1.** Left: Pollock's house on Long Island. In contrast to his previous life in Manhattan, Pollock perfected his drip technique surrounded by the complex patterns of nature. Right: Trees are an example of a natural fractal object. Although the patterns observed at different magnifications don't repeat exactly, analysis shows them to have the same statistical qualities (photographs by R.P. Taylor).

**7 Pollock's house shown next to fractals in trees, from R.P. Taylor, et al., 'The Visual Complexity of Pollock's Dripped Fractals', materialsience.uoregon.edu/taylor/art/TaylorIACS2002.pdf**

Complexity of Pollock's Dripped Fractal Patterns', *Journal of Non-Linear Dynamics, Psychology, and Life Sciences*, vol. IX, no.15 (2005).

**24** R.P. Taylor, et. al., 'The Visual Complexity of Pollock's Dripped Fractals', op. cit., p. 2 [emphasis added].

**25** R.P. Taylor, faculty website, <http://materialsience.uoregon.edu/taylor/art/splash.html> (accessed May 30, 2007).

**26** See Rudolf Arnheim, 'The Artist Conscious and Subconscious: A Psychologist Looks at Inspiration', *Art News*, vol. LVI, no. 4 (1957), pp. 31-33. This article is a transcript of the address Arnheim gave at the AFA. A transcription of Meyer Schapiro's address, 'The Liberating Quality of Avant-Garde Art' appeared in the same issue, pp. 36-42 [reprinted as 'Recent Abstract Painting' in Meyer Schapiro, *Modern Art: 191b and 201b Centuries: Selected Papers*, New York, 1978, pp. 213-26].

**27** Arnheim, op. cit., p. 32.

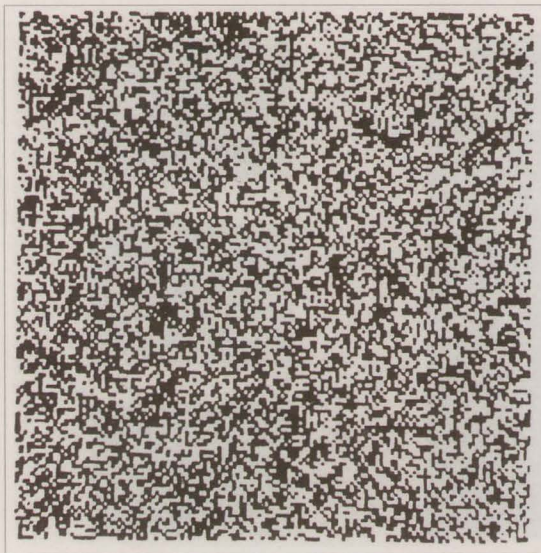
**28** Rudolf Arnheim, 'Accident and the Necessity of Art' [1957], *Towards a Psychology of Art: Collected Essays*, California, 1966, pp. 162-180; 172. Although he does not explicitly refer

as actively ordering the manifold possibilities of any medium towards some end.<sup>27</sup>

In his lecture and a subsequent essay based on it, Arnheim argued that his concept of order and complexity in art did not apply to an artist such as Pollock, whose paintings demonstrated only the features of a random statistical pattern.<sup>28</sup> Careful to draw a distinction between 'order' and 'disorder' (the latter term refers not to the absence of all order, but to the simultaneous existence of clashing, uncoordinated orders), Arnheim did not simply claim that Pollock's works were just chaotic and disorganised. Rather, he argued that they lacked any apparent degree of intelligible order: they seemed *orderless*.

To make his point, Arnheim compared Pollock's work to a grid created by Fred Attneave, a psychologist studying the theory of visual information. Attneave divided a square into nearly 20,000 tiny squares, each one – as determined randomly by a table of numbers – either coloured black or left white (Fig 8). Thus, the overall grid of black and white squares was absolutely non-redundant (each of the squares was coded by information that applied strictly to it and to no other square). Thus, no pattern, no order, could be said to obtain. This is what Arnheim found in Pollock. In comparison with the Attneave diagram, Arnheim reproduced Pollock's *Number 1A, 1948*. In the psychologist's view, Pollock's painting, like Attneave's random grid, neglected the intentional production of relationships between pictorial elements and thus could yield no 'essence' of the





**8 'Figure 15' (a random field by Fred Attneave), from Rudolf Arnheim, 'Accident and the Necessity of Art', in *Toward a Psychology of Art* (1994 edition), p. 171**

to Schapiro in his essay, Arnheim's argument seems to address the issues raised by Schapiro at the AFA meeting in Houston earlier that year and published that summer as 'The Liberating Quality of Avant-Garde Art' (op. cit.).

**29** This remark was made in 1951. That year, the Institute of Contemporary Art in London organised an exhibition 'Growth and Form', intended – interestingly – as a tribute to one of Pollock's favourite authors, the biologist D'Arcy Wentworth Thompson. In conjunction with the exhibition, Lancelot Law Whyte, a physicist and philosopher associated with the ICA, edited a volume of essays devoted to investigating the relation between natural and artistic form. It is here that Arnheim first laid the foundations for his later critique of Pollock. See Rudolf Arnheim, 'Gestalt Psychology and Artistic Form' [1951], in L.L. Whyte, ed., *Aspects of Form: A Symposium on Form and Nature in Art*, Bloomington, IN, 1961, pp. 196-208.

**30** See G. Schmidt and R. Schenk, eds., *Kunst und Naturform/Form in Art and Nature*, Basel, c. 1960.

**31** Willy Jäggy, 'Foreword', in G. Schmidt and R. Schenk, eds, op.cit., p. 8.

**32** This comparison can be seen in Taylor's 'Splashdown' section of his website at <http://materialsience.uoregon.edu/taylor/art/splash.html> (accessed May 30, 2007).

**33** See *Emerging Infectious Diseases*, vol. xi, no. 9, September, 2005. An article by Polyseni Potter, 'Oneness, Complexity, and the Distribution of Disease', which tries to explain the anomalous inclusion of this painting, appears on pp. 1500-01, and may be downloaded at [www.cdc.gov/ncidod/EID/vol11no09/about\\_cover.htm](http://www.cdc.gov/ncidod/EID/vol11no09/about_cover.htm). It is relevant to note that Potter's article claims to reproduce a detail of *Autumn Rhythm*, and credits the copyright to the Metropolitan Museum of Art. However, what is actually shown is a detail from the upper left corner of *Lavender Mist* – an entirely different painting, of course. This is merely one of many examples demonstrating a general incapacity (or unwillingness) to handle works by Pollock in their particularity.

**34** Potter's description closely follows that of Taylor in 'The Visual Complexity of Pollock's Dripped Fractals', pp. 1-2, op. cit., which Potter does indeed cite. Cf. note 23 above.

whole. It certainly could have no natural referent. The problem with Pollock, as Arnheim earlier wrote, was that his seemingly homogeneous paintings were 'inarticulate, plain, motionless... [like] the chilled universe... at the end of time'<sup>29</sup> – hardly a description of a full, healthy and human experience in natural surroundings.

A second instance: in 1958, a curious effort to ground the meaning of Pollock's work in reference to natural phenomena took the form of an exhibition that paired abstract paintings with electron microphotographs. To celebrate its bicentenary, J.R. Geigy S.A., a firm specialising in microbiology, organised an exhibition at the Kunsthalle, Basel entitled 'Kunst und Naturform' – 'Form in Art and Nature'.<sup>30</sup> The exhibition's theme was the apparent correspondence between the forms of abstract art and forms seen by a scientist under a microscope. A guiding assumption was the idea that abstract paintings were indeed identical in structure to natural forms, albeit on different scales. Paintings were shown alongside pictures of organic cellular structure or inorganic matter (close-ups of fibres or crystals for example). The organisers intended to raise a viewer's awareness that 'the forms used by artists who had apparently turned their backs on nature were in fact to be found in nature itself'.<sup>31</sup>

The strategy of reproducing abstract art beside microphotographs created some striking juxtapositions. Georges Braque's *Paysage à l'Estaque* (1908) is compared to the surface structure of aluminum at a magnification ratio of 39,000:1. Piet Mondrian's *Composition Number 7* (1914) is found to appear strangely similar to copper-aluminum alloy, with a texture of casting, ground and polished, and etched with ferric nitrate. Some Matisse cut-outs of plant forms from 1947 resemble an enlarged picture of the human

cerebellum with nissl staining, and Hans Arp's *Configuration* (1928) looks like a motor cell from the human anterior spinal cord. Finally, Pollock's *Cathedral* (1947) is paired with glia cells of the human cerebral cortex with golgi staining, enlarged at 500:1 (Figs 9 and 10).

The amusing shock of these comparisons quickly converts to annoyance: their transparency somehow stifles critique. Does it really need to be argued that Pollock's works are nothing like enlargements of cellular structure? Perhaps it does, if the perpetuation of such specious 'parallels' is to be countered when it occurs. On his website, for instance, Taylor replicates – intentionally or not – the Geigy strategy of comparison. He sets Pollock's *Number 32, 1950* (the reproduction is severely cropped, showing only about 60% of the surface of the actual painting) next to a close-up of tree roots, which fill the frame of the digital photograph; and he likens *Full Fatbom Five* (also cropped, and inexcusably reproduced on its side) to an obvious oceanic referent, a picture of a mass and tangle of seaweed.<sup>32</sup> Recently, the Centers for Disease Control and Prevention featured a reproduction of Pollock's *Autumn Rhythm* on the cover of an issue of *Emerging Infectious Diseases*.<sup>33</sup> Explaining this choice, Polyxeni Potter notes that 'disease distribution follows the complex, repetitive, and cumulative patterns of nature'; patterns that are stamped, like Pollock's paintings, with 'nature's fingerprint as seen from [the artist's] back porch in East Hampton'. Is it predictable that on this point Potter would parrot Taylor?<sup>34</sup>

To connect Pollock to nature promises to secure reference in something seemingly tangible and concrete. But the type of connection – and here I have focused on the scientific, or literal, as opposed to the metaphoric, which has just as many (if not considerably more) problems – is of less importance than what such attempts reveal about our continuing struggle with the meanings of each of Pollock's paintings. Here it is crucial to stress 'each', because too often the unique, material characteristics of the individual works are de-emphasised, or perhaps unconsciously suppressed (witness the casualness with which reproductions of Pollock's paintings are often handled: mistitled, or printed upside down or reversed). We begin to speak about 'Pollocks' rather than about *Autumn Rhythm* or *Lavender Mist* – two paintings that any viewer would be compelled to concede have incontestably dissimilar material features, and thus divergent perceptual effects. This situation might lead to the erroneous assumption that all the paintings have, in the end, the same meaning.

Driving a work back to its most elementary constituent (such as a fractal pattern, or a cellular





structure as revealed by microphotography, or a child's basic motor pattern as revealed through scribbles, or even a pattern of disease spread), and subsequently identifying that constituent as the basis upon which we should build our understanding of all of Pollock's paintings, seems to accomplish the interpretative work begun even in the artist's own time under the guise of scientific fact. And as such, the method seems to 'solve' problems of reference. But what it does not do is recognise the possibility that it is precisely these problems that sustain repeated engagements with

**9** *Cathedral*, 1947. Enamel and aluminium paint on canvas, 181.61 x 89.06 cm. Dallas Museum of Art © Pollock-Krasner Foundation/Artists Rights Society, New York  
**10** 'Glia cells of the human cerebral cortex', from G. Schmidt, et al., *Kunst und Naturform*, Basel, c. 1960, p. 122

Pollock's achievement in the first place. So why does it seem so imperative to solve them? Perhaps we have a deep discomfort with the seemingly endless task some abstract painting demands from us: a continual, vigilant investigation of our own culture's relation to 'nature'. This nature, after all, might not easily be mastered, even when we can quantify and contain it within scientific (or humanistic) discourse.

Michael Schreyach is a lecturer in the Department of Art History at the University of Southern California in Los Angeles.