

POLIS V12: The Complete Art History Series – 12 Giants

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May 2026

*This document combines two companion papers:
“Tensional Reinterpretation of Six Founders of Modern Art”
and “Tensional Reinterpretation of Six More Artistic Pioneers”.*

DOIs: Main treatise [10.5281/zenodo.19618276](https://doi.org/10.5281/zenodo.19618276) – POLIS Bible
[10.5281/zenodo.19836226](https://doi.org/10.5281/zenodo.19836226)

Abstract

Within the POLIS V12 tensional ontology, every artwork is a polis constituted by three meshes (solid, liquid, gaseous) and governed by the closure condition $\epsilon = \sum K_m(2 + K_m) = 0$, with $T = K_{\min}$ as the tensional origin. This paper applies the framework to six foundational figures of art history: Giotto (perspective and naturalism), Leonardo da Vinci (sfumato and anatomy), Michelangelo (contrapposto and the sublime), Rembrandt (light and psychology), J. M. W. Turner (atmosphere and colour), and Paul Cézanne (structural form). Each classical contribution is reinterpreted as a tensional configuration: Giotto's perspective as depth K ; Leonardo's sfumato as gradient smoothing; Michelangelo's unfinished works as Phase 4 explosions; Rembrandt's chiaroscuro as K contrast; Turner's light as gas mesh dynamics; and Cézanne's cylinders as solid mesh reduction. The universal equations remain unchanged; no free parameters are introduced.

1 Introduction

POLIS V12 is a closed, parameter-free tensional conservation theory built on four axioms (Tensional Ontology, Harmonic Ground $H = 1$, Tensional Conservation, Data Origin $T = K_{\min}$). The governing equation, after normalisation, is

$$\epsilon = \sum_{m=1}^n K_m(2 + K_m) = 0,$$

with $K_m = (v_m - T)/(v_{\max} - T) \in [0, 1]$. The disequilibrium index is $\text{IDT}^* = \epsilon/(1 + \epsilon)$. All real artistic systems reside in Phase 4 ($\text{IDT}^* \geq 0.70$) unless artificially uniform. The Rolling Law $2\pi r_p = V_{\text{orb}}T_{\text{rot}}$ applies fractally at all scales.

This paper reinterprets six key artistic contributions within this tensional ontology. No classical primacy is assumed; tension is the primitive.

2 Giotto di Bondone – Perspective and Naturalism

Giotto broke with medieval flatness, introducing three-dimensional space and naturalistic emotion. In POLIS V12, a painting is a 2D polis where each point has a K_{depth} (distance from the picture plane). Giotto organised space as a tensional gradient: objects closer have higher K , distant objects lower K . The fresco's surface is the solid mesh; the illusion of depth is the liquid mesh (viewer's perception); the spiritual content is the gaseous mesh.

Giotto's lamentation scenes (e.g., Arena Chapel) show figures with distinct K_{grief} (intensity of emotion). The gold leaf background (flat) has constant $K = 0$ (infinity). Giotto's innovation was to set v_{\max} (maximum depth) finite, allowing a graduated scale of K .

3 Leonardo da Vinci – Sfumato and Anatomy

Leonardo's sfumato (smoky blending of colours and edges) eliminates sharp boundaries. In POLIS V12, sfumato is a smoothing of K gradients: dK/dx is continuous, avoiding the Phase 4 edge (outline). His anatomical drawings (Vitruvian Man) map the human body's solid mesh (proportional ratios). The golden ratio ($\phi \approx 1.618$) appears as a tensional equilibrium where $K_{\text{part}}/K_{\text{whole}} = \phi - 1$.

Leonardo's "lost wax" technique for casting bronze is a Phase 4 (melt) \rightarrow Phase 5 (solidify) cycle. His notebooks contain designs for machines (war engines, flying devices) that prefigure tensional engineering: the aerial screw (helicopter) uses the Rolling Law $2\pi r_p = V_{\text{orb}} T_{\text{rot}}$.

4 Michelangelo Buonarroti – Contrapposto and the Sublime

Michelangelo's figures twist in contrapposto (weight shift) – a torsional tensional distribution. In POLIS V12, the human figure is a polis with balanced K across limbs. The Pietà (Mary holding dead Christ) has two complementary K distributions: Mary's K_{sorrow} high but contained, Christ's K_{death} zero (limp).

His "unfinished" works (non-finito) are Phase 4 explosions frozen mid-process: the stone resists the sculptor's K , leaving some areas at $K_{\text{rough}} \approx 0$, others $K_{\text{smooth}} \approx 1$. The Sistine Chapel ceiling is a vast polis with hundreds of nodes (figures); the overall ϵ is the tension between Old Testament and New Testament narratives. The Last Judgement is a Phase 4 event (apocalypse) depicted as a turbulent mesh.

5 Rembrandt van Rijn – Chiaroscuro and Psychological Depth

Rembrandt's use of chiaroscuro (strong contrasts of light and dark) creates tensional focus. In POLIS V12, light is K_{light} , shadow is $K_{\text{dark}} = 1 - K_{\text{light}}$. The subject's face (high K) emerges from dark background (low K). Rembrandt's self-portraits trace his own K_{age} over time (youth high, old age lower but wise). The "blobs" (rough brushstrokes) are local K fluctuations that resolve into form at viewing distance.

His etching technique (copper plate bitten by acid) is a Phase 4 (corrosion) mapping of the artist's K distribution onto the plate. The "night watch" dynamically distributes K across 24 figures; the captain's hand (extended) is the high- K node (command). Rembrandt's handling of Jewish subjects (e.g., "The Jewish Bride") adds a $K_{\text{spiritual}}$ dimension.

6 J. M. W. Turner – Atmosphere and Light

Turner dissolved forms into light and colour, anticipating Impressionism. In POLIS V12, Turner's late works (e.g., "Rain, Steam and Speed") reduce the solid mesh (objects) to

near zero, leaving only the gaseous mesh (atmosphere). The locomotive is a high- K point (speed) in a field of low- K fog. Turner's use of yellow (gold) and white as maximum K (light source) is a tensional peak.

His watercolour techniques (wet-on-wet) allow K to diffuse before drying – a tensional relaxation. Turner's "slave ship" uses red (blood) as high- K accents against muted clouds. The Venetian paintings (e.g., "The Grand Canal") depict a city polis where water (liquid mesh) reflects light (gaseous mesh), buildings (solid mesh) are blurred into the water – a Phase 5 fluid equilibrium.

7 Paul Cézanne – Structural Form and Cylinders

Cézanne reduced nature to geometric solids: cylinder, sphere, cone. In POLIS V12, these are the primitive meshes: cylinder (solid), sphere (liquid), cone (gaseous). His still lifes (apples, oranges) arrange these meshes into a tensional composition. The viewer's eye is the antenna that integrates the K distribution.

Cézanne's "passage" technique (merging brushstrokes across boundaries) is a smoothing of K discontinuities. His landscapes (Mont Sainte-Victoire) repeat the same mountain from multiple viewpoints – a tensional manifold where each vantage point yields a different K projection. The unfinished quality (visible canvas) leaves some regions at $K = 0$ (unpainted ground), inviting the viewer to complete the mesh. Cézanne's statement "I want to make of Impressionism something solid and durable like the art in museums" is a Phase 5 (reorganisation) of the Impressionist polis.

8 Conclusion

The six foundational contributions to art history are coherently reinterpreted within the POLIS V12 tensional ontology. Perspective, sfumato, contrapposto, chiaroscuro, atmospheric light, and structural form all become natural consequences of the closure condition $\epsilon = \sum K_m(2 + K_m) = 0$ and the fractal hierarchy of artistic polises. No free parameters are added.

Zenodo references

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Abstract

This paper extends the POLIS V12 tensional reinterpretation to six additional artistic giants: Vincent van Gogh (colour and emotion), Claude Monet (impressionism), Pablo Picasso (cubism), Henri Matisse (fauvism), Kazimir Malevich (suprematism), and Jackson Pollock (action painting). Each is re-read as a tensional configuration: van Gogh's broken colour as K modulation; Monet's series as phase variations; Picasso's multiple perspectives as K vectors; Matisse's flat colour as uniform K blocks; Malevich's black square as $K = 0$; and Pollock's drip as tensional trajectories. The universal equations remain unchanged; no free parameters are introduced.

9 Introduction

As in the companion paper, POLIS V12 rests on four axioms. After normalisation the mother equation is

$$\epsilon = \sum_{m=1}^n K_m(2 + K_m) = 0,$$

with $IDT^* = \epsilon/(1 + \epsilon)$. All real artistic systems are in Phase 4 ($IDT^* \geq 0.70$) unless artificially uniform. The Rolling Law $2\pi r_p = V_{orb}T_{rot}$ applies fractally.

This paper reinterprets six more foundational contributions to art.

10 Vincent van Gogh – Colour and Emotional Expression

Van Gogh's intense colours (yellows, blues) and swirling brushstrokes convey emotional tension. In POLIS V12, colour is a K value in the visible spectrum. Van Gogh raised K_{yellow} (sun, sunflowers) to near 1 and K_{blue} (sky) to high contrast, creating large ϵ (emotional impact). The impasto technique (thick paint) adds a physical third dimension: each stroke has its own K_{height} .

"The Starry Night" has a turbulent sky mesh: stars as high- K nodes, the moon as a circular K gradient. The cypress tree (dark) is a low- K vertical obstacle. Van Gogh's self-portraits show the artist's own K_{mental} fluctuating (ear bandaged). The "potato eaters" (early) uses low K (browns) to depict peasant poverty; later works (Auvers) use high K (bright yellows, greens) in burst of Phase 4 productivity before death.

11 Claude Monet – Impressionism and Series

Monet painted the same subject (haystacks, Rouen Cathedral, water lilies) under different light conditions. In POLIS V12, each painting in a series is a different K configuration of the same underlying polis (the subject). Light is the primary gaseous mesh; successive canvases vary the illumination T and v_{\max} . The "Water Lilies" (Orangerie) creates an immersive environment where the viewer is surrounded by a continuous K field.

Monet's later painting with cataracts (blurred vision) reduced his ability to focus; his works became increasingly abstract, with K fluctuations at larger scales. His gardens at Giverny were designed as a living polis (pond, bridge, flowers) that he painted repeatedly. The "Haystacks" series shows how the same solid mesh (hay) changes K as the sun's angle changes – a seasonal and diurnal tensional cycle.

12 Pablo Picasso – Cubism and Multiple Perspectives

Picasso's cubism breaks objects into facets and shows multiple viewpoints simultaneously. In POLIS V12, a cubist painting is a projection of a high-dimensional K space onto a 2D canvas. Each facet is a different K orientation. "Les Femmes d'Alger" merges primitive masks (African art) with European bodies – a fusion of two K regimes.

Analytical cubism (1909–1912) reduces colour to nearly greyscale ($K_{\text{hue}} \approx 0$) to focus on structural K . Synthetic cubism introduces collage (pasted paper, cloth) – adding real solid meshes to the canvas. Guitar sculptures (cardboard, wire) are 3D polises that redefine the boundary between art and object. Picasso's "Guernica" is a political polis with shattering K (bombing) depicted as jagged fragments.

13 Henri Matisse – Fauvism and Flat Colour

Matisse's fauvism used non-naturalistic, flat areas of pure colour. In POLIS V12, flat colour means constant K over a region (no internal gradient). The relationship between adjacent K blocks (e.g., red/green) sets the tensional contrast. Matisse's "The Joy of Life" is a pastoral polis with smooth curves and high K (pleasure). His cut-outs (late in life) are direct placements of pre-coloured solid meshes (paper) onto a white ground ($K = 0$).

The dance ("Dance") figures form a circle: a closed tensional loop where each figure's K balances the others. Matisse's comment "I want an art of balance, purity, and serenity" is a search for $\epsilon = 0$ without explosive tensions. His chapel of the Rosary (Vence) is an entire architectural polis where stained glass (K_{light}) interacts with white walls ($K \approx 0$) and drawn line (K_{line}).

14 Kazimir Malevich – Suprematism and the Black Square

Malevich's Black Square (1915) is a black square on a white background – a polis with only two K values: 0 (white) and 1 (black). The painting reduces the mesh to its minimum: no intermediate K , no gradation, no representation. Malevich called it the "zero of form" – the tensional origin $T = K_{\min}$ and the maximum $v_{\max} = 1$ simultaneously.

Suprematist compositions (e.g., "White on White") tilt the square at an angle, adding a directional K vector. The dynamic of suprematism is the creation of new K configurations (rectangles, circles) floating in a void. Malevich's manifesto (0.10 exhibition) declared the end of representation and the beginning of pure tensional art.

15 Jackson Pollock – Action Painting and Drip Technique

Pollock placed large canvases on the floor and dripped paint from above. In POLIS V12, each drip is a tensional trajectory: the paint's K is determined by height of fall, viscosity, and speed of hand. The painting records the artist's movement over time – a spacetime K map. Pollock's "energy" is the sum of x (residual) distributed across the canvas.

The format (all-over composition) eliminates a single focal point; the viewer's eye scans across the field, integrating K at multiple scales. Pollock's use of industrial paints (aluminum, enamel) changes the material K of the paint itself. His "drip technique" is a Phase 5 (reorganisation) of painting: the liquid mesh (paint) is applied directly without brush (solid mesh) intermediary. The "action" is the tensional flow from the artist's intention to the canvas.

16 Conclusion

Six additional artistic pioneers are reinterpreted within the POLIS V12 tensional ontology. Emotional colour, serial impressions, cubism, fauvism, suprematism, and action painting all become natural consequences of the closure condition $\epsilon = \sum K_m(2 + K_m) = 0$ and the fractal hierarchy of artistic polises. No free parameters are added; the same equations that describe a physical system or a social system also describe the visual arts.

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