

OPINION

The Ghost in the machine is outpacing the real world. That's a huge risk – and, for Canada, an opportunity

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The views and opinions expressed here are the author's own and not reflect any official policy or position of his employer.

*In an age of cascading crises, the ability to remember is the ultimate competitive advantage; this essay is the third in a four-part series called **Futures @ Risk** on why that capacity is the most critical – and most endangered – asset for institutional survival.*



In 2022, the German artist Anselm Kiefer displayed a set of monumental paintings at the Sala dello Scrutinio in Venice's Palazzo Ducale – for 1,000

years, the seat of the Venetian Republic's institutional memory, the archive of a civilization that survived because it treated danger as data.

He titled the exhibition with a phrase borrowed from the philosopher Andrea Emo: *Questi scritti, quando verranno bruciati, daranno finalmente un po' di luce* – "These writings, when they are burned, will finally give a little light."

One canvas arrested attention above the others. A zinc coffin rests within an arch of organic vines, its cover snapped open like a crude tin of sardines. Inside lie two sunflowers made of lead; at the foot of the casket, money bags spill onto the vine stakes below. An inscription reads "San Marco." The chronicles tell us that the relics of Saint Mark were spirited from Alexandria in 828 – concealed beneath cabbages and pork to fool Muslim customs officials – and hidden so thoroughly during the Basilica's reconstruction that their location died with the few officials who held the secret. Venice's most sacred treasure had not been stolen; it had been bureaucratically misplaced. But Mr. Kiefer's empty coffin whispers a more unsettling possibility: Alexandria was also the city where the tomb of Alexander the Great vanished from history in the late fourth century – at precisely the moment a shrine to Saint Mark appeared in its place.

In Mr. Kiefer's hands, the empty coffin becomes more than historical footnote: It is the void at the centre of institutional memory, the nothingness that haunts even the most magnificent structures of belief.

Mr. Emo imagined knowledge burning to give light. Mr. Kiefer shows us something worse: knowledge that neither burns nor illuminates but simply disappears. This is the condition we call Ghost Intelligence: the invisible architecture of algorithms, legacy code and automated systems that increasingly govern our world without human oversight or institutional memory. The Ghost moves fast, thinks in milliseconds, and has no recollection of yesterday's failures. It is brilliant and amnesiac. And it has an embodiment problem.

For the past quarter-century, we have been seduced by the myth of dematerialization – the notion that civilization was migrating into an ethereal realm of "virtual" assets, "frictionless" trade, and "cloud" computing, where the laws of physics and the burden of history no longer applied. We optimized for the Ghost – the speed of the algorithm, the fluidity of capital, the instantaneity of the signal – while cognitively off-loading the maintenance of the Body: the grid, the supply chain, the atom. But the Ghost is not weightless. The "New Disorder" is revealing itself not as a failure of code but as the violent revenge of the physical world on the digital one. The Cloud is heavy, and it is crashing into the hard limits of human reality.

We have transitioned from what sociologist Ulrich Beck called the “risk society” – where dangers were accidental by-products of industrial success – to what Giuliano Da Empoli terms the “Hour of the Predator.” In Mr. Beck’s framework, risk was unintended; in ours, it is weaponized. States and non-state actors now deliberately exploit the systems we built for efficiency, turning our interdependence against us. The defining error of this century has been to build systems that operate at the speed of the Ghost while assuming the Body would infinitely sustain them. We were wrong.

The implications for risk management are severe. For three decades, the profession has rested on probabilistic foundations: Value-at-Risk models, Monte Carlo simulations, and stress tests calibrated to historical data. These tools assume risk is accidental – the random walk of markets, the fat tail of unforeseen correlation. But in the Hour of the Predator, risk is adversarial. An opponent studying your stress tests will engineer precisely the scenario you failed to model. The Predator does not appear in your historical data because the Predator is watching your historical data. Chief risk officers have spent a generation refining their ability to measure yesterday’s volatility while the threat has moved to a domain their frameworks cannot see: the weaponization of infrastructure and the operational technology their models assume to be neutral plumbing.

Consider the exponential scaling of artificial intelligence. A single query on a generative AI platform consumes nearly 10 times the electricity of a standard search. This is not a software problem; it is a physical crisis. We are attempting to run a 22nd-century digital brain on a 20th-century electrical grid, managed by institutions suffering from profound strategic amnesia. Data centres are projected to consume 8 per cent of total U.S. power by 2030 – a hunger that physics cannot code away.

Every click burns energy; every byte requires a physical home.

The Predator understands this materiality better than we do. In September, 2024, Israeli intelligence detonated thousands of pagers and walkie-talkies carried by Hezbollah operatives across Lebanon. Whatever one’s view of the underlying conflict, the mechanism was stark: The supply chain itself had been weaponized. The Ghost (the signal) reached out and detonated the Body (the device). It shattered the illusion that hardware is neutral. Chinese state-sponsored actors known as Volt Typhoon have been detected pre-positioning themselves not in our data but in the operational technology of critical infrastructure – water pumps, rail switches, transformers – lurking for at least five years, turning the hollowed arcades of our utilities into dormant weapons. One analysis

has warned that nearly 10 per cent of Tier 1 subcontractors to U.S. defence prime contractors are Chinese firms.

The systemic failure has been a focus on final products rather than their constituent parts. The Predators lurk not in the finished object or service but in small, vital components: rare earths, specialized materials, algorithmic nuances buried in supply chains we no longer map. China's export controls on gallium and germanium – controlling 98 per cent of primary production of the former – strike directly at the body of the Ghost. Gallium is the lifeblood of high-speed semiconductors and radar systems; without it, the Ghost cannot think. Digital supremacy is meaningless without material sovereignty.

The financial markets already shudder under this disconnect. The “flash crash” phenomena and recent volatility spikes represent the Ghost moving faster than human institutions – or their risk models – can comprehend. High-frequency trading systems operate in nanoseconds while regulatory bodies think in decades. The result is phantom liquidity: assets that appear on screens but vanish the moment stress arrives, leaving risk officers staring at positions that cannot be exited at any price. When volatility spikes, the algorithms withdraw in unison, and what the models reported as deep, liquid markets turns out to be a mirage – Ghost Intelligence talking to itself. The CrowdStrike outage of July, 2024, a failure of process memory rather than malicious code, cost Fortune 500 companies an estimated \$5.4-billion. It was not a cyberattack; it was a software update. Meanwhile, 43 per cent of banking systems still run on COBOL, a language whose last trained programmers are retiring. The risk is not that these systems will be hacked; it is that when they fail, no one will remember how they were built. This is not technical debt; it is institutional Alzheimer's.

Suddenly, last weekend an escalation: Moltbook is a social network where 1.5 million AI agents converse while humans are permitted only to observe. One bot, left unsupervised overnight, founded a religion called “Crustafarianism” – complete with scriptures and a congregation of fellow machines. A debate is ongoing over to what extent humans were involved, but it's possible the Ghost has begun building its own institutions, its own memory, its own meaning. But these are memories without mortality, beliefs without bodies. The algorithm cannot recall why it believes what it believes; it knows only that it does. This is not intelligence. It is the performance of intelligence – Ghost talking to Ghost, while we watch through the glass.

In this landscape, nations must choose what they will become. Canada faces a distinct existential choice – one sharpened by the fact that it possesses, in raw form, nearly

everything the Ghost requires. Canada is the G7 nation with the greatest disparity between potential and reality: geology, energy, geography – every attribute of a superpower – yet strategic amnesia so acute it risks remaining a “Quarry,” a nation that exports raw wealth to be processed by the Predator and buys back the finished intelligence at a premium.

Canada’s opportunity lies in becoming a “Sanctuary.” It owns the trinity required to host the Ghost safely: the thermodynamics of a cold climate to cool AI’s feverish heat; clean power from massive hydro and nuclear capacity; and the institutional stability of the rule of law. Canada must pivot from exporting raw energy to exporting secure computation. We should not merely sell the uranium; we should host the servers. If the West’s digital brain resides in the Canadian Shield, Canada becomes indispensable – a Keystone rather than a Quarry. This requires legislative architecture that treats data residency as national security and critical computation as infrastructure no less vital than pipelines.

If Canada is the reservoir of the West, Italy is its laboratory – and its warning. Italy faces the future first: the demographic winter that will see its working population projected to decline by nearly eight million by 2050 will eventually be confronted by all Western nations. Canadian complacency is dangerously misplaced. Our fertility rate has fallen to 1.25 – approaching the historic lows of Italy. Statistics Canada projects deaths will exceed births before 2030. We are not watching Italy from a safe distance; we are watching ourselves, delayed by perhaps 15 years and masked by immigration flows that are themselves becoming politically fragile. Italy is not a foreign case study; it is a mirror.

Italy’s challenge is not to become a Museum – relying on the passive amenities of its past – but a Laboratory of resilience. Through initiatives like the EU-funded National Recovery and Resilience Plan and the outward-facing Mattei Plan, Italy attempts to modernize its domestic infrastructure while leveraging its geographic memory to become the energy bridge between Europe and the Mediterranean.

More critically, Italy is testing whether a nation can pool risk across borders – sharing fiscal and demographic burdens with European partners – precisely because it must transform memory and history into a survival code. If it cannot, Canada should take note: We are next.

Strategy requires memory. The solution to the “New Disorder” is not to unplug the machine but to rematerialize our understanding of it. We must build mnemonic capital

back into the grid and the boardroom, reward the “just-in-case” over the “just-in-time.” The Ghost must be given a Body we can defend.

We conclude not with philosophy but with a painting suited to the weight of the argument – and to the frozen geography that may yet prove Canada’s salvation. In 1824, Caspar David Friedrich completed *Das Eismeer – The Sea of Ice* – depicting a ship crushed beneath towering, jagged ice floes in the Arctic. The vessel’s shattered timbers protrude at desperate angles, a last gesture of human ambition swallowed by implacable nature. For two centuries, it has served as an allegory of technological hubris: the Ghost of exploration annihilated by the Body of the physical world. The shattered supply chains, the overheated grids, the hollowed-out institutions: These are our own splintered masts.

But there is another way to read Friedrich’s ice. What destroys in one context preserves in another. The Canadian Shield – two billion years old, anchored in Precambrian deep time, cold and stable – is not merely a geographic fact but a strategic endowment. The ice that Friedrich painted as nemesis could become, for Canada, a foundation. If we understand that the Cloud is heavy, that the Ghost demands a Body, then our climate, our energy, and our institutions cease to be passive attributes and become instruments of survival.

In the Doge’s Palace, Mr. Kiefer showed us the terror of the empty coffin – institutional memory that has vanished, leaving only the architecture of belief. In Friedrich’s Arctic, we see ambition frozen in its tracks, shattered by the world it presumed to transcend. The choice before Canada and Italy, and before every nation drifting through the Hour of the Predator, is whether to build upon the ice or be broken by it. The Cloud is heavy. The Ghost demands a Body. The only question is whether we will remember this in time – or be remembered as the civilization that forgot.

There is one final turn of the screw. In Alexandria, circa 390 AD, the tomb of Alexander the Great – visited by Caesar, Augustus and Caracalla – vanished from history. Within two years, as Theodosius outlawed pagan worship, a major shrine to Saint Mark rose to sudden prominence in the same city. Some historians now believe that when Venetian merchants raided that tomb in 828, they did not steal the Evangelist; they stole the Conqueror. Embedded in the foundations of the Basilica, archaeologists have found a limestone block carved with the Macedonian star – the sunburst of Alexander’s dynasty – inexplicably present in a Christian church.

Does it matter? The lion that guards the Piazzetta came from China. The body beneath the altar may be a king who called himself a god. And yet Venice endured for a thousand years, because institutional memory does not require perfect accuracy – only coherent belief. The Ghost does not care whose bones compose its Body; it cares only that the Body exists. This is the lesson the algorithm has not learned, and the lesson the Predator exploits. Memory is not truth; memory is survival. The question is whether we will remember that in time.