

The Last Human Advantage: Recursive Self-Improvement and the New Sovereignty Crisis



By Andrew Horton

The first nation to command a genuinely self-improving artificial intelligence system may acquire a strategic advantage unlike any witnessed since the advent of nuclear weapons.

Most governments remain focused on the visible manifestations of artificial intelligence: productivity gains, labour market disruption, digital regulation and economic competitiveness. These issues matter. Yet they obscure a far larger strategic question emerging at the frontier of technological development. The defining geopolitical competition of the twenty-first century may not centre on territory, trade routes or military power. It may centre on sovereignty over the engines of intelligence themselves.



Throughout recorded history, humanity has possessed one enduring strategic advantage: the exclusive ability to create the next breakthrough. Every transformative technology - from the mastery of fire to the splitting of the atom - began as an act of human imagination, judgement and invention. Technologies evolved, economies transformed and military balances shifted, yet the pace of advancement remained constrained by the limits of human cognition.

Recursive Self-Improvement (RSI) challenges that foundation.

RSI describes the point at which advanced artificial intelligence systems begin contributing directly to the creation of increasingly capable successor systems. Rather than functioning solely as tools, they become active participants in their own advancement. The significance of this transition extends well beyond technology. It represents the emergence of a new strategic domain in which intelligence itself becomes a compounding national asset.

This is what makes RSI uniquely significant. Previous technologies amplified human capability. Recursive self-improvement has the potential to compete with humanity's most important strategic function: generating the next generation of knowledge, innovation and power. The exclusive human role in creating the future may itself become contestable.

For policymakers, military planners and corporate leaders, this possibility deserves immediate attention. The question is no longer whether artificial intelligence will transform economic and national security outcomes. The question is whether artificial intelligence will eventually accelerate the creation of intelligence itself.

Across leading frontier laboratories, artificial intelligence systems already contribute meaningfully to software development, model evaluation and scientific research. Anthropic has publicly indicated that Claude now generates the majority of code merged into portions of its production environment, while human engineers increasingly focus on directing objectives and evaluating outcomes.

These developments do not constitute recursive self-improvement, but they clearly illustrate its trajectory.

The strategic significance lies in the feedback loop.

A system capable of improving research productivity contributes to the creation of better models, which in turn improve research productivity further. Once intelligence becomes an input into the production of greater intelligence, technological advancement begins operating according to fundamentally different dynamics.

The velocity of the loop becomes the decisive variable.



For generations, governments have operated within strategic timelines measured in years. Defence acquisitions, scientific discovery and technological diffusion unfolded across predictable cycles, allowing policymakers time to assess and respond.

Recursive self-improvement has the potential to compress those timelines dramatically.

A sufficiently capable system could accelerate advances across software engineering, cybersecurity, advanced materials, biotechnology and cryptography simultaneously. Entire research pipelines become candidates for automation, enabling machine-scale iteration at extraordinary speed.

Anthropic recently captured the significance of this possibility with unusual candour:

"AI that can build itself would be a major development in the history of technology."

That observation may ultimately prove conservative.

Recent calls from Anthropic for governance mechanisms capable of slowing development under certain conditions reveal a striking reality. One of the organisations racing fastest towards advanced AI capabilities is simultaneously warning that institutional oversight may struggle to keep pace.

For the first time, some of the architects of a technological revolution are openly questioning whether governance can evolve as quickly as the systems they are creating.

The consequences extend far beyond commercial competition.

The international system has historically been shaped by the distribution of industrial capacity, energy resources, military power and technological advantage. Recursive self-improvement introduces a new source of leverage: the ability to generate superior intelligence at scale.

Intelligence drives every other domain of power.

Superior intelligence generates better discoveries, stronger economic performance and more advanced compute infrastructure. The cycle becomes self-reinforcing.

The strategic question therefore shifts from who possesses the most resources to who controls the most effective intelligence engines.

This distinction matters because RSI is unlikely to emerge evenly across the international system.

The enormous computational, financial and energy requirements associated with frontier model development naturally concentrate capability within a relatively small number of actors. A handful of technology companies already operate computing infrastructure measured in billions of dollars. Their data centres consume extraordinary



amounts of electricity. Their models increasingly shape how information is created, analysed and distributed.

The frontier laboratories developing advanced artificial intelligence are therefore becoming strategic assets in their own right.

This reality carries significant implications for sovereignty.

For decades, states have viewed technological dependence as manageable. Globalisation rewarded interconnected supply chains and distributed production. The intelligence age introduces a different calculus. Nations that depend entirely upon foreign providers for frontier AI capabilities may discover that technological dependence evolves into strategic dependence.

The challenge extends beyond access to artificial intelligence. It encompasses access to the systems creating the next generation of artificial intelligence.

Consequently, compute, energy and security form the foundation of strategic advantage in the intelligence era.

Governments should therefore view frontier compute infrastructure through the same strategic lens previously applied to shipyards, energy networks, satellite systems and nuclear facilities. The largest data centres are no longer commercial assets alone. They are becoming instruments of national power.

The same logic applies to allied cooperation.

No democratic nation possesses a monopoly on talent, capital, energy, semiconductors or research expertise. Collective advantage emerges through integration. The United States, Australia, Japan, the United Kingdom, Canada and key European partners each contribute unique strengths to the emerging intelligence ecosystem.

Shared standards, trusted supply chains and coordinated investment will prove essential during the transition to increasingly autonomous systems. The objective is not technological leadership alone. It is strategic stewardship.

The strategic challenge for governments is therefore not deciding whether recursive self-improvement matters. The challenge is ensuring governance, security and statecraft evolve quickly enough to shape its arrival rather than react to its consequences.

History rewards societies that recognise new domains of power before they fully emerge. Maritime powers mastered the oceans. Industrial powers mastered manufacturing. Nuclear powers mastered atomic energy. The defining challenge of the coming decade may be mastering the systems that generate intelligence itself.



The race towards recursive self-improvement is already underway. The precise timing matters less than the direction of travel. The foundations are visible today in frontier laboratories, hyperscale data centres, advanced semiconductor facilities and the unprecedented flow of capital into artificial intelligence infrastructure.

A new strategic domain is emerging before our eyes.

For centuries, humanity's greatest strategic advantage has never been industrial capacity, military strength or economic scale. It has been our unrivalled ability to imagine, invent and create what comes next.

Recursive self-improvement raises a question unlike any civilisation has previously confronted: what happens when intelligence itself begins competing for that role?

The nations that understand it will shape the century. The nations that prepare for it will help govern it. The nations that dismiss it will discover that history has accelerated beyond them.

Humanity's last enduring advantage has always been the ability to create the future.

The defining strategic question of our age is how long that advantage remains ours alone.