

GRAVEYARD SPIRAL

TRENT CRAWFORD

We Futurists declare that the shifting perspectives of flight constitute an absolutely new reality which has nothing in common with reality as traditionally constituted by a terrestrial perspective. — Manifesto of Aeropainting (1929)¹

To paraphrase a manifesto of a different time and place: “Beauty exists only in struggle. There is no masterpiece that has not an aggressive character. Technology must be a violent assault on the forces of the unknown, to force them to bow before man.” — The Techno-Optimist Manifesto, Marc Andreessen (2023)²

Much has been made of Futurism’s influence on the political present. The rise of reactionary, techno-libertarian politics and recent manifestos published under banners of ‘techno-optimism’ and ‘effective accelerationism’ have been compared to Futurism’s fervent entanglement with populist fascism.³ However, what remains relatively untouched is another equally important corollary—a question of spirit.

Aeropainting (Aeropittura) emerged in the late 1920s as a subcategory of Italian Futurist painting that would come to define the movement’s so-called ‘second wave’. Published twenty years after Futurism’s founding manifesto, the *Manifesto of Aeropittura* breathed fresh air into the ageing avant-garde. Accelerated access to newfound means of verticality, speed, and propulsion unlocked by rapid advances in the aeronautics industry reterritorialised the landscape, demanding a corresponding artistic response—one capable of distilling the elements of an unstable reality ‘constructed by perpetual mobility.’⁴

For aeropainters such as the young Tullio Crali, aviation embodied Italy’s technological modernity and an escape from the weight of its classical past.⁵ A teenager during Fascism’s rise, Crali inhabited a world saturated with visions of aeronautics as a transcendent force that could elevate Italy among Western powers.^{6 7} Benito Mussolini personified this aeronautical ambition as the nation’s leader. After obtaining his pilot’s license in 1921, he inherited the moniker ‘Pilota della nuova Italia’ (pilot of the new Italy). Believing that Italy’s aviation industry had been ‘abandoned to utter decay’⁸ after the First World War, he harnessed Futurism’s technological idealism to place aeronautical development at the centre of his agenda for a resurgent modern empire.⁹ Although

underlying tensions would ultimately undermine the unity of Futurism and Fascism, the resurrection of the Italian aviation industry and the burgeoning idiom of aeropittura represented for both movements Italy’s modern incarnation for all the world to see.¹⁰

As nations confronted the revolutionary implications that aviation brought to modern warfare, the interwar period witnessed a dramatic militarisation of the skies across Europe. Germany covertly developed the Luftwaffe, Britain abandoned its ‘Ten Year Rule’ against investment in defence, and both France and the Soviet Union established independent air forces by 1934. The rapid development of aeronautics during the interwar period was later canonised as ‘the golden age of aviation’ (1927-1939), one that aeropainting decidedly captures through its dynamic fragmentation of the terrestrial world, reconstructed according to the accelerated logic of mechanical flight. Long-standing Futurist principles of polycentrism, simultaneity and plastic dynamism held new resonance in this age of aerial modernity¹¹—visual strategies capable of depicting a disorienting new reality, a world rendered ‘smashed, artificial, provisional, as if having just fallen out of the sky.’¹²

A century on and amid the disorientating resurgence of a multipolar world and a corollary rearmament, Simon Denny’s exhibition *Forces of the Unknown* reanimates the history of aeropainting against a backdrop of rapid technological development in AI and autonomous weaponry.

Staged in the conference room of the JW Marriott Hotel, the exhibition places Denny’s works in direct proximity to the Bendlerblock across the street—a pivotal location in Germany’s military history and current rearmament project, as well as a memorial site for resistance against the Nazi regime. The hotel stands around the corner from the first exhibition of Futurism in Germany in 1912, and just across the river from the Berlin leg of the 1934 travelling exhibition of aeropittura—an exhibition that would ignite Adolf Hitler’s public denigration of Futurism later that year.^{13 14}

These historical convergences serve as a potent reminder of modernity’s vertiginous cycles. The bellicose romanticism that defined early Futurism—with its exaltation of speed, dynamism, and notorious declaration of ‘war as the world’s only hygiene’¹⁵—ultimately materialised in the aerial atrocities of the Second World War. In a contemporary moment defined by the reanimation of accelerationist fervour, Denny asks what can we glean from the redeployment of a Futurist vernacular.

Recent years have witnessed a break turn¹⁶ in Silicon Valley culture, moving away from antimilitarist sentiments that gradually replaced earlier eras of more direct military partnership.¹⁷ Whereas in 2018, Google employees resigned in protest of the company's relationship with the Pentagon's 'Project Maven'—an initiative applying computer-vision AI to military drone-surveillance footage—today, engineering talent increasingly gravitates toward defence-oriented companies like Anduril, Palantir, and Germany's own Helsing—whose marketing material forms the base of the monochrome inkjet imagery in this very exhibition. These firms share a common declaration: 'Only superior military technology can credibly deter war'—recruiting a new generation of patriotic technologists willing to do the work of 'rebooting the arsenal of democracy.'¹⁸

This realignment found its ideological champion in Marc Andreessen, whose venture firm, Andreessen Horowitz, has become the most active investor in the defence industry over the past decade.¹⁹ His 2023 *Techno-Optimist Manifesto* repurposes the original *Futurist Manifesto* to contemporary ends:

To paraphrase a manifesto of a different time and place: Beauty exists only in struggle. There is no masterpiece that has not an aggressive character. Technology must be a violent assault on the forces of the unknown, to force them to bow before man.²⁰

Denny's new works are not conventional aeropaintings but synthetic images generated by a machine-learning algorithm trained on works by the likes of Crali and Giacomo Balla alongside advertising imagery of next-generation military drones. The digital outputs are broken down and rendered into paint through machine-assisted mechanical plotter and printer devices.

Where the Futurists saw the pilot's cockpit as a viewfinder capable of altering the spectator's perception of the landscape, Denny's reenactments turn the polycentrism and plastic dynamism of Futurist aeropainting into born-digital landscapes. The modalities of Futurist painting find their form not in the distorted landscape as visioned by the human, but in a digitised landscape revisioned by the machine—one of weights and values compiled in the vector space of deep learning models.²¹

Where the Futurists celebrated the disorientating yet fully embodied experience of the pilot's perspective—from the ascent of Gerardo Gottori's *Ascending Forms (or Ascending Forces)* (1930) to the

terrorising descent of Crali's *Nose Dive on the City* (1939)—today's world of autonomous machine vision has created a condition of 'distributed invisibility' from which humans are denied access.²² Synthetic compositions eviscerate the embodied experience that was so central to the Futurist vision. The human subject, once enthralled within the cockpit, is now jettisoned entirely, lost amid the deterritorialising vectors of acceleration. Perception no longer belongs to the subject in motion, but to the system itself.

In the 1930 catalogue of the 17th Venice Biennale, Futurism's founder, F.T. Marinetti, declared that the aesthetics of new Futurist painting were 'based on the spirit of the machine and not on the machine itself.'²³ This separation of mechanical form from spirit resonates once again within Denny's project. If generative AI attempts to reproduce reality with seamless, photorealistic precision, it also creates a deceptive veil that obscures its underlying nature. Denny's work, by contrast, returns us intentionally to a pictorial tradition of simultaneity and dislocation, highlighting rather than hiding the fragmented palimpsestic spirit underlying these machines.

To posit Futurism as a historical lens through which to see the world today—not in '8K, ultra-detailed, HDR, hyper-photorealistic' clarity, but in its turbulence—is to acknowledge the fundamental modalities of these new systems. Such turbulence is not only our own; it belongs to the currents of history, of disparate narratives blended together through the intrinsic blur of artificial interpolation and statistical learning. It is undeniable that in this turbulence, in a world where the synthetic recomposition of the past generates new futures, the question of canon—of where we have come from and how it influences where we are going—becomes critical.

As one looks upon these machine-made paintings, one might well ask: if aeropainting once captured the 'golden age of aviation'—unknowingly presaging the aerial horrors of war—what futures are being quietly foreshadowed in these neo-futurist works?

In aviation, the 'graveyard spiral' describes a phenomenon where pilots lose sight of the horizon and mistake descent for ascent—by the time the ground becomes visible, it's often too late to pull up. There is a rupture in what the pilot believes and feels is happening, and the actual reality around them. Instead of plotting a clear line through the canon of history, Denny reveals to us the disorientating feedback loops within this spiral, as we try to orient ourselves, once again, amid a world reterritorialised by new machines.

NOTES

1. Giacomo Balla, Benedetta, Fortunato Depero, Gerardo Dottori, Fillia, F.T. Marinetti, Enrico Prampolini, Mino Somenzi, and Tato, "Manifesto of Aeropainting" in *Futurism: An Anthology*, ed. Lawrence Rainey, Christine Poggi, and Laura Wittmann (New Haven: Yale University Press, 2009), 283.
2. Marc Andreessen, "The Techno-Optimist Manifesto," October 16, 2023; see <https://a16z.com/the-techno-optimist-manifesto/>
3. Techno-optimism and effective accelerationism (e/acc) represent emerging techno-political philosophies that advocate for the unrestricted advancement of technological progress. While techno-optimism emphasises the inherent benefits of technological development and market-driven innovation, e/acc specifically argues for the acceleration of technological change based on thermodynamic principles and evolutionary adaptation. Both movements share intellectual lineage with early futurist thought in their embrace of technological transformation and critique of passéist regulatory restriction.
4. Balla et al., "Manifesto of Aeropainting," in *Futurism: An Anthology*, 283.
5. Tullio Crali (1910–2000) was not yet born when the Futurist movement was founded in 1909. His entry into Futurism was shaped by a second generation of the movement and the state-promoted vision of aviation as a symbol of Fascist Italy's modernist aspirations. Crali joined the Futurist movement in 1929 at age eighteen—the same year the Manifesto of Aeropainting (Manifesto dell'Aeropittura) was published. Ten years later, F.T. Marinetti would proclaim him to be "the greatest aeropainter of the moment" (Il più grande aeropittore del momento). After World War II and the death of Marinetti in 1944, Crali remained committed to the ideals of Aeropainting, continuing to produce works of aeropittura into the late 1980s. Having faced criticism for his perceived alignment with Fascism, Crali later sought to "weave an agreement between Futurism and nature." He produced the first post-war Futurist manifesto "Sassintesi" (Stone Syntheses) in 1959, as well as the manifesto "Orbital Art" in 1969, which envisioned collaboration with technicians and scientists to create artworks designed for orbit around Earth; see Massimo De Sabbata, Tullio Crali: Il futurismo giuliano e l'aeropittura (Trieste: Fondazione CRTrieste, 2019), esp. pp. 5-35.
6. Michelle Paluch-Mishur, "The Mutable Perspectives of Flight: Futurist Aeropittura and the 'Golden Age' of Aviation" (PhD diss., University of Wisconsin-Madison, 2004), 82-83.
7. Italian aviators played an early role in conditioning the terrestrial world from above. The first aerial bombing raid was conducted spontaneously by a rogue Italian pilot, Lieutenant Giulio Gavotti, who dropped grenades over Turkish positions in Libya in 1911. The act was widely criticised as a defamation of the gentlemanly art of war. Later that decade, the Italian poet, playwright and pilot Gabriele D'Annunzio led the "Flight over Vienna," a historical aerial propaganda campaign where 11 aircraft dropped 50,000 Italian nationalist pamphlets over Vienna on 9 August 1918. These events were of significant influence to F.T. Marinetti in the early years of Futurism, prior to the development of aeropittura as a distinctive subgenre.
8. Under the chapter "The Fascist State and the Future" in his Autobiography, Mussolini reflects on his role in strengthening Italian aviation: "...I dedicated myself to a reorganisation of aviation, which had been abandoned to utter decay by the former administrations. The task was not easy; everything had to be done again. The landing fields, the machines, the pilots, the organizers and the technicians all were restored. A feeling of abandonment, of dejection and mistrust had been diffused in Italy by the enemies of aviation: this new type of armed force, many people thought, should be developed only as a sport. Into this situation I put my energy—I gave it personal attention, personal devotion. I have succeeded in my purpose: the successes of De Pinedo, of Maddalena, the flights in squadrons, the great manoeuvres, have demonstrated that Italian aviation has recently acquired great expertness and prestige, not only in Italy, but wherever there is air to fly in." Benito Mussolini, *My Autobiography* (New York: Charles Scribner's Sons, 1928), 291.
9. Mussolini's fascist regime explicitly framed Italy's aeronautical achievements as evidence of the nation's capacity to establish a "Third Rome" (Terza Roma)—a modern resurrection of the Roman Empire. This imperial vision was central to fascist ideology, with aviation serving dual purposes: as practical infrastructure for colonial control and as propaganda symbolising Italy's technological modernity. As Fernando Esposito documents in *Fascism, Aviation and Mythical Modernity* (2015), this connection was explicitly articulated in Fascist Italy through works like Guido Mattioli's *Mussolini the Aviator and His Work for Aviation* (Mussolini aviatore e la sua opera per l'aviazione, 1935) which declared: "No machine requires as much concentration of the human mind, as much human will power, as the flying machine does. The pilot really knows what it means to govern. Hence there appears to be a necessary, inner spiritual affinity between aviation and fascism. Every aviator is a born fascist." Similarly, Claudio G. Segré in *Italo Balbo: A Fascist Life* (Berkeley: University of California Press, 1987) documents how the regime's celebrated mass flights to Italian colonies, particularly Balbo's transatlantic formation flights, were deliberately staged to demonstrate Italy's technological capability to administer an empire and reclaim its place in the Mediterranean as heir to ancient Rome.
10. For more information on the relations and divisions between Futurism and Fascism, and the varied history of Futurist politics in general, see Günter Berghaus, *Futurism and Politics: Between Anarchist Rebellion and Fascist Reaction* (Providence: Berghahn Books, 1996). Berghaus's analysis incorporates primary documentation made available with the publication of F.T. Marinetti's diary in 1987.
11. The term polycentrism refers to the convergence of multiple simultaneous perspectives into a unified plane. The term plastic dynamism as defined by Umberto Boccioni in 1913 refers to "the simultaneous action of the motion characteristic of an object (its absolute motion), mixed with the transformation which the object undergoes in relation to its mobile and immobile environment (its relative motion)." For further reading on Boccioni's concept of plastic dynamism, see <https://www.arthistoryproject.com/artists/umberto-boccioni/plastic-dynamism/>
12. Balla et al., "Manifesto of Aeropainting," in *Futurism: An Anthology*, 283.
13. The 1934 travelling exhibition of Italian Futurist Aeropainting ("Italienische futuristische Luft- und Flugmalerei") opened at Berlin's former Flechtheim Gallery on March 28. This exhibition became a flashpoint in the internal debate over Nazi cultural policy, sparked by accusations of "art Bolshevism" that began at its previous stop at the Hamburg Kunstverein. Though initially supported by an honorary committee including Hermann Göring, Joseph Goebbels, and Bernhard Rust, the exhibition was denounced by Robert Scholz, spokesman for Alfred Rosenberg's "Combat League for German Culture," in the *Völkischer Beobachter* newspaper on the morning of the opening, causing the Nazi officials to withdraw from attendance. Hoping to increase support for modern art practices in Germany, cultural figures, including Otto Andreas Schreiber and Rudolf Blümner, attempted to use the exhibition and perceived legitimacy of Futurist art in Fascist Italy to advocate for the standing of German Expressionism in the Reich. This approach ultimately backfired under continued pressure from Rosenberg's völkisch wing, who accused Goebbels in his position as

Reich Minister of Public Enlightenment and Propaganda of supporting “the successful attempt to carry out a futuristic exhibition by Berlin art Bolsheviks via the detour through Italy.” To resolve these tensions within Nazi leadership, Hitler settled the matter decisively in his September 1934 Nuremberg speech, condemning “Cubists, Futurists, Dadaists, etc.” as threats to National Socialism. Ironically, this declaration occurred at an event that would itself serve as a notable form of aeronautic propaganda, immortalised in Leni Riefenstahl’s *Triumph of the Will*, whose opening sequence depicts Hitler descending into Nuremberg via aeroplane like a deity from the heavens; see Hildegard Brenner, *Die Kunstpolitik des Nationalsozialismus* (Reinbek bei Hamburg: Rowohlt, 1963), esp. pp. 63-86.

14. Another notable site connected to this exhibition is the Shell-Haus building situated adjacent to the JW Marriott Hotel. Built in 1932, the building represents a significant embodiment of New Objectivity (Neue Sachlichkeit) architecture designed by Emil Fahrenkamp as headquarters for the Shell petroleum company. Following Hitler’s official condemnation of Futurism as “Degenerate Art” (Entartete Kunst), in 1937 F.T. Marinetti issued a direct rebuttal titled “Response to Hitler.” In this text, Marinetti specifically references Italian Futurist painter, sculptor, and stage designer Enrico Prampolini’s supposed mural work in Berlin’s “il palazzo della Shell” as evidence of Futurism’s continued international prominence and aesthetic legitimacy. Despite Marinetti’s confident assertion, archival documentation has yet to confirm whether Prampolini’s mural was ever actually executed or installed at this location. This rhetorical claim strategically positions this purported Berlin work as proof of Futurism’s enduring “gaudy warriorlike dynamic synthetic character” despite official Nazi disapproval. The building, now protected as architectural heritage, currently houses the Federal Ministry of Defence (Bundesministerium der Verteidigung); see: F.T. Marinetti, “Response to Hitler,” in *Futurism: An Anthology*, ed. Lawrence Rainey, Christine Poggi, and Laura Wittman (New Haven: Yale University Press, 2009), 297-298.

15. F.T. Marinetti, “The Founding and Manifesto of Futurism,” originally published in *Le Figaro* (Paris), February 20, 1909. The complete quote reads: “We will glorify war—the world’s only hygiene—militarism, patriotism, the destructive gesture of freedom-bringers, beautiful ideas worth dying for, and scorn for woman”; see <https://www.arthistoryproject.com/artists/filippo-tommaso-marinetti/the-futurist-manifesto/>

16. In aviation, a “break turn” (or simply “break”) is a rapid, high-G turn used to change direction, often for defensive

maneuvers like evading a missile or breaking away from a formation. It’s a quick, sharp maneuver that utilises a high angle of bank to turn the aircraft sharply.

17. Silicon Valley’s historical entanglement with defence and military funding is strategically highlighted by Anduril in their 2022 mission document “Rebooting the Arsenal of Democracy.” The company emphasise the significant role defence funding played in the founding of Silicon Valley through actors like Fred Terman, the so-called “father of Silicon Valley,” who led the Department of Defence’s electronic warfare lab during WWII before returning to Stanford with extensive government connections. By 1947, the DoD provided half of Stanford School of Engineering’s budget, and by 1960, the DoD accounted for 36% of all global research and development, with significant concentration in Silicon Valley. The antimilitarist sentiment that emerged in later years represented a notable departure from these founding relationships.

18. “Rebooting the Arsenal of Democracy: Anduril Mission Document,” Anduril, June 5, 2022; see <https://www.anduril.com/article/rebooting-the-arsenal-of-democracy-anduril-mission-document/>

19. Since 2021, Andreessen Horowitz has led the venture capital industry in defence technology investments, participating in 14 funding rounds—more than any other firm during this period. This metric is based on the number of funding rounds between 2021 and 2024, including investments in both Anduril Industries and Helsing; see Chris Metinko, “A16z, Founders Fund Lead Defense VC,” *Crunchbase News*, August 20, 2024, <https://news.crunchbase.com/venture/a16z-founders-fund-lead-defense-vc-anduril-helsing/>

20. Andreessen, “The Techno-Optimist Manifesto.”

21. For certain neural networks to learn and store information, training data is compressed into a multidimensional landscape of relational vectors, known as a vector space or latent space. In this environment, futurist principles of polycentrism and plastic dynamism find striking analogues. Polycentrism—the convergence of multiple simultaneous perspectives into a unified plane—is inherent to the dynamics by which disparate data features are encoded into latent space as an integrated field of relations. In such a state, underlying patterns, structures and characteristics within the training data emerge through the relationships between vectors. Signification arises not from any single coordinate value but from how these fixed points relate to one another across the multidimensional landscape. Plastic dynamism—the fusion of an object’s inherent

motion with its environmental interaction—captures the dynamic and malleable states these relational vectors can produce. For example, through a process of interpolation, which blends the values of vectors in latent space to generate a continuum of intermediate positions—such as a spectrum of representations between an aeroplane and a bird in flight.

22. A. MacKenzie and A. Munster, “Platform Seeing: Image Ensembles and Their Invisibilities,” *Theory, Culture and Society*, vol. 36, no. 5 (June 2019).

23. F.T. Marinetti, “Quest’estetica è basata sullo spirito della macchina e non sulla macchina stessa,” in *La XVII Biennale di Venezia* (Venice: Officine Grafiche Carlo Ferrari, 1930), 135-136. English translation from Paluch-Mishur, “The Mutable Perspectives of Flight,” 1.

Trent Crawford (b. 1995, Melbourne, Australia) is an artist whose work explores the impact of image-based technology. He completed a BFA (Hons., 2017) from the Victorian College of the Arts and is currently undertaking an MFA at Hochschule für bildende Künste Hamburg. Crawford’s work has been exhibited internationally across institutions and galleries such as Animal House Fine Arts (Melbourne), 4649 (Tokyo), National Gallery of Victoria (Melbourne), Museum of Australian Photography (Melbourne), Human Resources (Los Angeles), Myojuji Sarue (Tokyo), Palazzo San Giuseppe (Polignano a Mare), Ace Open (Adelaide), Apertura Institute (Lisbon) and Auto Studio (Beijing). His films *LOCK* (2021) and *In a World Full of Angels* (2023) have received Best Experimental Film at the Cologne International Film Festival (Cologne) and Best Experimental Short at Experimental Forum International Film and Video Art Festival (Los Angeles).