<https://carnegieeurope.eu/2019/11/28/artificial-intelligence-and-future-of-conflict-pub-80421>

<https://ccdcoe.org/uploads/2021/12/Strategies_and_Deployment_A4.pdf>

<https://nationalinterest.org/blog/techland-when-great-power-competition-meets-digital-world/shared-responsibility-enacting>

# AFF

## Case

### Plan Text

#### The United States federal government should increase its cooperation with the North Atlantic Treaty Organization to restrict its use of artificial intelligence to principles of responsible use.

### Advantage 1---Joint Operations

#### Lack of joint standards on AI undermines interoperability. That will collapse the ability of NATO to respond AND contain emerging threats.

**Merwe 21** --- MA in International Relations and Global Conflict in the Modern Era, from Leiden University. She conducted her research in collaboration with the Land Warfare Centre of the Netherlands Ministry of Defense, focusing on Artificial Intelligence and the future of combat.

Joanna van der, 2-17-2021, "NATO Leadership on Ethical AI is Key to Future Interoperability," CEPA, https://cepa.org/nato-leadership-on-ethical-ai-is-key-to-future-interoperability/

In October 2020, Deputy Secretary General of NATO Mircea Geoană highlighted the benefits of establishing a “[transatlantic community cooperating on Artificial Intelligence (AI](https://www.nato.int/cps/en/natohq/news_179231.htm)).” The Deputy Head of NATO’s Innovation Unit followed with a [commitment to its responsible use](https://www.nato.int/docu/review/articles/2020/11/24/artificial-intelligence-at-nato-dynamic-adoption-responsible-use/index.html). The US Department of Defense (DoD) adopted [Ethical Principles for AI](https://www.ai.mil/docs/Ethical_Principles_for_Artificial_Intelligence.pdf) in 2020 and has [committed to bringing together NATO member and partners](https://breakingdefense.com/2020/09/13-nations-meet-on-ethics-for-military-ai/) to operationalize these principles. Despite these statements and developments, more work is required to tackle the very real [challenge that ethical AI](https://tnsr.org/2020/03/allies-and-artificial-intelligence-obstacles-to-operations-and-decision-making/) will pose to future interoperability within NATO.

Without a NATO-led initiative focused on aligning these ethical principles across the Alliance, the interoperability risk of nations fielding AI-based systems that hinder joint operations is high. As the foremost security framework for Europe and North America, as well as the leading defense alliance for promoting and protecting democratic values, NATO is able to facilitate alignment on this issue. As part of a [broader strategy on emerging and disruptive technologies](https://www.defensenews.com/opinion/2020/12/08/nato-needs-a-strategy-for-emerging-and-disruptive-technologies/), NATO must prioritize ethical AI if it wishes to promote the shared values upon which it was founded, play a key role in facilitating innovation across the Atlantic, and ultimately retain the ability of its members to undertake joint operations.

Establishing NATO ethical AI principles is the first step toward both technical and political alignment, in turn enhancing and fostering interoperability, which is the foundation for NATO to respond to emerging threats as an Alliance, in a flexible and timely manner.

A key challenge for NATO is raising awareness that the answers to ethical questions can no longer be left to later stages of the development and procurement cycle. [Decisions made at the political and legal level](https://hcss.nl/sites/default/files/files/reports/Towards%20Responsible%20Autonomy%20-%20The%20Ethics%20of%20RAS%20in%20a%20Military%20Context.pdf) will have a significant impact on the engineering practices used to develop AI, as well as the technical characteristics of the AI-based systems. The answers to questions such as respecting human dignity, human control, and accountability will be the foundation upon which many technical elements are programed. Systems developers need to make a number of calls throughout the development cycle informed by the answers to key questions, including:

how to label data

what data to use, and

what is an acceptable outcome?

These answers will also impact how AI systems are evaluated and ultimately deployed.

If individual nations or groups are left to develop their own ethical principles without wider alignment to NATO, the result will be a number of AI-based systems with varying technical specifications based on the legal and policy decisions made by individual governments when answering the key questions. As has been demonstrated in areas such as [facial recognition](http://sitn.hms.harvard.edu/flash/2020/racial-discrimination-in-face-recognition-technology/) and [policing algorithms](https://www.technologyreview.com/2020/07/17/1005396/predictive-policing-algorithms-racist-dismantled-machine-learning-bias-criminal-justice/), the assumptions made by those developing the tools and answering the key questions have a significant impact on the real-world functioning of the tool and societal acceptance of its ethics. The risk of tools failing to gain acceptance depends on the legal and ethical decisions made by governments. For the military, this may mean one state using an AI-based system that is seen as unacceptable by another, and in a joint operation one state fielding a system that cannot be used by another. Or worse yet, this could render a joint operation impossible. Without the ability to interoperate across NATO, the inability to effectively and efficiently respond to future threats would undermine the Alliance.

The role of the private sector is another aspect of ethical AI development that has proved a challenge to governments and the transatlantic relationship. Within states, governments have struggled to adequately regulate Big Tech firms, which has led to these [companies encroaching on government responsibilities](https://www.ft.com/content/7f85a5ff-326f-490c-9873-013527c19b8f) to protect and uphold the public interest. This encroachment permeates all aspects of government, including defense and security. As Deputy Secretary of Defense Kathleen Hicks discussed during her confirmation hearings, the lack of competition is also [a challenge to innovation](https://www.defensenews.com/congress/2021/02/02/to-keep-up-with-rivals-dod-nominee-will-weigh-consolidation-vs-innovation/) in the private defense industry. This, along with a lack of regulation, feeds into the [power imbalance](https://www.centre4innovation.org/stories/data-driven-public-private-partnerships-3-areas-of-risk-for-public-organisations-to-understand/) between the sectors. Consequently, private sector companies building the AI and AI systems that are or will be deployed on the battlefield are deciding the ethics policies for themselves.

The transatlantic partnership must focus on coordinating these core principles and systematic governance to ensure AI systems development aligns with the rule of law and democracy. In particular, this must ensure answering questions about human dignity, human control, and accountability. NATO is the ideal defense and security forum for this alignment. Given the US lead on adopting ethical principles for the entire DoD and the EU’s drive to assert checks and balances for private-sector tech companies, NATO remains the organization that can bring these two together and establishes the ethical bottom line. These will then ensure the [diverging legal and ethical stances towards Big Tech](https://fivebooks.com/best-books/luciano-floridi-philosophy-information/) do not lead to an interoperability barrier in the future. If [developments surrounding](https://fas.org/sgp/crs/row/IF10896.pdf) the General Data Protection Regulation (GDPR) and the challenges it brought for [U.S.-based, data-driven companies](https://www.wsj.com/articles/companies-face-uncertainty-over-challenges-to-trans-atlantic-data-transfers-11569013484) are any indication, a strong transatlantic led initiative is needed in order to ensure the same challenges do not hinder NATO.

The solution to the challenge that ethical AI poses for the future of interoperability within NATO is for the Alliance to establish shared transatlantic ethical principles, informed by the US DoD, the EU, and others. Establishing these principles will not only strengthen transatlantic political relations; more technically, it will allow for the establishment of standardization agreements and inform training and education initiatives of the Alliance in the future.

#### Interoperable allied AI systems are critical to future military effectiveness.

**Reeves 21** --- Lead Partner, Digital Defense.

Thomas, 2021, “Military interoperability in the intelligent age of warfare,” Deloitte, https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Public-Sector/gx-gps-fowf-military-interoperability-in-the-intelligent-age.pdf

Interoperability has become the cornerstone of successful military operations and the critical element for future military effectiveness against threats ranging from grey zone disinformation campaigns, to defending the rules-based international order, and peer warfare. Future conflict success will require rapid pace, precise understanding, quick decisions, and coordinated effects to disrupt enemy activity. Interoperability between departments, agencies, allies, and domains will deliver critical outcomes to achieve campaign goals faster at strategic and operational levels.

There is just one problem: current military interoperability is highly people intensive, and people are slower than machines. It takes enormous teams to create interoperability environments, staff the processes for effective integration, and create the tools and products that deliver the results. For example, completing a multinational 24-hour Air Tasking Order can require hundreds of people to plan and interact across domains, forces, and services, and the process is continuously repeated. It is a demanding and time-consuming activity that needs to be accurate and trusted or else the mission may fail.

But is that the best use of human talent? Analyzing data points, deconflicting with other militaries, and planning logistics simply to provide air operations? And can such human-centric processes provide an advantage on a future battlefield suffused with data and where decisions need to be made faster than ever before? Arguably, no. To make interoperability the strategic and operational advantage we need it to be, we must automate more of it.

Combining automation and interoperability isn’t new. Outside the military we are witnessing significant reductions in human activities in the current Intelligent Age as machines and automation replace human talent. Intelligent organizations are enhancing people with AI, where machines support all decisions, improving trust between humans and machines and their outcomes. But more than just automation, digital supply networks merge smart tools, like AI, with integration. Smart factories and production facilities are connected across borders in a manner increasingly necessary to keep pace with the rate of consumption and trade today. The combination of Intelligent Age machines, like AI, with Intelligent Age practices, like digital supply networks, has changed global commerce, and it can change warfare too.

#### That’s because every facet of modern warfare is being revolutionized by AI.

**Carnegie 19**, 11-28-2019, "Artificial Intelligence and the Future of Conflict," Carnegie Europe, https://carnegieeurope.eu/2019/11/28/artificial-intelligence-and-future-of-conflict-pub-80421

Modern warfare is based on unprecedented connectivity between and within three categories of the battlefield, which together build complex battle spaces. The first category is the physical domain, in which ballistic missiles, main battle tanks, aircraft, the weaponry of ground infantries, and other military hardware are used to degrade or destroy an adversary’s physical resources.

The second battlefield is the information technology space. Here, each side tries to gain superiority by improving the way information is shared, connecting space-based intelligence to weapons systems, or calculating the trajectory of an incoming ballistic missile. For example, a combatant may use electronic warfare to try to blind an adversary’s acquisition radars before an airstrike.

The third battlefield is the cognitive space, where information operations and political warfare take place. Cyberspace straddles the informational and cognitive battlefields. Fifth-generation aircraft such as the F-35 and Russia’s influence operations use cyberspace to produce, disseminate, control, and monitor information.

In the future, victories will increasingly depend on the systematic synchronization of the physical, informational, and cognitive battlefields, all augmented by algorithmic warfare. This triad will redefine essential military concepts such as the center of gravity, the fog of war, and the concentration of forces. In the age of AI, big data, and robotics, concept development will be more important than ever. This will be an unending task because new concepts will need to constantly change to keep up with countermoves such as adversarial algorithms and data-poisoning attempts, which involve feeding adversarial data to AI systems. Such attacks try to alter what AI learns from training data or how it solves classification or prediction problems.

In the near future, more breakthroughs seem imminent. Advances in neuroscience, behavioral biology, and other fields will enable new technological leaps such as human-machine teaming and increased autonomy in military systems.3 Robotic swarms—the “collective, cooperative dynamics of a large number of decentralized distributed robots,” in the words of AI researcher Andrew Ilachinski—form another field in which computer science and robotics follow in biology’s wake.4

Human-machine collaboration is likely to bring about faster and better decisionmaking by enabling enhanced management of massive data streams. Humans and AI systems have very different decisionmaking mechanisms, which result in completely different kinds of errors when they fail. By combining the strengths of humans and machines, it may be possible to eliminate those weaknesses. Such teaming trials have already been carried out in the military realm.5

New technologies encourage people, groups, and states to conduct influence operations and manipulation at scale. Intelligent machines can identify susceptible groups of people and “measure the response of individuals as well as crowds to influence efforts,” according to Rand Waltzman, deputy chief technology officer at RAND Corporation. Cognitive hacking, a form of attack that seeks to manipulate people’s perceptions and behavior, takes place on a diverse set of platforms, including social media and new forms of traditional news channels. The means are increasingly diversified, as distorted and false text, images, video, and audio are weaponized to achieve the desired effects. Cognitive security is a new multisectoral field in which actors engage in what Waltzman called “a continual arms race to influence—and protect from influence—large groups of people online.”6

AI could cause drastic changes in hybrid warfare, which is a major concern for NATO. States and nonstate actors can use cyberspace to influence large groups of civilians and opposing forces. From reconnaissance activities and the profiling of target audiences to the weaponization of distorted or fake information and psychological operations, AI broadens the potential of information operations.

#### Streamlining the process through NATO itself is key. No other institution has the capacity.

**Stanley-Lockman & Trabucco 22** --- \*Defense and Strategic Studies, Nanyang Technological University. \*\*Political Science, University of Copenhagen.

Zoe & Lena, “NATO’s Role in Responsible AI Governance in Military Affairs,” Oxford Handbook, https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780197579329.001.0001/oxfordhb-9780197579329-e-69

At the core, this chapter argues that NATO is well positioned to steward the development of military AI and institute governance mechanisms towards coalition inclusion of responsible AI while simultaneously maintaining incentives for comparative advantage. Using the three pillars—ethics and values, legal norms, and safety and security—as issue areas which present AI governance challenges, we show that NATO has space to emerge as a leader in AI governance and contribute to responsible adoption of EDTs in the international security environment. This builds on foundations that derive NATO’s responsibilities to govern AI according to its values, legal obligations, and institutional interests. These foundations from both STS and military innovation studies offer ways that the Alliance can activate its existing governance mechanisms to exert influence in new ways. Not only is this influence important for the Alliance to bolster its institutional relevance in an evolving international security architecture, but it also dovetails with its capacity to shore up military effectiveness and interoperability as Allies modernize their arsenals and associated concepts into the frontier of AI.

Importantly, we do not argue NATO is the only—or even the most important—actor shaping AI governance in international security. Other contributors in this Handbook impressively detail efforts at both state and regional levels. Our aim has been to convince sceptics that NATO has a role that is not replicated by other stakeholders in the international security environment. NATO has particular influence, procedures, and the competency to institute certain governance mechanisms—namely standardization and policy planning—that it can build on without needing to expend time building new institutions from scratch. Beyond just a role, NATO is incentivized to emerge as a steward of AI governance and use these mechanisms for future operations, should the Alliance wish to maintain its unique position as a leader encouraging policy alignment, defense planning, and military standardization.

**That’s key to a litany of impacts---terrorism, authoritarianism, and disinformation.**

**Kolga 21** – founder of DisinfoWatch.org and is a senior fellow at the Macdonald-Laurier Institute’s Centre for Advancing Canada’s Interests Abroad

Marcus Kolga, "Improving NATO’s cohesion is critical to combat Russia and China’s threat: Marcus Kolga for Inside Policy," Macdonald-Laurier Institute, 10-5-2021, https://macdonaldlaurier.ca/improving-natos-cohesion-critical-combat-russia-chinas-threat/

A united NATO is critically important to projecting credible deterrence. The erosion of domestic trust and confidence in the Alliance among its member states, including Canada, represents a threat to this cohesion. A proposal to withdraw Canada from NATO was tabled at a recent policy conference for one of Canada’s three major political parties. The proposal was defeated, but it represents a fringe anti-NATO narrative within Canada’s illiberal left; if left unaddressed, such a narrative could grow.

If countries like Russia perceive NATO as an atomized collection of states with varied priorities rather than a unified front, the Alliance is exposed to a significant risk of miscalculation in which a foreign adversary might believe they can cross a red line and only face a limited response. Thus, gaps in cohesion within the alliance directly threaten to undermine political and military deterrence. The Alliance and members states must work towards improving communications strategies to foster greater basic general understanding of NATO’s purpose, its missions and its role in protecting its members against external threats.

Similarly, if we see threats as atomized or disparate, we may lack the capacity to adequately respond. Organized GRU terrorist attacks in Czechia, the Salisbury poisonings, transnational repression and censorship, cyberwarfare, disinformation, and overt military posturing all pose threats that are aimed at the same essential goal: undermining and supplanting the power of liberal democracy and advancing authoritarianism. Through this lens, challenges posed by other actors, including China, must also be considered as part of the broader range of shared threats posed to the democratic community as a whole.

If we are to succeed in tackling these shared threats, greater transatlantic cooperation is needed. It cannot remain stagnant, however; it must evolve and expand. The serious nature of the threats, their potential to become kinetic, and the possibility of adversarial coordination (whether formal or informal) means that we must expand our tools to meet these challenges.

In the case of Ukraine, on whose border the Kremlin mobilized over 100,000 troops this past summer, the Alliance should consider extending a Membership Action Plan despite the skepticism of some allies. Ukraine must also be empowered in a similar fashion to frontline NATO states like the Baltic states and Poland. After all, the eFP mission in Latvia not only provides military deterrence, but strengthens interlinkages, develops societal resilience, and provides clear and sustained solidarity.

Finally, the growing threats of foreign interference, information warfare, cyber attacks and emerging threats to Canada’s Arctic requires a coherent long-term strategy and an evolved notion of collective defence, which includes strengthening our partnerships with non-NATO allies in Europe, Asia, and around the world.

#### Russia’s integrating autonomous systems into their military. Failure to adapt will drastically change the global balance of power.

Garamone 20 – Reporter - United States Department of Defense.

Jim Garamone, September 9 2020, “Esper Says Artificial Intelligence Will Change the Battlefield,” U.S. Department of Defense, https://www.defense.gov/Explore/News/Article/Article/2340972/esper-says-artificial-intelligence-will-change-the-battlefield/

Artificial intelligence has the potential to change the battlefield, and the country that's first to field it will have enormous advantages over competitors, he told participants today.

"History informs us that those who are first to harness once-in-a-generation technologies often have a decisive advantage on the battlefield for years to come," the secretary said. "I experienced this firsthand during Operation Desert Storm, when the United States' military's smart bombs, stealth aircraft and satellite-enabled GPS helped decimate Iraqi forces and their Soviet equipment."

Artificial intelligence has the potential to be even more far-reaching than those technologies. "Unlike advanced munitions or next-generation platforms, artificial intelligence is in a league of its own, with the potential to transform nearly every aspect of the battlefield, from the back office to the front lines," he said. "That is why we cannot afford to cede the high ground to revisionist powers intent on bending, breaking or reshaping international rules and norms in their favor — to the collective detriment of others."

Esper noted that Russian President Vladimir Putin said the nation that leads in AI will be the "ruler of the world," and Russia has increased investments in the technology. "His intent is to employ any possible advantage to expand Russia's influence and chip away at the sovereignty of others," Esper said.

The Russians used a sophisticated and well-coordinated combination of unmanned aerial vehicles, cyberattacks, and artillery barrages to inflict severe damage on Ukrainian forces when they invaded that country. "Since then, Moscow has announced the development of AI-enabled autonomous systems across ground vehicles, aircraft, nuclear submarines and command and control," he said. "We expect them to deploy these capabilities in future combat zones."

 These principles make clear to the American people — and the world — that the United States will once again lead the way in the responsible development and application of emerging technologies, reinforcing our role as the global security partner of choice."

#### Ukraine’s only the beginning. AI warfare will be an intractable factor in every future confrontation with Russia.

**Sharma 5/30** --- Dr Sanur Sharma is Associate Fellow at Manohar Parrikar Institute for Defence Studies and Analyses.

Sanur, NATO’s AI Push And Military Implications – Analysis, May 30, 2022, Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA)

Introduction

The technological advancements in Artificial Intelligence (AI), machine learning, big data analytics, robotics, quantum computing and virtual reality have led to the rise in use of autonomous systems in military applications. This is changing the face of the battlefield by enabling new forms of military functions, over and above the conventional systems, thus enabling the execution of higher coercive actions. The North Atlantic Treaty Organization (NATO) countries are also adopting such emerging technologies to maintain their strategic advantage and to mitigate transnational threats.

Russia’s offensive cyber hostilities and China’s military adoption of AI for augmenting its high-tech warfare mechanisms have emerged as the contributing factors for NATO to upscale its technological efforts in Emerging and Disruptive Technologies (EDTs). NATO is making ambitious investments in EDTs to ensure interoperability and standardisation among member states.

This Issue Brief takes stock of the current strategic surge by NATO in AI adoption and its ongoing efforts to exploit EDTs for defence innovation and adoption. It discusses the role of AI in contemporary conflicts, specifically NATO’s response to the Russia–Ukraine conflict, and explores the vulnerabilities in the AI systems as well as the challenges and limitations in AI adoption by NATO.

NATO’s Technological Push

The US National Security Commission Report of 2021 states that China is leapfrogging to new technologies by investing in intelligentised warfare like swarm drones and using AI for reconnaissance, electromagnetic countermeasures and coordinated firepower strikes.1 The US is jointly working with its allies on the policy implications of such new technology. It is also partnering with countries like Canada, Denmark, Estonia, the UK, France and Norway, to work on military standards on AI.2

In October 2021, NATO formally adopted the first AI strategy on the responsible military use of AI with three core tasks: collective defence, crisis management and cooperative security.3 NATO’s strategy aims to accelerate the uptake of AI for military systems.4 The six principles of the NATO’s AI strategy include: Lawfulness, Responsibility and Accountability, Explainability and Traceability, Reliability, Governability and Bias Mitigation.5 This strategy aims to protect, monitor and innovate AI and related disruptive technologies in a phased manner to establish political support for AI military projects.

The strategic surge in EDTs is driven by the accelerated investment towards the military adoption and innovation of EDTs and maintaining a sustainable innovation ecosystem that can be achieved through civil–military collaboration. In 2021, NATO endorsed the strategy on EDTs that included AI and machine learning among the seven identified key technologies (Data, AI, Autonomy, Quantum, Space, Biotechnology, and Hypersonic).6 The strategy plans to invest US$ 1 billion in building test centres across Europe and North America, focusing on emerging technologies like AI, Quantum and hypersonics.7

In the NATO Summit held at Brussels in 2021, as a part of the NATO 2030 Agenda, NATO’s new Defence Innovation Accelerator for the North Atlantic (DIANA) was launched. It aims to maintain NATO’s technological edge compared to nations like China and Russia, which are challenging the West with their accelerated investments to build technological capacity and use offensive subversive measures.

DIANA has been assigned to manage the NATO Innovation Fund, receiving a funding of US$ 82.6 million a year for 15 years.8 It will explore the future roadmap of implementation of advanced technologies and competition to foster transatlantic cooperation.9 At present, there are 10 accelerator sites with more than 50 test centres in technological hubs across the states.10 The NATO advisory group on EDTs is an external body that advises NATO on the optimisation of its innovation efforts. This group provides recommendations on improving collaboration and partnerships with the private sector, industry, and academia. In addition, there are other bodies like the NATO Advisory board, Allied Command Transformation (ACT), NATO’s Science and Technology Organisation (STO), and NATO Communication and Information Agency (NCIA) that support the alliance’s adoption of deep technologies and EDTs.

NATO’s AI Influence in Russia–Ukraine Confrontations

AI has been a contributing agent in weaponising cyberspace and augmenting cyberwarfare to the next level in modern battlefield scenarios. While some of its uses such as in scaling of data analytics, data fusion, deep fakes, cyber defence have matured, its use in autonomous weapon systems and other complex operational applications are at a nascent stage.

AI has been aggressively used to spread disinformation in the Russia–Ukraine War. Machine learning algorithms have been used to amplify misleading and fake content on social media platforms, like doctored videos of invading forces and fake live streams. On the other hand, it has also been used for anomaly detection, identification of disinformation and for cybersecurity. AI uses natural language processing algorithms, machine learning and deep learning to identify anomalies in the text data, images and videos.

Russia is said to have used AI-enabled systems not only on the battlefield but also in cyberspace, targeting the critical infrastructures of Ukraine.11 Russian troll farms have been alleged to have used AI-enabled systems to generate human faces for fake propagandist personas on social media platforms like Twitter, Instagram and Facebook.12 NATO countries have also used AI to help Ukraine counter such AI-based attacks. Private companies are also playing a role in the unfolding AI battlespace. US-based companies like Snorkel AI, a data science platform, has made its services accessible to federal authorities for the detection of anomalous signals and adversary communications in order to access high-value information for better decision-making.13

Similarly, Ukraine has been given free access to Clearview AI facial recognition software, which has a database of 2 billion photos crawled from Russian social media platforms. This software is being used for the detection of Russian forces and to identify the dead and gauge the spread of disinformation in cyberspace.14 AI’s analytical potential has been tapped by companies even before the Russia–Ukraine war started. In December 2021, a geospatial data firm, SpaceKnow, claimed to have detected a military presence in Yelna, a Russian town.

The Russia–Ukraine conflict has become a test case for AI adoption in modern warfare. The US is using the conflict as a test-bed for many of its AI projects with the Pentagon’s ‘Maven’ project having contributed to the detection and classification of objects of interest from various drone footage through AI and Machine Learning (ML) algorithms. It has been reported that the Pentagon has been using AI and ML tools to collect a vast amount of data on the Russia–Ukraine war and analyse it to learn and generate battlefield intelligence about the Russian command and control strategies.15

The advanced AI-enabled systems with the US Department of Defense (DoD) are said to have been used for overseeing the battlefield and collecting and archiving signals intelligence. It was stated at the Defense One’s Genius AI Summit in April 2022 that all this information will be fed into systems for training of machine learning algorithms to support future decision-making processes.16 It is believed that the US and NATO allies have already built such AI-enabled cyber weapons and defences, information about which is said to be highly classified.17

The US DoD and its allies have taken advantage of these advanced tools to gather critical information from the publically available image data to thwart Russian attacks in Ukraine. This war data will also help NATO allies anticipate adversary attacks, their behaviour, and the use of advanced technologies in the real world by countries like China and Russia. This intelligence will also augment multifactor analysis and modelling changes dynamically by integrating different technological platforms.

Due to the sanctions imposed on Russia as a result of the Russia–Ukraine war, its AI development is expected to slow down. The ongoing conflict highlights the constraints around the use of AI. Despite AI-enabled cyber-attacks and misinformation campaign by Russia, Ukraine has mounted effective counter-cyber operations.18 Russia’s limited use of AI in the conflict can be explained through the existing vulnerabilities in the AI systems that can be exploited in many ways. One hypothesis for Russia’s limited use of AI could be the trust in such systems where it is a matter of lives and military objectives at stake.19

The vulnerabilities in the AI systems can include data poisoning and input attacks, attacking the supply pipelines by simply crafting data and feeding it to public resources, white-box and black-box attacks.20 There is always a chance of orchestrated and conflicting data in the face of AI models to derail them and to exploit the vulnerabilities in the algorithms, and active manipulation by the adversaries can be induced.

Defense Advanced Research Projects Agency (DARPA) has launched a Guaranteeing AI Robustness against Deception (GARD) programme. Under this programme, development efforts are being made to establish a theoretical foundation for defensible ML and the creation and testing of such systems.21 The Army Research Laboratory (ARL) is working with the Internet of Battlefield Things Collaborative Research Alliance (IoBT-CRA) to explore the use of ML and intelligent technology on the battlefield and strengthen the collaboration between autonomous actors and human soldiers in combat. They are also working on methods to understand the challenges of AI-enabled systems employed on the battlefield and to make them less susceptible to attacks.22

AI technology in modern warfare will be an intractable weapon in future conflicts beyond Ukraine.Countries trying to achieve a technological edge over others have started considerable investments in AI technology to strengthen their militaries. NATO has invested US$ 1 billion to develop new AI defence technologies. The US DoD has also planned to invest US$ 874 million in AI-related technologies as a part of their army research and development budget (federal fiscal year 2022 DoD budget).23 The UK DoD is funding suppliers to work with Defence Science & Technology Lab (Dstl) on AI projects which were £7million for the year 2021/22 and is supposed to increase to £29 million in the next year.[24](https://www.idsa.in/issuebrief/natos-ai-push-and-military-implications-ssharma-240522#footnote24_sxbrlaa)

#### Failure to successfully check Russia causes cascading conflicts throughout Europe --- great power war.

Graham 22 — Thomas Graham, Distinguished Fellow at the Council on Foreign Relations, Cofounder of the Russian, East European, and Eurasian Studies Program at Yale University, 2022 (“Preventing a Wider European Conflict,” *Council on Foreign Relations,* March 8th, Available Online at https://www.cfr.org/report/preventing-wider-european-conflict#chapter-title-0-1)

The large-scale Russian invasion of Ukraine now underway could quite plausibly precipitate a wider conflict in Europe. The United States is focused primarily on raising the costs to Russia with punishing sanctions and reassuring North Atlantic Treaty Organization (NATO) allies neighboring Russia of its commitment to collective defense. Less attention has been given to containing the war to Ukraine and preventing its escalation into a broader European conflict.

The stakes are enormous. The ripple effects of a wider conflict in Europe would spread across the globe, stressing the geopolitical, economic, and institutional foundations of the international order the United States has fashioned and underwritten since the end of the Second World War. It would test the resilience of the U.S. global system of alliances, the international financial system, global energy markets, arms control regimes, and global institutions in the face of ever more violent great power competition. No region of the world would be spared, although developments on the Eurasian supercontinent, the other locus of world power and economic might outside North America, would bear the gravest consequences for U.S. interests.

The Contingency

The Russian military intervention in Ukraine could easily escalate into a larger conflict stretching from the Baltic to the Black Sea and further west into Europe. Although Russia, wielding massive military superiority, might overrun Ukrainian forces in a matter of weeks, stabilizing and pacifying the country will likely prove to be a grueling and costly affair. A significant Ukrainian resistance movement is almost certain to emerge. With sustained Western support, it could prolong the warfare for months, if not years. The first wave of sanctions that Washington has levied on Moscow could be followed by others in a continuing effort to raise the cost to Moscow and force it to yield. A negotiated end to the conflict will not come easily, since Washington has framed it in Manichean terms as a world historical struggle between the democratic West and the aggressive, malevolent, and autocratic Russia. Anything short of “victory” will be decried as surrender or appeasement in the West, while Russia will not capitulate on a matter it considers vital to its security and prosperity.

The stage is thus set for an escalating cycle of violence, with Moscow seeking to stamp out a Ukrainian insurgency and retaliate against Western efforts to stop Russia’s advance. If the conflict wears on, Moscow could be increasingly tempted to expand its military operations further into Europe to achieve its goals.

As a first option, Russia could intensify pressure on states neighboring Ukraine (e.g., Hungary, Poland, Romania, and Slovakia) that could provide safe havens for insurgents or the inevitable government-in-exile. It will doubtless reinforce its military presence in Kaliningrad and elsewhere in the Baltics and patrol the Baltic Sea more aggressively. It could deploy hybrid-war tactics—cyberattacks, disinformation campaigns, and economic sabotage—to destabilize countries providing safe havens. If those actions did not sufficiently degrade the resistance, Moscow could even launch direct attacks on insurgents and their supporters outside Ukraine, as well as attempt to assassinate leading figures in the government-in-exile, akin to the attacks it has made on Chechen rebels and Federal Security Service (FSB) defectors in Europe in recent years. Such steps could, at a minimum, draw frontline NATO states directly into the military conflict with Russia, obligating the United States and other allies to come to their defense.

To build up further pressure, Moscow could also “weaponize” the inevitable refugee flows into neighboring states. Refugees, who would likely number in the millions, would move first into unoccupied Ukrainian territory but eventually into adjacent European states, which have shown little tolerance for outsiders. Moscow could use harsh military and police tactics that would increase the number of refugees and seek to guide them into countries where they would create the greatest socioeconomic stress, such as Moldova. In addition, Moscow could increase the tension by pushing Belarusian President Aleksandr Lukashenko to again seek to push thousands of Middle Eastern migrants across the borders into Poland and Lithuania. That could lead to border clashes, as it almost did on occasion last fall, with Russia supporting its ally, Belarus, and NATO states coming to the defense of allies under attack.

A second option Moscow could pursue is opening up a second front in the Balkans. In recent years, Russia has taken a number of destabilizing actions in the region, seeking to weaken Montenegro after its accession to NATO, exacerbate tensions between Serbs and Bosniaks in Bosnia-Herzegovina, and undermine relations between Serbia and Kosovo. As it fought in Ukraine, Russia could encourage Republika Srpska leader Milorad Dodik to press for separation from Bosnia, threatening to reignite the bitter wars of the 1990s in the former Yugoslavia. A Balkans war would complicate the security calculus of all countries in the region, as well as that of Germany and France, which have significant interests there. To quell the fighting, NATO countries could decide to use military force against Bosnian Serb forces enjoying Russian support.

A third, riskier, option would be to directly attack the United States, the country that Moscow believes is orchestrating a larger anti-Russia campaign. In response to Western sanctions designed to crater Russia’s financial system and undermine critical industries, Moscow could launch major cyberattacks against U.S. critical infrastructure. If a cyberattack were to take down a major financial institution or corrupt its records, the ensuing havoc in U.S. markets could prompt overwhelming public and congressional pressure for a forceful response.

The U.S. and NATO response to Russian actions will impact Moscow’s decisions on the conduct of the conflict. Both a weak response and an excessively harsh one could lead to escalation. In the first case, Moscow could be tempted to press militarily even further into Europe to enlarge its sphere of influence. Vladimir Putin has demanded that NATO withdraw its forces back to the lines they held in 1997, when the NATO-Russia Founding Act was signed and the first wave of post−Cold War expansion remained in the future. His remarks announcing the start of hostilities against Ukraine hinted at a broader effort to restore Russia’s control over all of the former Soviet Union. That could include military action against the Baltic states, especially Lithuania, through which Moscow could try to carve out a land corridor to Kaliningrad, a Russian exclave on the Baltic Sea. NATO would have little choice but to provide military aid to those states if it did not want to forfeit its role as the central pillar of European security.

Crippling sanctions, meanwhile, could provoke Putin to lash out with greater violence. If Putin felt cornered, he could escalate the conflict either horizontally to other countries or vertically to the nuclear level in a desperate effort to save himself, his regime, and, in his mind, Russia itself. And he could find considerable public support for such a reaction. Already, some Russians believe that U.S. and EU sanctions are aimed not simply at the leaders behind the war but, by cratering the economy, at all Russians.

Warning Indicators

As is the case with the current crisis in Ukraine, Moscow’s intentions will remain ambiguous. The indicators of an approaching escalation in the conflict beyond Ukraine are likely to fall into three categories.

The first indicators that political and military conditions are increasing the risk of broader conflict include a breakdown in channels of communication with Moscow. The absence of active diplomatic ties would preclude a negotiated resolution of the conflict in Ukraine. An end to U.S.-Russian military-to-military channels would undermine any effort to avoid direct military conflict between the two countries. Another indicator would be major insurgent successes that dramatically increase Russian casualties. Moscow would be tempted to move more aggressively against insurgent safe havens rather than capitulate on what it considers to be its vital interest in Ukraine.

Second are the indicators that Moscow is preparing for a broader conflict, which it would undoubtedly argue had been forced by Western actions. Such signs include Kremlin efforts to prepare the Russian public for a wider conflict, which could entail official statements, greater media focus on escalating Western “aggression,” an increased pace of civil defense drills, and mobilization of reserves. Another indicator includes the massing of Russian forces in the Baltic region. It could include such moves as aggressive hybrid actions to destabilize Poland and the Baltic states, coupled with efforts to rally indigenous ethnic Russian communities against their governments.

Third are the indicators that Moscow is intentionally seeking to widen the conflict. This could include greater support for Bosnian Serb leader Dodik, such as diplomatic and financial backing, and provision of weapons. They could also encourage Serb leaders to more assertively pursue their grievances against Kosovo.

Implications for the United States

A wider European conflict would pose the stiffest challenge to the global standing of the United States since the end of the Cold War and to the international system it has built and underwritten for decades longer. It would test the durability of its global system of alliances and the efficacy of international regimes and institutions that have guarded world peace, security, and prosperity. The challenge would come at a time when the United States itself is in immense disarray, as a deeply polarized polity confronts massive domestic problems—the pandemic, inflation, racial justice, and cultural wars—that leave less time and fewer resources for foreign matters. The United States will be tested to see whether it can muster the will, energy, and creativity to execute an effective policy toward the unfolding crisis in Europe.

#### Independently, fragmented allied AI systems risk accidents and miscalculated escalation.

**Stanley-Lockman & Trabucco 22** --- \*Defense and Strategic Studies, Nanyang Technological University. \*\*Political Science, University of Copenhagen.

Zoe & Lena, “NATO’s Role in Responsible AI Governance in Military Affairs,” Oxford Handbook, https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780197579329.001.0001/oxfordhb-9780197579329-e-69

Even without being attacked, governability of AI in a NATO context also means understanding how AI-enabled and autonomous systems developed by the 30 Allies – and other partners – will interact with one another. NATO has expressed interest in governability as a principle of AI “to disengage or deactivate in case of unintended behaviour,”86 which echoes the U.S. Department of Defense definition of governable AI.87 Disengaging adversaries is important to maintain de-escalation measures in conflict. For NATO, interoperability between systems also relates to governable AI because allies must also consider how the interactions between the 30 Allies’ own AI-enabled and autonomous systems may result in unintended or emergent behaviour.88 This means that NATO has a responsibility to coordinate activities – be they technical exchanges, standardisation efforts, or training and exercises – to build confidence that the systems perform as humans intend.89 Without this coordination, the lack of interoperability of allied systems could lead to accidents, and separately, the potential loss of operational effectiveness also presents vulnerabilities for adversaries to exploit.

In addition to governability, NATO and its Allies are assessing the risks that bias, attacks, and lack of interpretability can introduce in relation to the anticipated uses of a given AI system.90 In security and defence, new and heightened risks include poisoning of the information environment, deception systems and techniques, uncertainty about the performance of systems in new and unknown environments, and the possibility that tensions or accidents escalate at a faster tempo than humans and institutions can process, among others. These risks can manifest either in motivated attacks or unintentional failure modes.91 In both cases, assuring and certifying that military assets are safe and secure is important given the inherently high risk in operational environments. These operational environments include the presumption that an adversary is disrupting one’s own systems, be it by directly attacking the AI systems themselves, or disrupting the broader command, control, and communications systems under which the AI systems are operating.92

#### The AFF solves---it standardizes AI rules for NATO members that builds upon existing principles.

**Sharma 5/30** --- Dr Sanur Sharma is Associate Fellow at Manohar Parrikar Institute for Defence Studies and Analyses.

Sanur, NATO’s AI Push And Military Implications – Analysis, May 30, 2022, Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA)

NATO’s AI Adoption: Challenges and Limitations

The influence of AI on NATO comes with a set of opportunities, challenges and risks. Its adoption process has been incremental and prescriptive. The rising geopolitical conflicts and the use of AI in such conflicts have required the establishment of a dynamic ecosystem to support interoperability. The military adoption of AI requires an innovation ecosystem that is self-sufficient, supports deterrence and resilience, and encompasses the strategic innovation process.

NATO’s AI strategy raises many concerns related to the AI-driven autonomous weapon systems, as it does not adequately address the development of such systems, its deployment and governance. The AI strategy mostly talks about the ethical and responsible use of AI and has omitted the challenges related to the use of lethal autonomous weapon systems. For the US, its priorities lie in ensuring responsible use of AI-enabled systems with their allies for operational and data sharing. It remains to be seen if all the 30 NATO states agree on the same rules and would be willing to agree on practical guidelines for the operational use of AI-enabled systems.

Another challenge for NATO is to standardise rules for all member states in dealing with AI-enabled autonomous weapon systems. Countries like Turkey are working on autonomous weapons and have developed AI-enabled loitering munitions. Turkey has requested the US for upgraded F-16 fighter jets that are said to be AI-enabled.25 The Biden Administration has asked the Congress to approve the upgrade of Turkey’s F-16 fighter jet fleet.26 Turkey’s armed drones have also been used in the Ukraine conflict. For smooth functioning of such systems, it will be necessary for all NATO members to have standardised rules when it comes to deployment of such systems.

Also, there is no transparent allocation of roles for different NATO bodies, and “no dedicated line of funding” for its AI strategy.27 The finances are shared through multiple funding like NATO Innovation Fund and DIANA which manages funding for various other projects leading to uncertainty over availability of funds and budget cuts. This will be a significant challenge for the effective implementation of the AI strategy.28 Some other challenges with the adoption of AI strategy through innovation include fragmented national innovation initiatives, allied technological categorisation and digitisation gaps, speed of adoption and spending levels and the underuse of NATO’s mechanisms to undertake collaborative defence innovation.29

NATO will also have to focus on the vulnerabilities and intrusion issues with the AI-enabled systems and will need to set up dedicated centres for AI development and testing in order to maintain a test-safety regime for systems-of-systems employed using AI. The challenges related to AI use in wars and geopolitical conflicts need to be addressed to generate confidence in the use of such systems. Additionally, testing mechanisms and accuracy standards need to be implemented for system components. Policymakers need to address the operational risks and ethical considerations of employing AI in military systems.

Conclusion

In future, AI will act as an enabler to out-adapt competitors and adversaries. The current AI strategy of NATO needs to address the vulnerabilities in AI systems and related measures for effectively using autonomous weapon systems and military governance of AI. The NATO accelerator has been devised to address, prioritise, and promote interoperability in transatlantic cooperation to drive the strategic innovation process. The key drivers for Innovation in AI and other EDTs will be the establishment of the NATO-Civil-Military Technology capability that will include various actors from the military, civil, state and private sectors as a part of the EDT innovation ecosystem. Another critical factor is the broadening of the NATO–EU cooperation through a joint taskforce on defence innovation and EDTs to regularise and provide strategic capabilities on ethical and adoption challenges of EDTs like AI and ML.

Furthermore, NATO needs to protect the use of AI from manipulation and disruption and align it with its stated principle of “Responsible use of AI”. NATO needs to work on AI adoption challenges centred on innovation and arms control. It can look towards bringing in guiding principles on use of AI-driven lethal autonomous weapon systems. It is expected that in the next 2–3 years, AI’s use will be confined to the field of military logistics, reconnaissance, mission planning and support, predictive maintenance of a military facility, data fusion and analysis, cyber defence and optimisation of processes. In the long run, NATO could employ AI for more complex military applications as it generates greater political support for offensive AI military projects.

#### Every member says yes---US initiating the cooperation ensures allies toe the line.

Sperling 19 – Professor of Political Science at the University of Akron, PhD from the University of California, Santa Barbara, and Dr. Mark Webber, Professor of International Politics at the University of Birmingham, PhD from the University of Birmingham, Master of Social Science from the University of Birmingham, BA from the University of Warwick.

James Sperling, January 20 2019, “Trump’s foreign policy and NATO: Exit and voice,” Review of International Studies, https://www.cambridge.org/core/services/aop-cambridge-core/content/view/CECD6A4DA95D3C177531E8C10A6E562B/S0260210519000123a.pdf/trumps\_foreign\_policy\_and\_nato\_exit\_and\_voice.pdf

If exit is a credible option for the US, why has it not taken place? The answer lies in the institutional character of the Alliance. Institutional analysis of NATO is often seen as a counter to realism. The latter views alliances as mechanisms of balancing or bandwagoning in the international system with alliance formation, stability, and durability being a reflection of power configurations among states. Realism can account for the formation of NATO, its cohesion when confronted with a commonly recognised existential threat such as the Soviet Union, and its adaptation after the Cold War as the US harnessed the Alliance to new security tasks. Here, what matters is national and especially American preferences not NATO’s institutional qualities.33 Discounting institutions in this case is, however, misplaced. NATO’s permanent mechanisms of intra-alliance political consultation alongside a standing command structure (embracing defence planning, standardisation, interoperability, and a recurrent rather than one-off ability to deploy) are unique among both historical alliances and contemporary international organisations.34 Two consequences follow from the presence of these arrangements. First, NATO has assumed an elevated status in American strategic calculations. Here, the burden of defending allies is offset by NATO’s political role in aligning allied preferences with those of the US. NATO’s institutional mechanisms (the North Atlantic Council above all) make that alignment possible, ensure it is embedded, and deliver efficiencies and gains to all allies in the process. NATO thus takes on alliance-centric tasks (the security of Europe and the stabilisation of its periphery) that are of clear benefit to Europeans but which provide, simultaneously, an important security externality to the US. Second, institutionalisation has assumed a social character – the sophistication and permanency of intra-alliance mechanisms provide ample opportunities for voice and renders that articulation legitimate. One need not characterise NATO as a community organisation of democratic values35 in order to allow for this outcome. It can be seen also as the consequence of more formal properties that pertain to a sophisticated multilateral security arrangement: acceptance of the principle of consultation, agreement on common security threats and, in NATO’s case, a sense of shared endeavour built up over a decades’ long history.36 These properties are certainly open to exploitation. However, even the most powerful ally will be wont to play within the multilateral rules of the game. These, after all, are stacked in its favour and so offer a reliable means of exercising leadership and getting fellow allies to toe the line.37

All of this is not simply realism by another route. Institutions act as a vehicle within which the demands of the powerful are articulated and modified. The institution, in other words, exerts its own effect. The interaction of exit and voice in NATO bears out this assumption. A member as powerful as the US could well hold the view that NATO is underperforming its core defence function or is neglecting other tasks the US considers important. Equally, it might believe that the cost of contributing to NATO’s public security goods is too great particularly if other allies are seen to be shirking their responsibilities. America’s history of engagement with NATO has been characterised by the periodic recurrence of such tensions yet, as we shall see below, throughout it has exercised the option of voice. Voice has proven effective both in expressing dissatisfaction with NATO’s allies and advocating changes to allied business. NATO’s institutionalisation, in other words, has served to minimise the cost, and to maximise the benefits of exercising voice, just as it has served to minimise the benefits and to maximise the cost of exit.38

### Advantage 2---Norm Setting

#### NATO taking an active role in AI norm setting serves as a bulwark against illiberal AI deployments.

Zoe Stanley-Lockman & Lena Trabucco 22, Stanley-Lockman is an Associate Research Fellow in the Military Transformations Programme at the Institute of Defence and Strategic Studies at the S. Rajaratnam School of International Studies in Singapore; Lena Trabucco is a dual degree candidate pursuing a PhD in political science at Northwestern University and a PhD in Law at iCourts Center of Excellence in International Courts at the University of Copenhagen, “NATO’s Role in Responsible AI Governance in Military Affairs,” The Oxford Handbook of AI Governance, edited by Justin Bullock et al., Oxford University Press, 03/18/2022, DOI.org (Crossref), doi:10.1093/oxfordhb/9780197579329.013.69

Ethics and values

One of the vital aspects of AI which has garnered significant global attention is the ethical implications of artificial intelligence as a military technology—an issue that has divided much of the global community, including NATO member states. As a starting point, researchers and analysts have considered the implications of emerging military technology in terms of ethical responsibility and regulation, especially as states and organizations continue to release AI ethical principles, guidelines, and standards.55

We explore how NATO can operationalize the debate around ethics and values of military AI to garner coordination and continue progress of EDT harmonization among partners. Building on the theoretical discussion from STS and military innovation literature above, the adoption of technologies that reinforce values serves the strategic interest of NATO to shape technological innovation against current waves of illiberalism.

Additionally, infusing AI development with certain ethical principles and values can have operational advantages and benefits, and NATO can, in particular, promote the ethical principles as operational standards for the Allies. A common critique within the ethics debate is that approaching new technology with an ethical or democratic values-driven perspective translates into comparative military disadvantage. Essentially, if your adversary develops technology without the constraints of ethical principles then there will be diminished effectiveness on the battlefield.56 We find this critique unfounded because it assumes there is a false trade-off between ethics and effectiveness; instead, we argue ethical foundations are built into the architecture of modern warfare.57 As such, ethics is a background condition for battlefield effectiveness, which is already infused in military decision-making and helping to guide the boundaries of international humanitarian law. As such, ethical guidelines do not have to detract from a military’s capacity or competency to devise means and methods of warfare that will serve their national or coalition interest.58 If anything, a first-mover advantage can incentivize an ethical and values-driven AI to establish the threshold of technological standards globally.59

The political dimension of the Alliance rests on the bedrock of a shared commitment to the “principles of democracy, individual liberty and the rule of law,” as enshrined in the foundational North Atlantic Treaty of 1949.60 Shared values are important for NATO operations because they help constitute their legitimacy. In addition to the North Atlantic Council exerting civilian oversight over NATO operations, legitimacy also includes respect for international legal principles including the core principles of international humanitarian law, or the laws of armed conflict, distinction, proportionality, and necessity. Without political oversight and legitimacy, NATO’s military power would be less effective at shaping norms and promoting stability in the international system. The introduction of AI means that NATO has the moral and strategic imperative to adopt technologies that confer legitimacy and responsible innovation.61 Acting on a shared commitment to democratic values is vital to the political cohesion of the NATO Alliance, just as much as it is a determinant of military effectiveness in a predictable security environment.

Put simply, shared values are important to both political and operational coherence between Allies. In its 2018 Framework for Future Alliance Operations, the strategic command Allied Command Transformation urged discussion of the legal and ethical dimensions of technological advancement to both know how it would impact NATO decision-making and how the Alliance would be prepared to address adversaries who do not share in that vision.62 As such, NATO is contending with the ways that ethical AI impacts its own cohesion internally and how differences between allies may project outward in the face of competitors whose ethical frameworks and commitment to the rule of law differ. Internally, there is a strong national government commitment to responsible AI. Recently, transatlantic cooperation has initiated partnerships of largely NATO states committed to advancing responsible AI with goals towards data sharing and future interoperability.63 AI defense partnerships are not restricted to military innovation but rather aim to facilitate civilian innovation cooperation for defense purposes.

Externally, as AI-enabled autonomous systems enter the arsenals of more technologically advanced countries, uncoordinated ethical frameworks between Allies could pose operational risks. Without wider alignment, AI systems will have “varying technical specifications based on the legal and policy decisions made by individual governments when answering the key questions.”64 Further, although one motivation of autonomous systems is the increased safety of military personnel by removing them from dangerous situations, the lack of alignment could lead some Allies to perceive other capitals’ deployments of unmanned forces as a lack of commitment to put lives on the line, therein posing credibility risks for Allies to assure one another.65 These credibility risks can be mitigated by accountability and verification standards and procedures that NATO can implement for multinational operations, and efforts to institutionalize these procedures for AI are underway.66 While the NATO AI Strategy is expected to create a common foundation for the Alliance’s pursuit of AI, it is the implementation of principles for safe, ethical, legal, and interoperable AI that will reveal how coherent different national perspectives are. As of August 2021, only the United States and France have publicly issued their military AI strategies.67 Other allies, including Canada and the United Kingdom, have emerging views on responsible military AI, but little official information about how they implement their ethical risk assessments is publicly available.68

NATO’s influence in the functioning of joint operations and multinational military operations situates the Alliance to coordinate between how Allies implement ethical principles in their own national AI development. Specifically, NATO is well-situated to advocate for transparency, accountability, and data governance, which are also adoption factors that can translate into operational benefits, among other values.69 For example, these factors can promote coordination among Allies on ethical guidelines on the development and use of AI, as this will be a necessary foundation in any future joint operation that uses this technology. “The transatlantic partnership must focus on coordinating these core principles and systematic governance to ensure AI systems development aligns with the rule of law and democracy. In particular, this must ensure answering questions about human dignity, human control, and accountability … NATO remains the organization that can bring these two (U.S. and EU) together and establishes the ethical bottom line.”70 The issues of transparency and accountability will define the scope of future implementation.

Many remaining questions and uncertainty will be addressed in NATO’s forthcoming AI ethical principles guidelines. But the guidelines adopted in 2021 do not address every ethical dilemma. Regarding accountability, especially, likely major questions will continue to affect the Alliance. As Assistant Secretary-General for Emerging Security Challenges David van Weel recently clarified, NATO will offer a framework of responsible use for the Allies—but the question of accountability for member states, as opposed to civilian technology manufacturers for example, is one principle that will not have an easy solution.71

#### NATO is key. It occupies a unique role to credibly spearhead norm setting in emerging tech.

**Ehlert 21** --- PhD. Head of Strategy and Policy in the Office of the Chief Scientist at NATO headquarters.

Ulf, 12-16-2021, "NATO Review," NATO Review, https://www.nato.int/docu/review/articles/2021/12/16/why-our-values-should-drive-our-technology-choices/index.html

It would be short-sighted to assume that Western countries could globally enforce emerging technologies’ compliance with Western values. Instead, differences in values may well result in divergent technological competences that can, in turn, affect the global distribution of power.

Setting norms – a role for NATO?

Emerging and Disruptive Technologies (EDTs) came into NATO’s political focus in 2019, when NATO leaders adopted an implementation roadmap for seven such technologies. Regardless of their tremendous promise, we must realise that these technologies are not yet mature, not yet “fully out there”. Therefore, considerable uncertainty remains to which extent these fledgling technologies and their foreseeable applications are appropriately contained within established legal, ethical, and moral norms. These questions are not limited to military applications, nor do they stop at national borders: rather, they cut across many government departments and business sectors, and they affect humanity in its entirety.

In this complex, fast moving, high-stake setting, we must view technology and values as intertwined. While our values should guide our use of technology, we must recognise that our technology choices will, whether intended or not, reflect the values we adhere to.

As inaction is not an option, we must take active measures to establish norms for the future use of technologies; norms that are deeply rooted in our values; technologies that are currently emerging and have recognised disruption potential (such as AI, biotechnology, and quantum technology). How could we realistically master this novel challenge? The following three proposals could pave the way.

We must effectively cope with the uncertainties of technology evolution. Hence, I suggest evolutionary policy-making, building on current knowledge, but flexible enough so that today’s decisions can be adjusted or corrected in the future.

We must strive to limit potential harm without unduly constraining the benefits a technology can bring. Therefore, our policies should set limits for the application of technologies (such as genetically optimised super-soldiers) rather than banning entire technology areas (in this case, biotechnology).

We need to understand when policy changes are necessary and what those changes should be. Reflecting the diversity of interests, we need to institutionalise a broad stakeholder engagement that reaches out to all parties affected by a technology and influencing its evolution.

Within this broadly applicable framing, NATO’s role is specific. As the international organisation committed to defence and security in the North Atlantic area, it convenes considerable political, military, economic, and technological power. Building in particular on its political and intellectual capital, the Alliance can credibly spearhead norm setting for technology applications in defence to comply with Western values.

#### Global development is inevitable---try or die for norm setting.

Horowitz 18 --- Michael C. Horowitz is a professor of political science and the associate director of Perry World House at the University of Pennsylvania.

Michael Horowitz, May 2018, “Artificial Intelligence, International Competition, and the Balance of Power,” Texas National Security Review, https://tnsr.org/2018/05/artificial-intelligence-international-competition-and-the-balance-of-power/

Whether AI capabilities diffuse relatively slowly or quickly, major military powers will likely face security dilemmas having to do with AI development and deployment. In a slow diffusion scenario, if countries fear that adversaries could get ahead in ways that are hard to rapidly mimic — and small differences in capabilities will matter on the battlefield — that will foster incentives for quick development and deployment. In a rapid diffusion scenario, competitive incentives will also exist, as countries feel like they have to race just to keep up.[114](https://tnsr.org/2018/05/artificial-intelligence-international-competition-and-the-balance-of-power/" \l "_ftn114) Moreover, it will be inherently difficult to measure competitors’ progress with AI (unlike, say, observing the construction of an aircraft carrier), causing countries to assume the worst of their potential rivals.

Competition in developing AI is underway. Countries around the world are investing heavily in AI, though the United States and China seem to be ahead. Yet even if the space-race analogy is not precise, understanding AI as a competition can still be useful. Such frameworks help people and organizations understand the world around them, from how to evaluate international threats to the potential trajectory of wars.[115](https://tnsr.org/2018/05/artificial-intelligence-international-competition-and-the-balance-of-power/" \l "_ftn115) If likening competition in AI to the space race clarifies the stakes in ways that generate incentives for bureaucratic action at the government level, and raises corporate and public awareness, the analogy stands to have utility for the United States.

#### The plan is key to prevent rising authoritarian AI from undermining democracy.

Imbrie et al. 20 --- Senior Fellow at Georgetown's Center for Security and Emerging Technology (CSET).

Andrew Imbrie, Ryan Fedasiuk, Catherine Aiken, Tarun Chhabra & Husanjot Chahal. February 2020, "Agile Alliances: How the United States and its Allies Can Deliver a Democratic Way of AI,” CSET, https://cset.georgetown.edu/publication/agile-alliances/#:~:text=How%20the%20United%20States%20and,a%20Democratic%20Way%20of%20AI&text=The%20United%20States%20must%20collaborate,wield%20AI%20for%20authoritarian%20ends.

How can the United States collaborate with allies and partners to shape the trajectory of artificial intelligence in ways that will promote liberal democratic values and protect against efforts to wield AI for authoritarian ends?

This question is both important and urgent. It is important because America’s broad network of alliances and security partnerships is a singular asset in defending liberal values. It is urgent because China, Russia, and other authoritarian powers seek to achieve strategic advantage through AI and the export of censorship and surveillance technologies to countries across the globe.1 By one estimate, more than 100 countries purchase surveillance and censorship gear from China and Russia, receive training on these technologies, or simply imitate methods of surveillance and censorship that are designed to control public opinion and stifle dissent.2

As the digital and physical environments become intertwined, authoritarian practices in one domain will increasingly encroach upon the other. At stake are the core values of liberty, equality, and justice that underpin free and open societies. All democratic nations must work together to uphold basic principles, set international rules of the road, and articulate a positive vision for the future in the age of AI.

Within the United States, and certainly within allied countries, debate persists over the threat of digital authoritarianism and how to counter it. While U.S. allies will likely vary in their strategic orientations toward China and Russia, there is a growing consensus on the need to showcase a democratic way of AI. These debates will take shape in a world of globalized markets for AI talent and integrated supply chains. In this context, the right U.S. approach would leverage its network of allies and partners to safeguard democracy and liberal values. An alliance-centric strategy provides a competitive advantage over any single country that attempts to develop a robust AI ecosystem on its own.

The United States and its allies should play to their strengths. This positive agenda begins with shaping the ecosystems for the development and deployment of safe and reliable AI. The most effective approach would capitalize on advances in AI and machine learning to foster sustainable and inclusive economic growth, improve service delivery, and promote transparent and accountable governance. The United States and its allies should pursue a vision of the future in which AI enables strengthened data privacy standards and respect for civil liberties; economic empowerment of citizens within rules-based market economies; cleaner, safer, and more efficient transportation; precision medical diagnosis; greater access to education; and more effective disaster response.

#### Democracy solves war.

Tomz & Weeks 13 --- Michael Tomz, professor of political science at Stanford University, Ph.D. in Political Science, Jessica L. Weeks, assistant professor of government, Ph.D., Political Science.

Michael & Jessica, 2013, “Public Opinion and the Democratic Peace," *American Political Science Review*, February, Available Online at http://web.stanford.edu/~tomz/pubs/TomzWeeks-2013-02.pdf

Our research supports the hypothesis that peace among democracies could be due, at least in part, to public opinion. Countless studies have shown that democratic leaders are responsive to public opinion on matters of foreign policy; we demonstrate that the public discriminates between democratic and autocratic targets. Public opinion may, therefore, foster a special zone of peace among democracies.

Moreover, our experimental approach allows us to conclude with confidence that the effect of democracy is genuinely causal. Democracy affects preferences independent of confounders such as alliances, power, and trade. While our experiments confirm the intuition of skeptics that at least part of the peace among democracies is due to shared interests, military power, and economic ties, we nonetheless find clear evidence that democracy has an independent effect on support for war.

Our experiments also reveal the mechanisms through which democracy dampens support for war. The finding that democracies view other democracies as less threatening, which in turn reduces support for using force, accords with major works on the democratic peace emphasizing threat perception (Russett 1993, Risse-Kappen 1995). Understanding how and why democracies trust fellow democracies, but not autocracies, is an important avenue for future research (Kahl 1998, Williams 2001). We also found that perceptions of cost do not explain the public aversion to fighting democracies, and that expectations about success explain only a small amount of the 35 effect.

Finally, we found that morality plays an important role in the democratic peace. The regime type of the target affects moral calculations, which in turn changes preferences about the use of force. Surprisingly few scholars have explored morality as a potential source of peace. This should be a major topic for future research.

#### Authoritarian AI is an existential threat

Di Minardi 20, Communications Officer at the Georgia Tech School of Economics and School of History & Sociology, “The grim fate that could be ‘worse than extinction’,” Georgia Tech, 10/15/2020, https://www.bbc.com/future/article/20201014-totalitarian-world-in-chains-artificial-intelligence

What would totalitarian governments of the past have looked like if they were never defeated? The Nazis operated with 20th Century technology and it still took a world war to stop them. How much more powerful – and permanent – could the Nazis have been if they had beat the US to the atomic bomb? Controlling the most advanced technology of the time could have solidified Nazi power and changed the course of history.

When we think of existential risks, events like nuclear war or asteroid impacts often come to mind. Yet there’s one future threat that is less well known – and while it doesn’t involve the extinction of our species, it could be just as bad.

It’s called the “world in chains” scenario, where, like the preceding thought experiment, a global totalitarian government uses a novel technology to lock a majority of the world into perpetual suffering. If it sounds grim, you’d be right. But is it likely? Researchers and philosophers are beginning to ponder how it might come about – and, more importantly, what we can do to avoid it.

Existential risks (x-risks) are disastrous because they lock humanity into a single fate, like the permanent collapse of civilisation or the extinction of our species. These catastrophes can have natural causes, like an asteroid impact or a supervolcano, or be human-made from sources like nuclear war or climate change. Allowing one to happen would be “an abject end to the human story" and would let down the hundreds of generations that came before us, says Haydn Belfield, academic project manager at the Centre for the Study of Existential Risk at the University of Cambridge.

Toby Ord, a senior research fellow at the Future of Humanity Institute (FHI) at Oxford University, believes that the odds of an existential catastrophe happening this century from natural causes are less than one in 2,000, because humans have survived for 2,000 centuries without one. However, when he adds the probability of human-made disasters, Ord believes the chances increase to a startling one in six. He refers to this century as “the precipice” because the risk of losing our future has never been so high.

Researchers at the Center on Long-Term Risk, a non-profit research institute in London, have expanded upon x-risks with the even-more-chilling prospect of suffering risks. These “s-risks” are defined as “suffering on an astronomical scale, vastly exceeding all suffering that has existed on Earth so far.” In these scenarios, life continues for billions of people, but the quality is so low and the outlook so bleak that dying out would be preferable. In short: a future with negative value is worse than one with no value at all.

This is where the “world in chains” scenario comes in. If a malevolent group or government suddenly gained world-dominating power through technology, and there was nothing to stand in its way, it could lead to an extended period of abject suffering and subjugation. A 2017 report on existential risks from the Global Priorities Project, in conjunction with FHI and the Ministry for Foreign Affairs of Finland, warned that “a long future under a particularly brutal global totalitarian state could arguably be worse than complete extinction”.

Singleton hypothesis

Though global totalitarianism is still a niche topic of study, researchers in the field of existential risk are increasingly turning their attention to its most likely cause: artificial intelligence.

In his “singleton hypothesis”, Nick Bostrom, director at Oxford’s FHI, has explained how a global government could form with AI or other powerful technologies – and why it might be impossible to overthrow. He writes that a world with “a single decision-making agency at the highest level” could occur if that agency “obtains a decisive lead through a technological breakthrough in artificial intelligence or molecular nanotechnology”. Once in charge, it would control advances in technology that prevent internal challenges, like surveillance or autonomous weapons, and, with this monopoly, remain perpetually stable.

If the singleton is totalitarian, life would be bleak. Even in the countries with the strictest regimes, news leaks in and out from other countries and people can escape. A global totalitarian rule would eliminate even these small seeds of hope. To be worse than extinction, “that would mean we feel absolutely no freedom, no privacy, no hope of escaping, no agency to control our lives at all", says Tucker Davey, a writer at the Future of Life Institute in Massachusetts, which focuses on existential risk research.

“In totalitarian regimes of the past, [there was] so much paranoia and psychological suffering because you just have no idea if you're going to get killed for saying the wrong thing,” he continues. “And now imagine that there's not even a question, every single thing you say is being reported and being analysed.”

“We may not yet have the technologies to do this,” Ord said in a recent interview, “but it looks like the kinds of technologies we’re developing make that easier and easier. And it seems plausible that this may become possible at some time in the next 100 years.”

AI and authoritarianism

Though life under a global totalitarian government is still an unlikely and far-future scenario, AI is already enabling authoritarianism in some countries and strengthening infrastructure that could be seized by an opportunistic despot in others.

“We've seen sort of a reckoning with the shift from very utopian visions of what technology might bring to much more sobering realities that are, in some respects, already quite dystopian,” says Elsa Kania, an adjunct senior fellow at the Center for New American Security, a bipartisan non-profit that develops national security and defence policies.

In the past, surveillance required hundreds of thousands of people – one in every 100 citizens in East Germany was an informant – but now it can be done by technology. In the United States, the National Security Agency (NSA) collected hundreds of millions of American call and text records before they stopped domestic surveillance in 2019, and there are an estimated four to six million CCTV cameras across the United Kingdom. Eighteen of the 20 most surveilled cities in the world are in China, but London is the third. The difference between them lies less in the tech that the countries employ and more in how they use it.

What if the definition of what is illegal in the US and the UK expanded to include criticising the government or practising certain religions? The infrastructure is already in place to enforce it, and AI – which the NSA has already begun experimenting with – would enable agencies to search through our data faster than ever before.

In addition to enhancing surveillance, AI also underpins the growth of online misinformation, which is another tool of the authoritarian. AI-powered deep fakes, which can spread fabricated political messages, and algorithmic micro-targeting on social media are making propaganda more persuasive. This undermines our epistemic security – the ability to determine what is true and act on it – that democracies depend on.

“Over the last few years, we've seen the rise of filter bubbles and people getting shunted by various algorithms into believing various conspiracy theories, or even if they’re not conspiracy theories, into believing only parts of the truth,” says Belfield. “You can imagine things getting much worse, especially with deep fakes and things like that, until it's increasingly harder for us to, as a society, decide these are the facts of the matter, this is what we have to do about it, and then take collective action.”

Preemptive measures

The Malicious Use of Artificial Intelligence report, written by Belfield and 25 authors from 14 institutions, forecasts that trends like these will expand existing threats to our political security and introduce new ones in the coming years. Still, Belfield says his work makes him hopeful and that positive trends, like more democratic discussions around AI and actions by policy-makers (for example, the EU considering pausing facial recognition in public places), keep him optimistic that we can avoid catastrophic fates.

Davey agrees. “We need to decide now what are acceptable and unacceptable uses of AI,” he says. “And we need to be careful about letting it control so much of our infrastructure. If we're arming police with facial recognition and the federal government is collecting all of our data, that's a bad start.”

If you remain sceptical that AI could offer such power, consider the world before nuclear weapons. Three years before the first nuclear chain reaction, even scientists trying to achieve it believed it was unlikely. Humanity, too, was unprepared for the nuclear breakthrough and teetered on the brink of “mutually assured destruction” before treaties and agreements guided the global proliferation of the deadly weapons without an existential catastrophe.

We can do the same with AI, but only if we combine the lessons of history with the foresight to prepare for this powerful technology. The world may not be able to stop totalitarian regimes like the Nazis rising again in the future – but we can avoid handing them the tools to extend their power indefinitely.

#### Failure of emerging tech governance guarantees extinction

Ash Jain 19, Senior fellow with the Scowcroft Center for Strategy and Security, “Present at the Re-Creation: A Global Strategy for Revitalizing, Adapting, and Defending a Rules-Based International System,” Strategic Studies Quarterly, October 2019, <https://www.atlanticcouncil.org/wp-content/uploads/2019/10/Present-at-the-Recreation.pdf>

The system must also be adapted to deal with new issues that were not envisioned when the existing order was designed. Foremost among these issues is emerging and disruptive technology, including AI, additive manufacturing (or 3D printing), quantum computing, genetic engineering, robotics, directed energy, the Internet of things (IOT), 5G, space, cyber, and many others. Like other disruptive technologies before them, these innovations promise great benefits, but also carry serious downside risks. For example, AI is already resulting in massive efficiencies and cost savings in the private sector. Routine tasks and other more complicated jobs, such as radiology, are already being automated. In the future, autonomous weapons systems may go to war against each other as human soldiers remain out of harm’s way.

Yet, AI is also transforming economies and societies, and generating new security challenges. Automation will lead to widespread unemployment. The final realization of driverless cars, for example, will put out of work millions of taxi, Uber, and long-haul truck drivers. Populist movements in the West have been driven by those disaffected by globalization and technology, and mass unemployment caused by automation will further grow those ranks and provide new fuel to grievance politics. Moreover, some fear that autonomous weapons systems will become “killer robots” that select and engage targets without human input, and could eventually turn on their creators, resulting in human extinction. The other technologies on this lisgt similarly balance great potential upside with great downside risk. 3D printing, for example, can be used to “make anything anywhere,” reducing costs for a wide range of manufactured goods and encouraging a return of local manufacturing industries.61 At the same time, advanced 3D printers can also be used by revisionist and rogue states to print component parts for advanced weapons systems or even WMD programs, spurring arms races and weapons proliferation.62 Genetic engineering can wipe out entire classes of disease through improved medicine, or wipe out entire classes of people through genetically engineered superbugs. Directed-energy missile defenses may defend against incoming missile attacks, while also undermining global strategic stability.

Perhaps the greatest risk to global strategic stability from new technology, however, comes from the risk that revisionist autocracies may win the new tech arms race. Throughout history, states that have dominated the commanding heights of technological progress have also dominated international relations. The United States has been the world’s innovation leader from Edison’s light bulb to nuclear weapons and the Internet. Accordingly, stability has been maintained in Europe and Asia for decades because the United States and its democratic allies possessed a favorable economic and military balance of power in those key regions. Many believe, however, that China may now have the lead in the new technologies of the twenty-first century, including AI, quantum, 5G, hypersonic missiles, and others. If China succeeds in mastering the technologies of the future before the democratic core, then this could lead to a drastic and rapid shift in the balance of power, upsetting global strategic stability, and the call for a democratic- led, rules-based system outlined in these pages.63

The United States and its democratic allies need to work with other major powers to develop a framework for harnessing emerging technology in a way that maximizes its upside potential, while mitigating against its downside risks, and also contributing to the maintenance of global stability. The existing international order contains a wide range of agreements for harnessing the technologies of the twentieth century, but they need to be updated for the twenty-first century. The world needs an entire new set of arms-control, nonproliferation, export-control, and other agreements to exploit new technology while mitigating downside risk. These agreements should seek to maintain global strategic stability among the major powers, and prevent the proliferation of dangerous weapons systems to hostile and revisionist states.

### 2AC---Say Yes

#### Allies want AI defense cooperation---they’ll sign on to a US lead initiative.

**Kahn & Horowitz 21** --- Research and Senior Fellows at the Council on Foreign Relations.

Lauren and Michael, 2021, The Washington Quarterly 44:4 “Leading in Artificial Intelligence through Confidence Building Measures” [https://doi.org/10.1080/0163660X.2021.2018794](https://doi.org/10.1080/0163660X.2021.2018794%20Acc%206/6/22)

An informal multilateral agreement could be proposed and opened for signature to all nations. If the United States leads, American allies and partners would be likely to sign on, both due to the impact of American leadership in shaping attitudes and the likely perception that following US-led principles would facilitate defense cooperation in this area. One might argue that US leadership in multilateral AI standards could create risks for the United States if it involves commitments that prevent the US deployment and use of militarily important AI-enabled systems. These risks, however, are minimal. The standards the United States would promote involve commitments to international humanitarian law and responsible behavior that the United States already follows when it comes to the development and use of military systems. Thus, it would not require changes in US behavior that might slow down responsible military AI adoption.

### 2AC---Interoperability Key

#### Intra NATO AI gap decks interoperability---cooperation through NATO is key

Matej Tonin 19, current Slovenian Minister of Defense, was an active member of the NATO PA from 2012 to 2020. He served as rapporteur and Chairperson of the Assembly's Sub-Committee on Technology Trends and Security and as Deputy Head of the Slovenian delegation to the NATO PA. "ARTIFICIAL INTELLIGENCE: IMPLICATIONS FOR NATO’S ARMED FORCES" Report from the Sub-Committee on Technology Trends and Security. October 13. <https://www.nato-pa.int/download-file?filename=/sites/default/files/2019-10/REPORT%20149%20STCTTS%2019%20E%20rev.%201%20fin-%20ARTIFICIAL%20INTELLIGENCE.pdf> //pipk

63. Second, the defence technology gap between Allies must remain small enough to be bridged by interoperability. The large diversity of Allies is ultimately a primary source of NATO’s strength, but it also means that large differences exist in defence capabilities. There is a danger that the significant investment in AI in leading Allied nations could lead to substantial interoperability problems and a loss of NATO’s overall military effectiveness in the future. However, the good news is that AI efforts do not need to be capital intensive, as the Committee witnessed during its fact-finding visit to Singapore in May 2019. Small- and medium-sized Allies with smart scientists and engineers can play an outsized role in AI development and adoption if they so choose. This could indeed be a very effective contribution to Allied burden sharing from the smaller Allied nations. To increase interoperability, cooperation through NATO’ structures has a large role to play. Interoperability should be at the heart of AI efforts carried out by the STO, ACT, the NCI Agency, NIAG, and others. Allies leading in the S&T sector should encourage open architecture standards and regulations for technology sharing and transfer among Allies in order to narrow the technology gap, in line with all national obligations and the sensitive nature of technologies

64. Allied armed forces alone will not be able to solve the AI-specific challenges laid out in this report, including the ethical and legal questions. This will need a much broader push across the entire AI ecosystem. However, governments, NATO, and the EU can and must play a critical role in overcoming the investment, innovation, and workforce challenges of adopting AI. Just as national governments across the Alliance are rising to the challenge of AI, so should their armed forces. They should move beyond scanning the horizon and, instead, invest in real research, experimentation, development, and adoption efforts. It should be underlined that all dual-use and military AI efforts should, however, tackle all ethical, legal, and social questions right from the beginning, including privacy considerations and the definition of appropriate human involvement in decisions about the use of force. Allies should consider examining whether an ethics code of conduct could put the adoption of AI in the armed forces on a more stable foundation. At a strategic level, Allies must also address the geopolitical challenges, including the ones arising from Chinese and Russian investments in military AI systems. As this report has shown, Russia and China see AI as critical to future military power and invest heavily into AI-enabled military systems. For its part, the NATO PA Science and Technology Committee will continue to monitor AI developments in the defence sector through fact-finding visits and expert testimony.

## DAs

### 2AC---AT: Military Innovation DA

#### No link---standards enable, NOT hurt, military dominance

Zoe Stanley-Lockman & Lena Trabucco 22, Stanley-Lockman is an Associate Research Fellow in the Military Transformations Programme at the Institute of Defence and Strategic Studies at the S. Rajaratnam School of International Studies in Singapore; Lena Trabucco is a dual degree candidate pursuing a PhD in political science at Northwestern University and a PhD in Law at iCourts Center of Excellence in International Courts at the University of Copenhagen, “NATO’s Role in Responsible AI Governance in Military Affairs,” The Oxford Handbook of AI Governance, edited by Justin Bullock et al., Oxford University Press, 03/18/2022, DOI.org (Crossref), doi:10.1093/oxfordhb/9780197579329.013.69

Additionally, infusing AI development with certain ethical principles and values can have operational advantages and benefits, and NATO can, in particular, promote the ethical principles as operational standards for the Allies. A common critique within the ethics debate is that approaching new technology with an ethical or democratic values-driven perspective translates into comparative military disadvantage. Essentially, if your adversary develops technology without the constraints of ethical principles then there will be diminished effectiveness on the battlefield.56 We find this critique unfounded because it assumes there is a false trade-off between ethics and effectiveness; instead, we argue ethical foundations are built into the architecture of modern warfare.57 As such, ethics is a background condition for battlefield effectiveness, which is already infused in military decision-making and helping to guide the boundaries of international humanitarian law. As such, ethical guidelines do not have to detract from a military’s capacity or competency to devise means and methods of warfare that will serve their national or coalition interest.58 If anything, a first-mover advantage can incentivize an ethical and values-driven AI to establish the threshold of technological standards globally.59

#### Turn: Standardization enhances leadership---doesn’t degrade it.

Andrew Imbrie et al. 20, Center for Security and Emerging Technology, “Agile Alliances,” CSET, 2020, <https://cset.georgetown.edu/wp-content/uploads/CSET-Report-Agile-Alliances-1.pdf>

First, the United States and its allies face a trade-off between capability and dependency.10 Showcasing a democratic way of AI will require the United States and its allies to pool resources, coordinate policies, and share best practices and information. Leveraging the capabilities of its allies and partners will amplify U.S. power and influence, but will also create inefficiencies and require compromise. While the United States can manage these challenges, it cannot eliminate them entirely—nor should it. As long as AI-related supply chains are global and AI talent both mobile and globally distributed, innovation in AI requires international collaboration.11 To excel in this new context, America will need to embrace its role as a “systems integrator” among like-minded allies and partners.12 Embedding cooperation in dense, decentralized networks plays to the United States’ strengths as a democratic power that favors market approaches to technological cooperation. By combining top-down vision with dynamic, bottom-up innovation and entrepreneurship, the United States and its allies can foster a competitive ecosystem that enables the best ideas to flourish.

#### There’s no AI race---first mover advantages don’t exist, and US lead in AI leverage is baked in

Lauren A. Khan 21, research fellow at the Council on Foreign Relations, 10/28/21, “US Leadership in Artificial Intelligence Is Still Possible,” https://www.cfr.org/blog/us-leadership-artificial-intelligence-still-possible

Much of the debate over military AI leadership and U.S. technological competition with China hinges on the assumption that there is a significant first-mover advantage when it comes to these technologies, meaning the first to develop them could reap substantial economic and military effects. However, fear of pronounced AI first-mover advantages instead reflects how AI is prone to “overhyping” where incredibly high expectations of capabilities surpass the reality of what is possible. Overhyping can obscure real progress and generate an inappropriate perception of an ​​​​​​AI arms race that “misrepresents the competition going on among countries.” Any possible first-mover advantage for AI would be unsustainable.

AI is a general-purpose, enabling technology not dissimilar to electricity. Moreover, the private sector drives its development, rather than the defense sector. While technologies that are singularly applicable to military contexts diffuse more slowly, those that are multi-use like AI have the added prodding of market incentives to speed up their spread.

AI is Open Source and Available to All

Even when compared to other private sector-driven technologies, AI could spread even faster, since most AI research and development is open source with an unprecedented exchange of code and talent between tech companies and academia. This is a relatively new phenomenon in tech - “there is no business need to make closed infrastructure solutions, because within a few months everything will be totally different,” which has led to actors releasing even the most cutting-edge, proprietary AI. In 2015, Google opened up its sourcing framework TensorFlow. Facebook followed suit just a few years later with Caffe2 and PyTorch. OpenAI published GPT-2 in 2019, a large language processing model. The culture of keeping this work open-source and collaborative is widespread. A survey of AI and machine learning researchers showed that a majority believed that both a high-level and detailed description of methods, the results, and the actual algorithms should always be published, absent compelling risks from openness.

How to Become a World Leader in AI, if Everyone has the Models

What does it mean to be competitive, if not a leader, in AI if AI techniques themselves will spread quickly, leading to a similar nature and quality level across the board? The competitive advantage for countries will lie in a state’s ability to successfully leverage AI. Renewing America through military AI leadership will not succeed if focused purely on acquiring a technical edge, as opposed to organizational capacity and integration.

This idea isn’t new—the 2018 National Defense Strategy said that when it comes to adopting and deploying emerging technologies like AI, “Success no longer goes to the country that develops a new technology first, but rather to the one that better integrates it and adapts its way of fighting.” AI integration leadership will not only improve operations in DoD and beyond in the US government, but it will also enhance US economic competitiveness by setting a model and serving as a catalyst for broader innovation. But success will require both a significant mindset shift within DoD, as well as an elevation of the value of data.

Algorithms are continuously evolving, being tested against new data and updated and verified accordingly—to stay competitive in the 21st century DoD must operate and move in a similar way. In parallel with how tech companies are developing new algorithms—whatever state manages to adopt the latest open-source model, train and benchmark against their own data and models, and discard the losing model while implementing the more efficient one, will be the one to “win” military AI leadership.

Successful military AI leadership will also require U.S. data leadership. As Andrew Ng explains, “data is food for AI,” and with models and algorithms being open source—data will become the differentiating factor. Labeling, standardization, and sharing of data across DoD, therefore, is a critical precursor to AI integration and adoption. As it currently stands, DoD has access to large, diverse streams of data—however much of it is unlabeled, uncleaned, unconsolidated, and further complicated by security restrictions. When it comes to creating algorithms, it has been estimated that up to 80% of the time spent is allocated to processing the data needed for training them. Google released a paper in 2021 that discussed how data cascades—“compounding events causing negative, downstream effects from data issues” are pervasive. Moreover, DoD already has a competitive advantage when it comes to processing data—an existing cadre of data scientists, analysts, and more with particular knowledge of “how to assemble high-quality data in their domain,” it just needs to use them.

The United States has the capacity to become the world leader in AI—but it needs to take the necessary steps to revitalize its ability to adopt innovations in order to do so.

#### AI’s not key to heg.

Andrea Gilli 19, Senior Researcher in the Research Division, NDC, “Preparing for ‘NATO-mation’: the Atlantic Alliance toward the age of artificial intelligence”, NDC Policy Brief, No. 4, pg. 3, Feb. 2019, http://nato-70.upt.pt/wp-content/uploads/2019/04/Preparing\_NATO\_mation.pdf

Military transformation and emerging technologies

A second, and related, issue is the risk that, in the age of intelligent machines, AI, ML and BD may easily enable any actor to catch up, or even outpace, its adversaries in military terms. Here too, skepticism is warranted. First of all, these two concerns logically contradict each other. If we are witnessing a military transformation based on dual-use, general-purpose technologies such as AI, ML and BD that can be easily exploited in battle, then no actor can achieve a significantly enduring military advantage – at the tactical, operational or strategic level – as competitors can quickly catch up or deploy effective counter-systems.8

Next, military power is more than hardware. Tactical fluency and operational competence are in fact extremely important for victory on the battlefield – along with other variables. There is no reason to believe that this will change anytime soon, as warfare, war and by extension strategy are inherently adversarial: winners succeed because they defeat their adversaries – i.e., they neutralize enemy counter-measures, tactics, systems and innovations. Possessing capable hardware is thus, per se, not sufficient and, at times, not even necessary for winning. Commercial technologies offer great potential but are easily vulnerable to even basic counter-measures as they are not designed for combat.

By the same token, emerging technologies – whether developed for commercial or military applications – face performance trade-offs that constrain their immediate military utility. The French Marine Nationale’s mid-19th century bid to offset British naval superiority is telling: the steam engine granted independence from wind but suffered from limited endurance; iron hulls could not keep afloat when hit; and, explosive shells had shorter ranges than solid shots. When mature, these technologies ultimately transformed naval warfare, but it took almost a century for this to happen.9

There is no reason to believe that with AI, ML and BD things will be different. When it comes to software, in fact, even subtle and apparently minor details lead to catastrophic failure: because of simple mistakes in data gathering or processing such as automatic path control, military platforms may end up exceeding their maximum depth or altitude ceilings and thus expose themselves to almost certain mission failure. Software already represents the primary source of procurement delays and cost overruns. As software becomes more central in weapon systems, the problems it creates can only exponentially increase. Additionally, through generative adversarial networks (GNAs), actors can increasingly feed compromised data into enemy systems to negatively affect tactical performance or operational success. Competent armed forces will thus deploy intelligent machines only in so far as the risks, problems and constraints they face are, slowly and progressively, addressed.

This brings us to a final consideration. In order to address these very risks, problems and constraints, investments in a broad range of fields are also needed so as to counterbalance investments by enemies and adversaries. Improving all the underlying technologies related to AI, ML and BD, learning about their potential, integrating them into existing military platforms and exploiting them for maximum strategic, operational or tactical effectiveness require time, human capital, institutional backing, technological competence and financial resources. In other words, the idea that countries can quickly exploit the technologies of the fourth Industrial Revolution for building military power seems exaggerated.10

### 1AR – No Link

#### No link – regulations won’t undermine innovation – empirics.

**Heikkilä 21** - Politico’s AI Correspondent in London

[Melissa, Politico March 31 “AI Decoded: NATO on AI warfare — AI treaty consultation — Unions call for more AI protections” https://www.politico.eu/newsletter/ai-decoded/politico-ai-decoded-nato-on-ai-warfare-ai-treaty-consultation-unions-call-for-more-ai-protections/ Acc 4/9/22 TA]

AI LAWS WHY REGULATION WON’T KILL INNOVATION: The Council of Europe, the Strasbourg-based human rights organization, is hard at work on a draft proposal on artificial intelligence. If ratified, the treaty could become national law in the group’s 47 member countries. AI: Decoded rang up Gregor Strojin, the chair of the group’s committee, called CAHAI, that’s drawing up the rules to hear the latest developments. The goal: CAHAI is working on an AI treaty with additional rules for specific sectors, such as social affairs and justice systems, and problems, like the discrimination of minorities. The plan is to have a draft ready by the end of they year, after which the Committee of Ministers — national representatives to the Council of Europe — will debate it. “In the past, there have been examples of treaties that were adopted in a matter of months. But sometimes it can take years. Sometimes it can be never. But I think we’re making a pretty strong point that in this case, delaying it could lead to irreparable damage,” Strojin said. “We are seeing increasing use of technologies that’s being imported from other parts of the world, without any risk assessment, without any impact assessment in a way that’s actually dumping the technology on certain countries,” he continued. Been there done that: Strojin also pushed back against industry jeremiads that regulation would “hamper innovation.” He said that AI regulators can actually learn a lot from past negotiations around pharmaceuticals and bioethics as an example of how regulation can help innovation. In 1964, the Council of Europe adopted the European Pharmacopoeia, which is the official standard and scientific basis for the quality control of pharmaceuticals. “Before that medical products and also services were like snake oil. There was no common assessment of what are the ingredients [or] what are the side effects of drugs,” Strojin said. (Sound familiar?) “I don’t think we have a problem with the lack of innovation in the pharmaceutical sector at this point,” Strojin said.

### 1AR – No Race

#### The AI “arms race” isn’t a race---China can’t win, their only advantage is sheer data and that doesn’t matter

Carl Benedikt Frey & Michael Osborne 20, Carl Benedikt Frey is Oxford Martin Citi Fellow and Future of Work Director at the Oxford Martin School at Oxford University and the author of The Technology Trap: Capital, Labor, and Power in the Age of Automation. Michael Osborne is Professor of Machine Learning at the University of Oxford, a Fellow at the Oxford Martin School, and Co-Founder of Mind Foundry., 6-19-2020, "China Won’t Win the Race for AI Dominance," Foreign Affairs, <https://www.foreignaffairs.com/articles/united-states/2020-06-19/china-wont-win-race-ai-dominance>

DATA ALONE ARE NOT ENOUGH

China made international headlines by effectively leveraging its surveillance technology for contact tracing in response to COVID-19, the disease caused by the novel coronavirus. And yet the country’s alleged data advantage is hugely overblown. One reason is that data are highly domain specific and don’t often solve more than the problem for which they were gathered. China’s disregard for privacy enables it to snoop on its citizens, but not much else. And an abundance of surveillance data doesn’t give China an advantage in applying artificial intelligence to such ends as drug discovery or self-driving cars, for example.

The puzzle of artificial intelligence lies not in the quantity of data to which its algorithms have access but in the efficiency with which it learns from that data. Even with huge amounts of data, artificial intelligence systems are easily tricked into making errors. The Google researcher Christian Szegedy and his collaborators proved this point by fooling an algorithm that had once confidently and correctly classified images of dogs and school buses. The researchers manipulated the pixels of images in a manner that would have been completely undetectable to the human eye—but that led the algorithm to classify both dogs and school buses as ostriches. Artificial intelligence algorithms can often identify objects, but they lack any conceptual understanding of the relationships between those objects or of their respective properties. As the deep learning researcher Yoshua Bengio has warned, “We can’t realistically label everything in the world and meticulously explain every last detail to the computer.”

Many think of China as “the Saudi Arabia of data.” But if data are the new oil, they might just be China’s natural resource curse. For example, in the early twentieth century, electric cars looked more promising than gasoline-powered cars. Huge oil discoveries, among other things, tipped the balance in favor of the internal combustion engine. A century later, we are trying to get back into electric cars. The current focus on data-thirsty AI applications could lead to a similar lock-in into the wrong sort of AI.

We have seen this movie before. In the 1980s, the grand promises and overwhelming focus on symbolic AI prompted immense funding and media hype. This meant that funding for “deep learning” dried up. But deep learning has its own problems and has recently caused companies to focus on easy AI problems, such as classifying cats and dogs, where data are abundant. This approach alone is likely to run into diminishing returns that could even prompt another AI winter.

Data efficiency is the holy grail of further progress in artificial intelligence. The reason most people associate the steam engine with James Watt and not Thomas Newcomen (who developed a coal-powered steam engine decades earlier) is that Watt’s separate condenser first made the technology energy efficient. Artificial intelligence is still waiting for its separate condenser moment. Indeed, to learn enough to win a game of Go against Lee Sedol, a champion of the strategic board game, DeepMind’s AlphaGo software first had to play many millions of games against itself. It learned to play far slower than any human. Humans are incredibly data efficient; recent breakthroughs in artificial intelligence are much less so. Whether the United States or China will lead the world in artificial intelligence depends far less on who controls the most data than on who will be the first to innovate past this impasse.

#### No Chinese AI arms race---it’s not zero sum---significant academic coop and opportunities for growth

Kai-Fu Lee 19, Transcript of Interview by Stephen Orlins, President of the National Committee on U.S.-China Relations, with Kai-Fu Lee, Ph.D. in Computer Science from Carnegie Mellon, Fellow at the Institute of Electrical and Electronics Engineers, “Kai-Fu Lee on the Future of AI in the United States and China”, 2/6/2019, https://www.ncuscr.org/media/podcast/uschinainsights/kai-fu-lee-future-ai-united-states-china

Kai-Fu Lee: Well, I've been an AI researcher for a long time, and I have worked in the U.S. and China. And I'm seeing a lot of excitement and a lot of challenges ahead of us. I've done AI as a researcher, a product executive, and an investor now. And I think AI is taking off faster than we think. China is becoming an AI superpower. With the U.S. and China, there is a lot of complementarity, and we face a lot of similar challenges. And there are a lot of approaches that could be shared. So I thought I had that unique perspective to write a book that describes that.

Orlins: Is this something which the U.S. and China are going to cooperate on in the future, or compete on?

Lee: I know everyone thinks about this as competition, but it really isn't. The U.S. is stronger in research; China is stronger in implementation. So they could learn, at least from each other. And also, I think China is building Chinese products for Chinese people, Chinese VCs funding Chinese companies doing Chinese products for Chinese people, American VCs funding American companies building products for the developed countries. The two don't collide, so it's not a zero-sum game, not as though the growth of one side would shrink the other. So given they're in parallel, theoretically, this should be a wonderful collaborative opportunity.

Orlins: You focus a lot on, kind of Alipay or WeChat Pay. How does that change the landscape for AI in China versus the United States, where we still are heavily reliant on a credit card system that seems quite old and outdated when you're in China?

Lee: It's a very unique opportunity for China to leapfrog. The U.S. had the world's most leading transaction tool, which was the credit card, but it became outdated. It charges too much, it's inconvenient, it's only customer to merchant. In China, with WeChat and Alipay, anybody can pay anybody. We can do micro payments and there are no fees, almost no fees, so the 2% extra charge is almost like a tax on the American economy charged by the credit cards. But with respect to AI, now everybody, including WeChat and Alibaba, but also, if you build an app, you know who your customers are, and what they paid and why. And if you're a retail shop and people scanned you, you know who pays you and why. There are even beggars in the street holding up a sign, "Scan me and give me money," and they know who paid them and why. So I think this is creating a huge amount of data that will help AI.

Orlins: How will it be used?

Lee: Well, each merchant will get data with respect to his or her business, and it may or may not include the customers' name. You may have to go to extra steps to solicit user consent, but in the end, if you're able to get user consent, you will know who came to your store, what they bought, on which day, and from which, you can make better sales projections, product placements...

Orlins: But doesn't a credit card receipt do the same?

Lee: A credit card receipt does not give the same organized information. Nor does it give a channel to communicate. So if you came to my store and bought this book, and I got you to sign up for my WeChat accounts, I can send messages to you. I can say, "We have a sale today."

Orlins: So it's the merchant, as opposed to the credit card company that has that data?

Lee: That's right. The merchant has it. Obviously, Tencent has it, and both can use it to datamine and make better decisions that help the companies make more money.

Orlins: Are Tencent and Ali going to be the focus of AI development in the future in China?

Lee: They are the two strongest right now. In the future, I think there are a lot of opportunities, because there are many other spaces that are not contiguous to this space, the payment space. Tencent is very strong with social gaming and now, payment. Alibaba is very strong with commerce and now, payment. But there will be health care, medical, there will be manufacturing, there will be transportation. So I think there are many other areas where new companies still could emerge with the data and the AI and the monetization.

Orlins: Who will be the leaders in the U.S? What companies will lead that in the U.S?

Lee: Well, Google currently leads in the diversity of their products, the amount of data they collect, and also the AI expertise they have accumulated. After that, there is Facebook, Microsoft, Amazon. So it's a similar situation, except that in China, I think the data collection goes a little deeper, because the Chinese people use the phone more aggressively for more services.

Orlins: How can we use AI to improve the U.S.-China relationship?

Lee: Well, the academics in the U.S. and China are wonderful friends. If you go to NIPS (conference on Neural information Processing Systems) or one of the AI conferences, you will see that the connections are good. The sharing is very open, so that could be an inspiration to the parts that may not be focused on it.

And I think the National Committee could publish more information that the U.S. and China are not competing in AI in a commercial sense. And also, that they each have something to offer. And that's why I wrote this book: to let people know that, while the media, and some politicians, have focused on U.S.-China competition— even using terms like "cold war" and describing this as a zero-sum game, but, in fact, both countries are doing great. There's a lot of sharing, there's very little competition academically or commercially. So I don't think we should continue to represent this as a war.

#### China tech fears are unfounded---they can’t catch up.

Fred Hu 18, economist and chairman of Primavera Capital Group, 8-22-2018, "The U.S. Is Overly Paranoid About China’S Tech Rise," Washington Post, https://www.washingtonpost.com/news/theworldpost/wp/2018/08/22/us-china-3/?utm\_term=.ed8dd0d27f82

But much of the fear over China’s technological rise is unfounded. Fundamentally, China is like most emerging economies around the world: still trying hard to close the enormous technological gap with advanced economies led by America. China has undoubtedly made more progress than many of its developing peers in that race. Its tech industries have grown at a faster pace and achieved a global scale beyond those of most developing countries. In a broad range of manufacturing sectors — notably consumer electronics, steel, ship building, high-speed rail systems and solar panels — China has established itself as the world’s leading producer. In areas such as consumer Internet and financial technology, it has arguably overtaken even the United States and now leads the rest of the world. Yet China hawks such as Robert Lighthizer and Peter Navarro charge that whatever progress China has made on the tech front is due to the country’s blatant theft of U.S. technology. Considering the enormous investments China has made in science and technology over recent decades, such claims do not hold water. China has devoted vast resources to research and development — $409 billion in 2015 (21 percent of the global total), according to the U.S. National Science Foundation. China’s investment in research and development grew over 20 percent annually between 2000 and 2010 and almost 14 percent from 2010-2015. U.S. research and development hovered around 4 percent over the same period. For a country with an average per capita income a mere one-sixth of America’s, China’s research and development investments reflect a real and sustained national commitment. At the same time, China has vastly expanded and improved STEM education and has one of the largest pools of STEM graduates in the world. The devotion of significant resources to research and development and human capital has in turn enabled China to reap some of the early fruits of innovation. China now tops the world in new patent filings. As the first country to receive more than 1 million patent applications in a single year — a record the World Intellectual Property Organization said reflected “extraordinary” levels of innovation — China accounts for almost 40 percent of the global total and more than that of the United States, Japan and South Korea combined. China has also significantly boosted venture capital investment, which supports the commercialization of emerging technologies. While the United States attracts the most investment worldwide (nearly $70 billion), venture capital investment in China rose from approximately $3 billion in 2013 to $34 billion in 2016, climbing from 5 percent to 27 percent of the global share — the fastest increase of any economy. China’s start-up ecosystem is both vast and vibrant; it has successfully incubated more tech unicorns than any other country except the United States. Too often, U.S. critics claim that Chinese industrial policies like Made in China 2025 are behind the country’s ascendancy in tech. In fact, virtually none of China’s leading tech firms, such as Alibaba, Baidu and Tencent, are state-owned or meaningful beneficiaries of state support. They are all founded and led by smart and risk-taking private entrepreneurs, just like their Silicon Valley brethren. Tellingly, many Chinese tech start-ups have received U.S. venture financing. And Chinese technology companies and venture firms have made significant investments in U.S. start-ups. Sadly, the virtuous two-way venture capital flows are now in jeopardy because of Washington’s growing paranoia about China. As impressive as China’s innovation and progress may be, however, it is premature to declare that China has caught up with the U.S. tech industry. Interventionist government bureaucracy, stodgy state-owned enterprises, a rigid school system and — above all — harsh restrictions on individual freedoms continue to stifle independent thinking and creativity and constrain China from realizing its full innovation potential. While China is well positioned to succeed in “strategic” industries such as semiconductors, pharmaceuticals and commercial aircraft due to its vast pool of engineering talent and the size of its domestic market, so far it has remained a laggard. China has failed to develop an indigenous chip industry despite a state-led drive to do so, with tens of billions spent over the past four decades. Despite its status as the “world’s factory,” making everything from cell phones and laptops to numerous other devices, China continues to import 90 percent of its microchips from foreign countries, predominantly from the United States. That is why the U.S. threat to cut off critical chip supply to ZTE, a Chinese telecom equipment firm, has been dubbed the “Sputnik moment” in China: a sober reminder of China’s continued weaknesses in critical technologies. While China has made spectacular progress on the tech front, the United States remains the undisputed global leader in science and technology. The United States holds most of the world’s leading research universities; it deploys the highest amounts of both public and private funding in research and development; attracts the most venture capital; awards the most advanced degrees; provides the most advanced business, financial and information services and is the largest producer in knowledge-intensive, high-tech sectors, from pharmaceuticals to semiconductors. The fear that China will displace the United States as the global tech superpower is grossly exaggerated. Unfortunately, such paranoia dominates the minds of protectionist U.S. politicians and China hawks and has already amplified a destructive trade war between the world’s two largest economies. For China’s part, its soul-searching is overdue. Beijing should resist the prevalent yet ill-justified self-complacency and triumphalism that contributed to the fear in Washington in the first place, and it should make serious efforts to reform and open its domestic economy. Unless Beijing amends its heavy-handed statist approach to economic development, China’s potential as a leading nation in science and technology could be seriously curtailed.

## CPs

### 2AC---OSCE CP

#### NATO’s key---failure to engage the institution itself means military AI can’t be made interoperable, which causes political gridlock and tactical conflict

Zoe Stanley-Lockman & Lena Trabucco 22, Stanley-Lockman is an Associate Research Fellow in the Military Transformations Programme at the Institute of Defence and Strategic Studies at the S. Rajaratnam School of International Studies in Singapore; Lena Trabucco is a dual degree candidate pursuing a PhD in political science at Northwestern University and a PhD in Law at iCourts Center of Excellence in International Courts at the University of Copenhagen, “NATO’s Role in Responsible AI Governance in Military Affairs,” The Oxford Handbook of AI Governance, edited by Justin Bullock et al., Oxford University Press, 03/18/2022, DOI.org (Crossref), doi:10.1093/oxfordhb/9780197579329.013.69

Safety and security

For humans to meet ethical and legal commitments when developing and deploying AI, the systems themselves must be safe, secure, and reliable. More simply put, if humans and institutions interacting with AI do not have confidence that the systems will perform as expected, then they cannot assure that its development and deployment are responsible. This makes safety and security a key pillar of responsible AI governance for any actor.82 As this section explores for NATO in particular, safety and security are indispensable to the Alliance’s stated goals to focus its approach to EDTs in the areas of “deterrence and defense, capability development, legal and ethical norms, and arms control aspects.”83

Politically, democratic militaries using AI cannot be accountable to their citizenries nor their coalition partners if they lack mechanisms to trace and explain how their systems are reliable. Accidents and interference with AI systems could likewise create political risks for the Alliance. For example, if deepfakes and micro-targeted information attacks compromise confidence in the integrity of information used to build a common operating picture, then the operational difficulties could also erode political trust between Allies in a few key ways. In the North Atlantic Council, disagreement about the integrity of information could slow the decision-making body’s ability to react to fast-changing operational realities.84 Further, compromised AI systems may not only make it harder for forces to prevent harm to non-combatants, but also to prevent friendly fire. In this way, coalition forces arguably face even higher obligations to coordinate on the reliability of their systems, relative to adversaries and near-peer competitors that tend to operate alone. As such, responsible AI governance is not purely technical; policy alignment and strategic planning are likewise necessary to draw attention to risk management above the tactical level.

# NEG

## Case

### \*JOINT OPERATIONS ADV\*

### Say No---1NC

#### NATO allies say no---divergent demands and public opposition.

**HeikkilÄ 22**, 7-4-2022, "NATO wants to set AI standards. If only its members agreed on the basics.," POLITICO, https://www.politico.eu/article/nato-ai-artificial-intelligence-standards-priorities/

On paper, NATO is the ideal organization to go about setting standards for military applications of artificial intelligence. But the widely divergent priorities and budgets of its 30 members could get in the way.

The Western military alliance has [identified](https://www.nato.int/nato_static_fl2014/assets/pdf/2020/12/pdf/201201-Reflection-Group-Final-Report-Uni.pdf) artificial intelligence as a key technology needed to maintain an edge over adversaries, and it wants to lead the way in establishing common ground rules for its use.

“We need each other more than ever. No country alone or no continent alone can compete in this era of great power competition,” NATO Deputy Secretary-General Mircea Geoană, the alliance’s second in command, said in an interview with POLITICO.

The standard-setting effort comes as China is pressing ahead with AI applications in the military largely free of democratic oversight.

David van Weel, NATO’s assistant secretary general for emerging security challenges, said Beijing's lack of concern with the tech's ethical implications has sped along the integration of AI into the military apparatus.

"I'm ... not sure that they're having the same debates on principles of responsible use or they're definitely not applying our democratic values to these technologies,” he said.

Meanwhile, the EU — which has pledged to roll out the world's first binding rules on AI in coming weeks — is seeking closer collaboration with Washington to oversee emerging technologies, including artificial intelligence. But those efforts have been slow in getting off the ground.

For Geoană, that collaboration will happen at NATO, which is working closely with the European Union as it prepares AI regulation focusing on “high risk” applications.

The pitch

NATO does not regulate, but “once NATO sets a standard, it becomes in terms of defensive security the gold standard in that respective field,” Geoană said.

The alliance's own AI strategy, to be released before the summer, will identify ways to operate AI systems responsibly, identify military applications for the technology, and provide a “platform for allies to test their AI to see whether it's up to NATO standards,” van Weel said.

The strategy will also set ethical guidelines around how to govern AI systems, for example by ensuring systems can be shut down by a human at all times, and to maintain accountability by ensuring a human is responsible for the actions of AI systems.

“If an adversary would use autonomous AI powered systems in a way that is not compatible with our values and morals, it would still have defense implications because we would need to defend and deter against those systems,” van Weel said.

“We need to be aware of that and we need to flag legislators when we feel that our restrictions are coming into the realm of [being detrimental to] our defense and deterrence,” he continued.

Mission impossible?

The problem is that NATO's members are at very different stages when it comes to thinking about AI in the military context.

The U.S., the world's biggest military spender, has prioritized the use of AI in the defense realm. But in Europe, most countries — France and the Netherlands excepting — barely mention the technology’s defense and military implications in their national AI strategies.

“It’s absolutely no surprise that the U.S. had a military AI strategy before it has a national AI strategy," but the Europeans "did it exactly the other way around," said Ulrike Franke, a senior policy fellow at the European Council on Foreign Relations, said:

That echoes familiar transatlantic differences — and previous U.S. President Donald Trump's complaints — over defense spending, but also highlights the different approaches to AI regulation more broadly.

The EU's AI strategy takes a cautious line, touting itself as "human-centric," focused on taming corporate excesses and keeping citizens' data safe. The U.S., which tends to be light on regulation and keen on defense, sees things differently.

There are also divergences over what technologies the alliance ought to develop, including lethal autonomous weapons systems — often dubbed “killer robots” — programmed to identify and destroy targets without human control.

Powerful NATO members including France, the U.K., and the U.S. have developed these technologies and oppose a treaty on these weapons, while others like Belgium and Germany have [expressed serious concerns](https://www.stopkillerrobots.org/action-and-achievements/) about the technology.

These weapons systems have also faced fierce public opposition from civil society and human rights groups, including from United Nations Secretary-General António Guterres, who in 2018 [called](https://www.un.org/sg/en/content/sg/speeches/2018-11-05/remarks-web-summit) for a ban.

Geoană said the alliance has “retained autonomous weapon systems as part of the interests of NATO.” The group hopes that its upcoming recommendations will allow the ethical use of the technology without “stifling innovation.”

#### NATO says no---political frition prevents unity on AI standards.

Zoe Stanley-Lockman & Lena Trabucco 22, Stanley-Lockman is an Associate Research Fellow in the Military Transformations Programme at the Institute of Defence and Strategic Studies at the S. Rajaratnam School of International Studies in Singapore; Lena Trabucco is a dual degree candidate pursuing a PhD in political science at Northwestern University and a PhD in Law at iCourts Center of Excellence in International Courts at the University of Copenhagen, “NATO’s Role in Responsible AI Governance in Military Affairs,” The Oxford Handbook of AI Governance, edited by Justin Bullock et al., Oxford University Press, 03/18/2022, DOI.org (Crossref), doi:10.1093/oxfordhb/9780197579329.013.69

On that note NATO, or any other international organization, is not exempt from these political hurdles. As EDTs increasingly become a focal point in the geopolitical space, any approach of AI governance in the international security environment will have global political undertones. This will undoubtedly be a significant hurdle for NATO as it balances responsible AI development and Allied coordination and cooperation in a changing geopolitical landscape. And certainly, the political realities may well represent the greatest challenge and disincentivize NATO to emerge as a leader in responsible military AI. Nevertheless, the three pillars indicate that NATO is an institution with considerable opportunity to shape responsible AI governance. More specifically, this entails urging and facilitating Allied standards and policies to establish foundations for emerging military technology built on informed and ethical principles and enhance the international security environment.

### Interop Fails---1NC

#### Interoperability challenges are structural---they can’t be fixed through consultation or dialogue.

Edward Hunter Christie 22, Senior Research Fellow at the Finnish Institute of International Affairs, “Defence Cooperation in Artificial Intelligence: Bridging the Transatlantic Gap for a Stronger Europe,” European View, vol. 21, no. 1, SAGE Publications Ltd, 04/01/2022, pp. 13–21

Interoperability challenges

Interoperability can be defined as ‘the ability of systems, units or forces to provide services to, and accept services from other systems, units or forces and the use the services so exchanged to enable them to operate effectively together’ (Dufour 2018, 1).

The first general challenge to interoperability is the overall gap between the US and Europe in terms of total defence investment, as well as in terms of civilian technological attainment with respect to AI and related technologies. There is no single solution to this problem, which is much broader in scope than traditional military–technical standards, such as those pursued in the NATO context through existing mechanisms. For this broad challenge, overall policy decisions relating to national investment choices and technology policy coordination between the two sides of the Atlantic are of particular importance. Further discussion of this follows in the sections on investment challenges and international security challenges.

A second challenge to interoperability is that, as far as digital technologies are concerned, the civilian sector of the economy, on both sides of the Atlantic, is more advanced, more dynamic and also not especially oriented towards meeting military needs. For decades, the military sector has represented only a very small share of the total sales volume of the computing and semiconductor industries. The same pattern is repeating itself currently with AI. This stands in great contrast to narrower dual-use technologies, for example aerospace, where the military sector remains inherently important. With digital technologies, defence institutions are under much more pressure to either adapt to civilian industry products and standards or to pay a significant premium to suppliers to secure military-grade equipment and software.

A third challenge to interoperability lies in how AI is implemented in practice. To set up a bespoke machine-learning algorithm in a given data environment, best practice in the software industry is to pursue some variant of ‘agile’ development. This involves a very different product-development cycle, essentially proceeding with multiple rapid iterations of an imperfect product that is released in preliminary versions and later revised—like software products released in various ‘beta versions’—with upgrades developed over time. This contrasts greatly with the traditional production of major military platforms, which puts a premium on strict quality control and compliance with requirements at every development step—an approach referred to in the software industry as ‘waterfall’ development (Christie 2021b, 87). Agile product development may pose challenges to interoperability. Unless very tight standards are applied, there is a considerable risk of divergences in how different national institutions go about solving a particular AI or data analytics problem.

With large traditional military platforms there are long time frames during which states can take coordination steps, either by purchasing the same platforms, or by building consensus in terms of requirements and standards. However, when a comparatively small team works dynamically to generate an algorithmic solution to a particular problem in a matter of weeks or months, traditional coordination through existing consultation mechanisms may pose risks to the speed advantage inherent to agile development. Conversely, once a solution has been developed, its adoption in somewhat different environments may be challenging for a range of technical reasons. None of these issues is insurmountable, but they do pose, in a new light, classical trade-offs between the benefits of inventiveness and dynamism, on the one hand, and those of imposing constraints through standards and other harmonising measures to ensure that new products can be broadly used and shared on the other. In the case of AI, a typical observation is that there are many excellent prototypes and pilot projects in numerous defence institutions, but there are also serious outstanding challenges in terms of scaling up to enterprise-wide solutions, let alone Alliance-wide solutions.

### Alt Causes---1NC

#### Tons of issues are fracturing NATO. It’s a structural problem of interest divergence, not something that can be solved through limited dialogue.

Eugene Rumer & Richard Sokolsky 4/11, Rumer, a former national intelligence officer for Russia and Eurasia at the U.S. National Intelligence Council, is a senior fellow and the director of Carnegie’s Russia and Eurasia Program; Sokolsky is a nonresident senior fellow in Carnegie’s Russia and Eurasia Program, “Putin’s War Against Ukraine and the Balance of Power in Europe,” Carnegie Endowment for International Peace, 4-11-2022, https://carnegieendowment.org/2022/04/11/putin-s-war-against-ukraine-and-balance-of-power-in-europe-pub-86832

Notwithstanding the allies’ early show of unity in the wake of the Russian attack on Ukraine, some of their differences and challenges to a more robust NATO posture have not disappeared entirely. These include the varying interests and priorities of the EU’s and NATO’s diverse members, as well as likely disagreements over which threats and challenges should be privileged in resource allocation decisions (among issues ranging from the Russian threat, China, climate change, pandemics, immigration, borders, refugees, or diversification of energy supplies). It would be prudent to not take for granted that Europe will forge the political unity and raise the billions of euros it will require to create a first-class military that might substitute for or provide a substantial addition to NATO’s military kit.

Moreover, the unanimity with which Europe came together to impose sanctions on Russia and help Ukraine is likely due to the fact that Ukraine is not a NATO member, and demonstrations of solidarity with it do not involve defense commitments through NATO’s Article 5. In the event of a Russian attack against a NATO member country, the specter of an all-out war with Russia may lead some allies to demonstrate less resolve and more caution and hesitation.

One headline is likely to become a trend line: Putin has confirmed that nuclear weapons are useful for a wide range of deterrence and coercive purposes to go along with what will still be formidable conventional capabilities in a short-war scenario, such as a quick land grab in the Baltic region. Several implications flow from this development.

First, notwithstanding rhetoric about defending every inch of NATO territory and the alliance’s impressive show of resolve, NATO may be unable or unwilling to conduct an Article 5 intervention against a Russian attack. The alliance may choose instead to form a coalition of willing NATO countries to defend vulnerable countries on its eastern flank.

### AT: Russia War Impact---1NC

#### Larger Russia war is impossible---they don’t have capabilities AND deterrence prevents going nuclear.

Limor Simhony 22, policy advisor and researcher based in London, “NATO Intervention in Ukraine Won’t Spark World War III,” Foreign Policy, 4/1/2022, https://foreignpolicy.com/2022/04/01/nato-intervention-in-ukraine-wont-spark-world-war-iii/

The main concern is any such escalation could lead to World War III. There are two reasons that this is unlikely. The first is that Russia’s military capabilities are poor relative to those of Western armies. Their forces are not sufficiently trained; their equipment and weapons are dated and inferior; they experience major logistical, operational, and tactical difficulties; and their soldiers have low morale.

Damaging economic sanctions also mean that Russia may not be able to fund a wider war. The expectation that Moscow will be able to escalate the war into other theaters in an effective way, especially by conventional means, is unrealistic. It is possible that if the Russian military continues to struggle, Russian President Vladimir Putin will deploy chemical or even nuclear weapons to increase gains and deter the West from interfering—but that is unlikely.

The second is that Russia has become isolated. To fight a world war, Russia needs powerful allies, which it does not have. Its strongest ally, China, has largely remained on the sidelines since the war started. It abstained from voting against the U.N. resolution demanding that Russia ends its offensive, and it is worried about secondary sanctions if it aids Russia. The only countries besides Russia that voted to reject the resolution were Belarus, North Korea, Eritrea, and Syria—hardly a winning alliance. Both world wars saw blocks of powerful allies fight one another. Currently, such a bloc does not exist on Russia’s side.

These factors mean that there is not a high risk of substantial escalation into total global war. This should be enough to convince Western nations to change their engagement policy and help Ukraine win the war by repulsing an opponent that is considerably inferior militarily to their own forces. It is unlikely to happen for two main reasons: fear of Russian nukes and the West’s aversion to casualties.

The most widely discussed reason is the concern that Russia will use nuclear weapons if NATO intervenes militarily. Putin has reasserted Russia’s right to use nuclear weapons in Ukraine, making this a legitimate concern. However, it is more likely that nuclear deterrence—albeit different to Cold War deterrence—will hold. Russia’s deployment of nuclear weapons, either against Ukraine or against a NATO member state, could incur devastating consequences for Russia.

As then-U.S. Defense Secretary James Mattis said in 2018, dismissing the notion that tactical nuclear weapons are somehow a lesser threat, “Any nuclear weapon used … is a strategic game-changer.” Therefore, if NATO retaliates with a powerful response, either nuclear or conventional, it may target strategic Russian military positions and perhaps even sites of political power, aiming at wiping out Russian military capabilities and targeting those in positions of authority—a move that could threaten Putin’s leadership. A NATO retaliation should therefore be considered a major threat to Putin, especially because rivals include numerous nations with considerable nuclear capabilities, such as the United States, United Kingdom, and France.

In addition, at the heart of this conflict stands national identity. Putin has little motivation to devastate a county that he wishes to annex and has not knowingly made any preparations for using nuclear weapons. Fear of the bomb accounts for one reason behind the West’s decision to leave Ukraine to fight on its own.

Another consideration is fundamental to the West: casualty sensitivity.

Sensitivity to casualties—specifically deaths among troops—has become a major element affecting liberal democracies’ war preparedness, use of force, and decision-making regarding participation in wars.

The trauma of Britain’s so-called lost generation followed the loss of 750,000 troops in World War I. It overwhelmed the public and affected interwar foreign policy and military preparedness in a misguided attempt to avoid another war. The same happened in other liberal democracies scarred by the war, such as France, whereas countries with shallower liberal and democratic traditions—such as Germany, which suffered heavier losses than France and Britain—consequently gravitated toward fascism and reverted to militarism.

Conflict behavior and public attitudes toward wars have undergone deep changes during the 20th and 21st centuries as a result of extensive liberalization and democratization processes. Liberal concepts of individualism, personal freedoms, a reduction in internal violence, and a comfortable lifestyle that includes longer life expectancy brought about changes in attitudes about war—primarily, that it is an undesirable way to resolve conflicts. Rejecting the violence and suffering that comes with it has made it difficult for leaders of liberal democracies to justify to the public participation in wars, especially wars of choice, in which the nation is not under direct threat.

The United States’ interventions in Vietnam, Lebanon, Somalia, and Iraq, for example, were shaped by the casualties incurred. The 1983 bombing of the Marine Corps barracks in Lebanon that killed 241 U.S. service members and the 1993 Battle of Mogadishu, where 18 U.S. soldiers died, provoked powerful reactions against the missions, bringing them to an abrupt end despite them initially enjoying wide public support.

A similar reaction came after the Tet Offensive in Vietnam in January 1968, which resulted in 1,500 American fatalities. It was a watershed moment that changed the debate about the war and led to the shelving of plans for escalation. Support for the second war in Iraq also fell dramatically as deaths mounted, causing the American public to question the necessity of the war or its conduct and chances of success.

Israel’s use of force against Hezbollah in Lebanon has been heavily influenced by casualty aversion. This included an overreliance on air power in an attempt to limit fatalities among ground forces during the 2006 Lebanon War at the price of undermining military effectiveness. Then-Israeli Chief of Staff Lt. Gen. Dan Halutz famously commented: “We didn’t send ground troops into Lebanon because the public couldn’t stomach any more deaths.”

Israel’s withdrawal from southern Lebanon, where forces had been deployed between 1985 and 2000, was also heavily influenced by the public’s dissatisfaction with the casualties incurred, particularly after several costly incidents during the 1990s undermined support for a continued military presence and enhanced criticism of the government.

Nondemocracies and guerrilla and terrorist organizations do not exhibit such an aversion to casualties. During the Iran-Iraq War, both sides callously scarified children by using them as human minesweepers and shields. Similarly, both the Viet Cong in Vietnam and Hezbollah in Lebanon showed considerable willingness to sacrifice lives despite suffering more losses than their liberal enemies. Then-Egyptian President Anwar Sadat famously said, “Egypt would sacrifice a million Egyptian soldiers” during the October 1973 war against Israel despite not facing an existential threat or serious strategic concerns.

There has been little evidence to suggest there is heightened sensitivity to losses among troops in Russia, a nation with a history of mass deaths in both the world wars, its own civil war, and from the brutal suppression and killing of its own people. The continued use of force in Ukraine, which has resulted in as many as 15,000 Russian military deaths so far according to the Washington Post, indicates that casualties are of no concern to Russia’s top brass. This stands in contrast to Ukraine, which accepts its causalities because it is fighting an existential war for independence and national survival.

Casualty sensitivity has been one of the factors shaping democracies’ behavior, with Western politicians preferring to avoid direct engagement in wars or to limit the use of ground forces, even at the price of compromising objectives and deterrence. It is one of the reasons that a policy of nonengagement was adopted, without question or hesitation, regarding Ukraine, long before Putin raised the alert status of Russia’s nuclear arsenal.

Fear of casualties among soldiers meant that a policy of nonengagement has existed prior to Russia’s invasion—and therefore separately to a concern about escalating into a broader war. This has been understood by Putin, who bet—correctly—that Western nations will not take an active role in the war by using direct force against Russian troops, not only out of fear of escalation but as a result of a preexisting doctrine that seeks to minimize casualties. Had the West exhibited less casualty aversion, this could have acted as a greater deterrent against Russian aggression.

For the war in Ukraine, unlike the risk of escalation and use of nuclear weapons, the risk of incurring casualties is high. Considering how formative aversion to casualties has been, committing troops to fight Russia will require liberal democracies to undergo a major paradigm shift.

But there are ways to mitigate the effect of casualty sensitivity on public opinion. Adjusting the public’s expectations regarding the length of the war and the casualties that will result as well as displaying internal political unity could help. Employing force that relies primarily on air power, which limits casualties, can be used; during Israel’s 2006 war in Lebanon and other wars, this has proved to have only limited effectiveness. However, if done in collaboration with Ukrainian ground forces, this could have better chances of success.

This war brought a shift in attitudes toward wars in Europe. The Germans, famously pacifist since 1945, have undergone the largest shift and now support military aid to Ukraine and a considerable increase in funds to rebuild Germany’s military power. But a bigger shift is needed considering Russia’s aggression.

Russia is no stranger to targeting civilians, as it has done in the carpet-bombing of Grozny in Chechnya, in 1994 to 1995 and 1999 to 2000. It is doing this again now. It is time for the West to stop being afraid of limited threats that are not likely to materialize and to use its military superiority to help Ukraine defend its independence.

Intervention will not turn this local conflict into World War III. It runs the risk of causing a tactical nuclear attack on Ukraine, but this risk is limited given what any retaliation could mean for Russia. The West must therefore decide how long it will refrain from engagement and allow Russia to sow devastation in pursuing expansionist ambitions for fear of casualties or the bomb.

### AT: Russia War Impact---AT: Invasion

#### Zero chance Russia attacks NATO after Ukraine

Paul Miller 22, professor of the practice of international affairs at Georgetown University, “Ukraine Is Not World War III,” The Dispatch, 3/8/2022, https://thedispatch.com/p/ukraine-is-not-world-war-iii?s=r

War gets the blood up. Gary Kasparov—former world chess champion turned dissident against Putin’s Russia—claimed on March 3 that “this is already World War III.”

“Putin started it long ago & Ukraine is only the current front,” Kasparov argued. He will escalate anyway, and it's even more likely if he succeeds in destroying Ukraine because you have again convinced him you won't stop him even though you could.”

Kasparov has warned about Putin’s aggression for years, and his book Winter Is Coming largely predicted what we’re witnessing today. But sayijeng we are already fighting World War III is the classic never-appease-aggressors logic by which any authoritarian is likened to Hitler in 1939: if we don’t stop him now, he will only be emboldened to invade the next country, and the next, until he is knocking on our front door with an armored division or two. Better to accept reality and start World War III now than wait for Putin to initiate it and force us to fight it on his terms.

The logic is familiar and the danger is plain, which is why some people seem more willing to risk general war against Russia in an all-out effort to stop Putin now, before he invades the next country. Kasparov’s argument has been echoed by other commentators who warn Putin will not stop at Ukraine, or who insist the U.S. and NATO must militarily intervene in the war in Ukraine. The head of the European Council on Foreign Relations openly called for regime change in Russia. Ukrainian President Volodymyr Zelensky called on NATO to impose a no-fly zone over Ukraine, an idea former National Security Adviser John Bolton partially endorsed. A no-fly zone, of course, would involve NATO aircraft shooting down Russian warplanes over Ukrainian skies. To put it plainly: A no-fly zone is a declaration of war against Russia and the first step on a path that would lead to general war.

The war in Ukraine is not yet World War III. To act as if it were by proactively escalating or expanding the war is both strategically unnecessary and immoral. It would be to trigger the very war we should most want to avoid. The war in Ukraine is an extremely dangerous development for world order, the only thing more dangerous than which would be to overreact and recklessly expand the war.

Prelude to a conflict.

Treating the war as if it were already World War III, and Russia’s invasion of Ukraine a prelude to general European conflict, is unnecessary because Russia cannot and will not expand the war beyond Ukraine. The historical analogy—Putin as Hitler hellbent on continental conquest—is flawed. While Putin may have boundless ambition, his actual capabilities are severely bounded by reality.

The German military in 1940, as its blitzkrieg swept across Europe, numbered some 6 million soldiers in all branches. Over the course of the war, some 18 million Germans served in uniform, approaching one-third of its total population. Germany was the economic powerhouse of Europe in 1940 and could outproduce any European competitor in military equipment and supplies.

At the start of the war, the Germans arguably had the best tank (the Panzer) and the best fighter plane (the Messerschmitt). The German scientific and industrial base was among the best in Europe and had a head start in its focus on military technology. German military scientists invented the jet, rocket, cruise missile, and helicopter before any of the Allies. And the German military was infamous—again, at the beginning of the war—for its extraordinary training, discipline, and cohesion.

None of that is true of Russia or the Russian military today. The Russian military has about 1 million active-duty soldiers, a fraction of what Germany had at the beginning of its conquests. Russia could call up vast reserves, but it would take years to turn them into a trained and capable fighting force. Russian tanks and jets are better than Germany’s of 1940—but not better than NATO’s in 2022. Over the past week, the Russian military has proven inadequate in basic tasks like vehicle maintenance, let alone operational planning, combined arms operations, air assault, and air defense.

The 21s century Russian military overwhelmed smaller opponents in Chechnya and Syria through sheer force of numbers and utter disregard for the laws of armed conflict. But it has clearly struggled when faced with a moderately larger and more challenging opponent in Ukraine. The Russian army is hardly ready to invade the next country over, or the one after that. No Russian blitzkrieg is in the offing. It is materially incapable of doing so. Hitler spent the better part of a decade rearming and preparing for his war (and still lost).

And Russia is utterly incapable of waging a prolonged war. Even before global economic sanctions cratered the Russian economy last week, it was smaller than Italy’s. The GDP of the United States and European Union combined account for about 42 percent of the world’s wealth; Russia about 3 percent (and shrinking). Russia does have an advanced scientific and knowledge base, but because of its economic woes struggles to translate its knowledge into superior weaponry that it can produce at scale. If the Russians tried today, the Polish army backed by the American Air Force would win a decisive and rapid victory.

### AT: Russia War Impact---AT: Invasion---Defense---Ext

#### Zero chance of an attack on NATO. Ukraine’s different because it’s not covered by a defense commitment. NATO’s a clear redline Putin’s deliberatly avoiding. Even if he wants to take over Europe, he can’t because of clear economic, manpower, and technical constraints. That’s Miller.

#### He’s worried about NATO’s nukes---he won’t risk it

Nina Tannenwald 3/10, teaches international relations in the Political Science Department at Brown University, “‘Limited’ Tactical Nuclear Weapons Would Be Catastrophic,” Scientific American, 3/10/2022, https://www.scientificamerican.com/article/limited-tactical-nuclear-weapons-would-be-catastrophic/

Since Russia invaded Ukraine on February 24, Russian President Vladimir Putin has given orders to increase the alert level of Russia’s nuclear forces and has made veiled nuclear threats. The blatant aggression against Ukraine has shocked Europe and the world. The war is a tragedy for Ukraine. It also exposes the limits of the West’s reliance on nuclear deterrence.

Deterrence refers to the idea that possessing nuclear weapons protects a nation from attack, through the threat of overwhelming retaliation. This concept is widely credited for helping prevent war between the United States and the Soviet Union during the Cold War. However, Russia’s invasion of Ukraine casts a harsh light on its downsides. Most obvious is that Putin is using nuclear deterrence not to protect Russia but rather to have his way in Ukraine. Russia’s nuclear weapons deter the West from intervening with conventional military forces to defend Ukraine. Despite scattered calls in the U.S. for the creation of a “no-fly zone” over some or all of Ukraine, the Biden administration has wisely resisted. In practice this would mean shooting down Russian planes. It could lead to World War III. On the other side of the ledger, NATO’s nuclear weapons presumably deter Russia from expanding the war to NATO countries, such as Poland, Romania or the Baltic states. Thus, the nuclear balance of terror likely deters a wider European war but leaves Ukraine to struggle on with only limited support and perhaps eventually to be swallowed. On balance, NATO states do not seem very reassured by their vaunted nuclear deterrence. They continue to worry about the (remote) possibility of a Russian conventional attack beyond Ukraine.

#### Residual tensions can be managed to avoid miscalculation---even if Russia wins

Liana Fix & Michael Kimmage 2/18, Liana Fix is a Resident Fellow at the German Marshall Fund, in Washington, D.C.; Michael Kimmage is Professor of History at the Catholic University of America and a Visiting Fellow at the German Marshall Fund, served on the Policy Planning Staff at the U.S. Department of State, where he held the Russia/Ukraine portfolio, “What If Russia Wins?,” Foreign Affairs, 2/18/2022, https://www.foreignaffairs.com/articles/ukraine/2022-02-18/what-if-russia-wins

IMPERILING EUROPE'S EAST

In the event of a Russian victory in Ukraine, Germany‘s position in Europe will be severely challenged. Germany is a marginal military power that has based its postwar political identity on the rejection of war. The ring of friends it has surrounded itself with, especially in the east with Poland and the Baltic states, risks being destabilized by Russia. France and the United Kingdom will assume leading roles in European affairs by virtue of their comparatively strong militaries and long tradition of military interventions. The key factor in Europe, however, will remain the United States. NATO will depend on U.S. support as will the anxious and imperiled countries of Europe’s east, the frontline nations arrayed along a now very large, expanded, and uncertain line of contact with Russia, including Belarus and the Russian-controlled parts of Ukraine.

Eastern member states, including Estonia, Latvia, Lithuania, Poland, and Romania, will likely have substantial numbers of NATO troops permanently stationed on their soil. A request from Finland and Sweden to gain an Article 5 commitment and to join NATO would be impossible to reject. In Ukraine, EU and NATO countries will never recognize a new Russian-backed regime created by Moscow. But they will face the same challenge they do with Belarus: wielding sanctions without punishing the population and supporting those in need without having access to them. Some NATO members will bolster a Ukrainian insurgency, to which Russia will respond by threatening NATO members.

Ukraine’s predicament will be very great. Refugees will flee in multiple directions, quite possibly in the millions. And those parts of the Ukrainian military that are not directly defeated will continue fighting, echoing the partisan warfare that tore apart this whole region of Europe during and after World War II.

The permanent state of escalation between Russia and Europe may stay cold from a military perspective. It is likely, though, to be economically hot. The sanctions put on Russia in 2014, which were connected to formal diplomacy (often referred to as the “Minsk” process, after the city in which the negotiations were held), were not draconian. They were reversible as well as conditional. Following a Russian invasion of Ukraine, new sanctions on banking and on technology transfer would be significant and permanent. They would come in the wake of failed diplomacy and would start at “the top of the ladder,” according to the U.S. administration. In response, Russia will retaliate, quite possibly in the cyber-domain as well as in the energy sector. Moscow will limit access to critical goods such as titanium, of which Russia has been the world’s second-largest exporter. This war of attrition will test both sides. Russia will be ruthless in trying to get one or several European states to back away from economic conflict by linking a relaxation in tension to these countries’ self-interest, thus undermining consensus in the EU and NATO.

Europe’s strong suit is its economic leverage. Russia’s asset will be any source of domestic division or disruption in Europe or in Europe’s transatlantic partners. Here Russia will be proactive and opportunistic. If a pro-Russian movement or candidate shows up, that candidate can be encouraged directly or indirectly. If an economic or political sore point diminishes the foreign policy efficacy of the United States and its allies, it will be a weapon for Russian propaganda efforts and for Russian espionage.

Much of this is already happening. But a war in Ukraine will up the ante. Russia will use more resources and be unchained in its choice of instruments. The massive refugee flows arriving in Europe will exacerbate the EU’s unresolved refugee policy and provide fertile ground for populists. The holy grail of these informational, political, and cyberbattles will be the 2024 presidential election in the United States. Europe’s future will depend on this election. The election of Donald Trump or of a Trumpian candidate might destroy the transatlantic relationship at Europe’s hour of maximum peril, putting into question NATO’s position and its security guarantees for Europe.

TURNING NATO INWARD

For the United States, a Russian victory would have profound effects on its grand strategy in Europe, Asia, and the Middle East. First, Russian success in Ukraine would require Washington to pivot to Europe. No ambiguity about NATO’s Article 5 (of the kind experienced under Trump) will be permissible. Only a strong U.S. commitment to European security will prevent Russia from dividing European countries from one another. This will be difficult in light of competing priorities, especially those that confront the United States in a deteriorating relationship with China. But the interests at stake are fundamental. The United States has very large commercial equities in Europe. The European Union and the United States are each other’s largest trade and investment partners, with trade in goods and services totaling $1.1 trillion in 2019. A well-functioning, peaceful Europe augments American foreign policy—on climate change, on nonproliferation, on global public health, and on the management of tensions with China or Russia. If Europe is destabilized, then the United States will be much more alone in the world.

NATO is the logical means by which the United States can provide security reassurance to Europe and deter Russia. A war in Ukraine would revive NATO not as a democracy-building enterprise or as a tool for out-of-area expeditions like the war in Afghanistan but as the unsurpassed defensive military alliance that it was designed to be. Although Europeans will be demanding a greater military commitment to Europe from the United States, a broader Russian invasion of Ukraine should drive every NATO member to increase its defense spending. For Europeans, this would be the final call to improve Europe’s defensive capabilities—in tandem with the United States—in order to help the United States manage the Russian-Chinese dilemma.

The nuclear superpowers would have to keep their outrage in check.

For a Moscow now in permanent confrontation with the West, Beijing could serve as an economic backstop and a partner in opposing U.S. hegemony. In the worst case for U.S. grand strategy, China might be emboldened by Russia’s assertiveness and threaten confrontation over Taiwan. But there is no guarantee that an escalation in Ukraine will benefit the Sino-Russian relationship. China’s ambition to become the central node of the Eurasian economy will be damaged by war in Europe, because of the brutal uncertainties war brings. Chinese irritation with a Russia on the march will not enable a rapprochement between Washington and Beijing, but it may initiate new conversations.

The shock of a big military move by Russia will likewise raise questions in Ankara. President Recep Tayyip Erdogan’s Turkey has been enjoying the venerable Cold War game of playing off the superpowers. Yet Turkey has a substantial relationship with Ukraine. As a NATO member, it will not benefit from the militarization of the Black Sea and the eastern Mediterranean. Russian actions that destabilize the wider region could push Turkey back toward the United States, which could in turn drive a wedge between Ankara and Moscow. This would be good for NATO, and it would also open up greater possibilities for a U.S.-Turkish partnership in the Middle East. Rather than a nuisance, Turkey could turn into the ally it is supposed to be.

A bitter consequence of a wider war in Ukraine is that Russia and the United States would now encounter each other as enemies in Europe. Yet they will be enemies who cannot afford to take hostilities beyond a certain threshold. However far apart their worldviews, however ideologically opposed, the world’s two most significant nuclear powers will have to keep their outrage in check. This will amount to a fantastically tricky juggling act: a state of economic warfare and geopolitical struggle across the European continent, yet a state of affairs that does not allow escalation to tip into outright war. At the same time, U.S.-Russian confrontation can in the worst case extend to proxy wars in the Middle East or Africa if the United States decides to reestablish its presence after the catastrophic Afghanistan withdrawal.

Maintaining communication, especially on strategic stability and cybersecurity, will be crucial. It is notable that U.S.-Russian cooperation on malicious cyber-activities continues even during the current tensions. The necessity of maintaining rigorous arms control agreements will be even greater after a Ukraine war and the sanctions regime that follows it.

#### Putin’s aims are limited

Mitch Clarke 3/16, director of news and content for Jacobs Media, citing Craig Greathouse, associate department head in political science and international affiars at UNG, “UNG prof: Conflict unlikely to expand beyond Ukraine,” AccessWDUN, 3/16/2022, https://accesswdun.com/article/2022/2/1080789/ung-prof-conflict-unlikely-to-expand-beyond-ukraine

Experts are divided over what Russian President Vladimir Putin's end game in Ukraine is, but an international affairs expert at UNG doesn't think he'll try to invade any of the former Soviet bloc countries.

Craig Greathouse, the associate department head in political science and international affairs, believes Putin would like to reconstitute the old Soviet Union. But that might be out of his reach, Greathouse said.

Former Soviet bloc countries like Estonia, Latvia, Lithuania are now members of NATO, and the provisions of the NATO treaty's Article 5 might cause concern for Russia.

"If he moves to attack these countries, it activates Article 5 of the NATO Treaty," Greathouse said. "And Article 5 is very specific. It says, 'If any member of NATO is attacked, all the other members of NATO will come to their defense.' And that includes the United States."

Ukraine, on the other hand, is not a NATO member and has perhaps the closest historical ties to Russia.

"Before the Soviet Union broke apart, Ukraine was a significant element of the Soviet Union," Greathouse said. "In the past, it's been described as the Soviet Union's breadbasket. There was also a lot of industry, especially in the eastern part of the country. Also it holds close ties to the Crimea region, which holds one of the few ports that Russia can use to get into the Mediterranean."

Greathouse said it's too early to know what Putin's ultimate goal is. Putin, in fact, may only be trying to claim a portion of Ukraine.

"That's going to be an interesting question, because it's not quite clear how far he's going to go with Ukraine yet," he said. "Is he just going to take parts of it? Or is he going to try and take the whole country? If the reports are correct, with 190,000 Russian soldiers, I don't know if he can basically control the entire Ukraine."

Greathouse doesn't believe the conflict will spread beyond Ukraine in a physical war. But an increase in cyberattacks is likely.

### AT: Russia War Impact---AT: Ukraine---Not Nuclear---Ext

#### Won’t go nuclear or draw in NATO

Tom Rogan 2/28, foreign policy/national security writer for the Washington Examiner, Bachelor of Arts in War Studies from King's College London, a Master of Science in Middle East politics from SOAS, and a Graduate Diploma in Law from the University of Law, London, “Why Russia is highly unlikely to use nuclear weapons,” Washington Examiner, 2/28/22, https://www.washingtonexaminer.com/restoring-america/courage-strength-optimism/why-russia-is-highly-unlikely-to-use-nuclear-weapons

As Russia struggles to conquer Ukraine, Vladimir Putin has moved his strategic nuclear forces to a heightened alert posture.

Satellite imagery also indicates that the Russian Northern Fleet has moved more ballistic missile submarines into Arctic and Barents sea patrol sectors. While U.S. nuclear forces remain at standard readiness levels, the U.S. military has a greater baseline readiness and redundant nuclear strike capability than does Russia.

I suspect the ultimate intent of Putin's public nuclear threat is to dangle the risk of escalation so as to deter Western unity on further sanctions. This would not be the first time — in October 2020, Russian state media threatened to turn Germany into a "radioactive desert" following that nation's hosting of NATO nuclear exercises. The pressure worked. Nudged by left-wing elements in his Social Democratic Party, Chancellor Olaf Scholz cooled Germany's nuclear commitments under NATO.

In Ukraine's case, Putin's nuclear threats likely come in his anticipation of massive Russian conventional attacks upon Ukrainian civilian population centers such as Kyiv. Russian forces are struggling to break through determined Ukrainian resistance. Putin's form in Chechnya and Syria suggests he will attempt to smash Ukraine's civilian morale and thus its government's will to resist. But Putin also needs the West to hesitate before further punishing him for the terror yet to come.

Regardless, the risk of a Russian nuclear strike remains very low for two further reasons.

First off, a nuclear strike would not be in Russia's or Putin's interest. The Kremlin appears to have been shocked by the significant Western sanctions already imposed upon its economy and against Putin's person. Yet were Russia to detonate a nuclear warhead over Ukrainian forces or Kyiv, it would likely precipitate total economic isolation. This would have a profound impact on Russian society, likely precipitating mass protests against Putin's rule and perhaps encouraging a palace coup. Even erstwhile Russian partners such as China would likely be pushed into supporting sanctions in such a scenario, fearing the catastrophic public relations damage of failing to do so. (China has a vested interest in strengthening its relations with the European Union.) Putin may be many things, but he is not stupid. And despite the speculation, I understand that there is no high-quality evidence to suggest that Putin is mentally ill or has otherwise lost his mind.

Second, it is far from certain that Russian military forces would actually carry out a nuclear attack order. Like the U.S., Russian nuclear command and control has traditionally relied upon two- to three-person release protocols to ensure a legitimate nuclear order.

The exact Russian nuclear release protocols are highly classified and unknown but would likely involve both Defense Minister Sergei Shoigu and Chief of the General Staff Valery Gerasimov's authentication of Putin's order. While Putin's more recent centralization of power may have altered these protocols, the general staff would still need to distribute attack orders to nuclear forces. Those forces would then need to carry out the order. That matters because these personnel know that any nuclear strike would entail, as a minimum, catastrophic sanctions and the degradation of Russian military history and honor. In the worst-case scenario, a nuclear strike would risk an escalation spiral that ends with nuclear war against NATO.

Gerasimov isn't crazy. Nor are most of the security elite around Putin. They know that once one nuclear weapon is used, U.S., British, and French nuclear forces would immediately move to very high alert status. Russian forces would then do the same. The Russians know that this dynamic would greatly exacerbate the risk of miscalculation.

Consider, for example, that Russian ballistic missile submarines are almost constantly shadowed by U.S. and British attack submarines while on patrol. After a Russian nuclear strike on Ukraine, one miscalculation might lead to one undersea battle. Fearing an imminent attack at scale, this might then lead to one nation's preemptive strike against the other nation's nuclear assets. This is just a hypothetical scenario, but it illustrates how even the hint of nuclear warfare could lead to a worldwide shooting war. The Russians know this.

The bottom line: Putin and his ultra-hawk spymaster Nikolai Patrushev might support a nuclear strike, but it's highly unlikely they will order one. It's even less likely that others in Putin's inner circle would support it. They would more likely strike him out before agreeing to fire off nukes.

#### There are intermediate steps in the escalatory ladder---ongoing conflict doesn’t necessarily mean nuclear war

Ryan Faith 3/11, former defense and national security editor at VICE News and congressional staffer, writes about defense and space policy, “Ukraine Isn’t World War III. It’s Not Even Close.,” Daily Beast, 3/11/2022, https://www.thedailybeast.com/ukraine-isnt-world-war-iii-its-not-even-close

However unnerving Russia’s invasion of Ukraine is, the fight is a long, long way from the titanic, globe-spanning conflict that would constitute a “world war.”

For Ukraine, this is an existential conflict for national survival. For the rest of the world, this conflict may seem terrifying, but that’s what all wars look like to anyone paying attention up close—especially one involving a nuclear-armed combatant. The world hasn’t seen a high-intensity conflict between two relatively modern militaries in Europe since World War II. Of course this is a shock to the system.

If the U.S. and NATO want to constrain Russia’s actions in Ukraine, there are many options short of full conflict.

For instance, during the Korean War, the Soviet Union sent both fighter aircraft and pilots to fly them against U.S. aircraft. This playbook could be repeated with NATO countries contributing equipment and troops. More recently, Russia deployed military “contractors” throughout the eight years of destabilization in Ukraine to provide Moscow with plausible deniability. The U.S. and NATO could likewise deploy contractors, even if they are used in limited non-combat roles such as supply and building fortifications. Plans for Pentagon cyberattacks have been on the books for a while. The point is, there are options for the U.S. and NATO to exert military pressure on Russia without escalating to an all-out war.

The problem now is that preemptively panicking over potential escalation effectively grants Vladimir Putin control over the size and scale of the conflict.

Crucially, just because a conflict could grow into a larger-scale, multi-nation fight doesn’t mean it necessarily will. The management of a conflict's size and scope are things that participants try to closely monitor and manage. Jumping to the conclusion that literally every move by NATO will lead to an apocalyptic war for the ages is grossly premature. It’s like forwarding matches from a dating app to a wedding planner. There are some important intermediate steps you can’t skip.

### \*NORMS ADV\*

### Squo Solves---1NC

#### The US is already innovating, AND existing NATO structures can help set norms

Edward Hunter Christie 22, Senior Research Fellow at the Finnish Institute of International Affairs, “Defence Cooperation in Artificial Intelligence: Bridging the Transatlantic Gap for a Stronger Europe,” European View, vol. 21, no. 1, SAGE Publications Ltd, 04/01/2022, pp. 13–21

Investment challenges

As noted in the introduction, there is a significant gap between overall US and European defence spending levels. This general pattern also holds for defence research and development spending. In 2020, EU spending in this area amounted to €8 billion (EDA 2021). For the US, with caveats as to comparability, expenditure for ‘research, development, test and evaluation’ totalled approximately €90 billion3 in the 2021 fiscal year (from October 2020 to September 2021), or about 10 times more.

Investment challenges go beyond issues of scale. The US also has greater experience in the setting up and operation of structures to promote both military and dual-use innovation. While the best-known institution is the Defense Advanced Research Projects Agency, other US government structures are also relevant in discussions on fostering innovation in AI for military applications. A much-discussed example is In-Q-Tel, which was originally set up as the state venture-capital arm of the Central Intelligence Agency. To illustrate the influence of the In-Q-Tel example, one may note that both its current Chief Executive Officer, Chris Darby, and one of its former Chief Executive Officers, Gilman Louie, served among the 15 commissioners of the National Security Commission on Artificial Intelligence.4 This was a temporarily created expert commission mandated by the US Congress to provide policy recommendations for a whole-of-government and whole-of-society approach for US AI policy.5

With In-Q-Tel, the idea is to learn from private-sector practices in the area of venture-capital investment and repurpose them for state needs and more patient time horizons. A supported company should pursue product development strategies aimed at serving both civilian markets and government needs. In this way, rather than effectively taking over a commercial company and limiting its growth potential to future government contracts alone, the government body encourages an intermediate trajectory made up of mixed revenue streams, in the hope that this will generate greater returns to scale and higher efficiency thanks to the disciplining effect of private-sector competition. Conversely, the advantage of this approach as compared to not intervening at all is that the commercial company will integrate current and likely future government needs into its product and business-development strategy, rather than ignoring them and finding itself, at a later date, unable to supply the government sector according to the latter’s requirements.

A related issue which falls between what can be achieved with new investment instruments and new protections that can be assured through the screening of foreign direct investment is the provision of investment from trusted private investors to the technology sector. Certain technology companies that are not part of the traditional defence industry may be developing dual-use products that are of potential interest to the defence sector while having limited awareness of national security concerns. This may make them vulnerable targets for both licit and illicit attempts to acquire their technologies on the part of foreign state actors. At the same time, their business development needs may lead them to seek investment from any potential source, thus exposing them to potential risks. To respond to this challenge, the US Department of Defense has launched a scheme called the Trusted Capital Marketplace (US Department of Defense 2021a).

Building on these considerations, the NATO Innovation Unit has developed two new instruments for Allied use which were announced to the public in October 2021 (NATO 2021a; 2021b). Both instruments aim to foster technological innovation with a deliberate focus on dual-use applications and on enterprises with mixed (potential) revenue streams. The first instrument is the Defence Innovation Accelerator for the North Atlantic (DIANA), which is a NATO instrument, that is, it involves the participation of all 30 NATO Allies. The second instrument is the NATO Innovation Fund, which in NATO terminology is a ‘multinational’ instrument, namely one that Allies freely opt into.

DIANA will aim to accelerate the adoption of dual-use technological solutions through several interlocking components.6 First, it will develop a network of national organisations, in particular test centres and innovation accelerators. Second, it will competitively select private-sector innovators and allow them to use national organisations in the network to interface with military end users and military capability-development specialists. Third, it is envisaged that DIANA will provide mentorship and education services for private innovators to familiarise them with the opportunities and responsibilities inherent to the defence and security sector. Fourth, DIANA will develop a database of trusted financial investors from Allied nations and support matchmaking between investors and innovators. Fifth and finally, DIANA will also provide expert advice on defence and security innovation to all relevant stakeholders, including private-sector and academic entities.

Regarding the NATO Innovation Fund, 17 Allies had opted into the Fund as of the date of its announcement in October 2021. The participating Allies will inject up to €1 billion into Allied innovation ecosystems over the next 15 years. The Fund aims to attract additional private investments due to the de-risking effect, both financial and technological, thanks to state co-funding and diligence and screening efforts. The funds are intended to be used for long-term support of ‘deep tech’ innovative companies, that is, for advanced research into AI, quantum and related technologies that may have both military and civilian applications. Due diligence and security screening practices will aim to ensure that both private investors and fund recipients are trusted entities.

### Interop Fails---1NC

#### Interoperability challenges are structural---they can’t be fixed through consultation or dialogue.

Edward Hunter Christie 22, Senior Research Fellow at the Finnish Institute of International Affairs, “Defence Cooperation in Artificial Intelligence: Bridging the Transatlantic Gap for a Stronger Europe,” European View, vol. 21, no. 1, SAGE Publications Ltd, 04/01/2022, pp. 13–21

Interoperability challenges

Interoperability can be defined as ‘the ability of systems, units or forces to provide services to, and accept services from other systems, units or forces and the use the services so exchanged to enable them to operate effectively together’ (Dufour 2018, 1).

The first general challenge to interoperability is the overall gap between the US and Europe in terms of total defence investment, as well as in terms of civilian technological attainment with respect to AI and related technologies. There is no single solution to this problem, which is much broader in scope than traditional military–technical standards, such as those pursued in the NATO context through existing mechanisms. For this broad challenge, overall policy decisions relating to national investment choices and technology policy coordination between the two sides of the Atlantic are of particular importance. Further discussion of this follows in the sections on investment challenges and international security challenges.

A second challenge to interoperability is that, as far as digital technologies are concerned, the civilian sector of the economy, on both sides of the Atlantic, is more advanced, more dynamic and also not especially oriented towards meeting military needs. For decades, the military sector has represented only a very small share of the total sales volume of the computing and semiconductor industries. The same pattern is repeating itself currently with AI. This stands in great contrast to narrower dual-use technologies, for example aerospace, where the military sector remains inherently important. With digital technologies, defence institutions are under much more pressure to either adapt to civilian industry products and standards or to pay a significant premium to suppliers to secure military-grade equipment and software.

A third challenge to interoperability lies in how AI is implemented in practice. To set up a bespoke machine-learning algorithm in a given data environment, best practice in the software industry is to pursue some variant of ‘agile’ development. This involves a very different product-development cycle, essentially proceeding with multiple rapid iterations of an imperfect product that is released in preliminary versions and later revised—like software products released in various ‘beta versions’—with upgrades developed over time. This contrasts greatly with the traditional production of major military platforms, which puts a premium on strict quality control and compliance with requirements at every development step—an approach referred to in the software industry as ‘waterfall’ development (Christie 2021b, 87). Agile product development may pose challenges to interoperability. Unless very tight standards are applied, there is a considerable risk of divergences in how different national institutions go about solving a particular AI or data analytics problem.

With large traditional military platforms there are long time frames during which states can take coordination steps, either by purchasing the same platforms, or by building consensus in terms of requirements and standards. However, when a comparatively small team works dynamically to generate an algorithmic solution to a particular problem in a matter of weeks or months, traditional coordination through existing consultation mechanisms may pose risks to the speed advantage inherent to agile development. Conversely, once a solution has been developed, its adoption in somewhat different environments may be challenging for a range of technical reasons. None of these issues is insurmountable, but they do pose, in a new light, classical trade-offs between the benefits of inventiveness and dynamism, on the one hand, and those of imposing constraints through standards and other harmonising measures to ensure that new products can be broadly used and shared on the other. In the case of AI, a typical observation is that there are many excellent prototypes and pilot projects in numerous defence institutions, but there are also serious outstanding challenges in terms of scaling up to enterprise-wide solutions, let alone Alliance-wide solutions.

### Governance Fails---1NC

#### Other states will inevitably deploy militarized AI and future tech---attempts at norm-setting just signal weakness and cede the race to adversaries.

Matt Bartlett 19, Lecturer in the Faculty of Law at the University of Auckland, focuses on the gauntlet of legal and policy issues raised by technology, particularly emerging technologies like AI, blockchain and cryptocurrency, “The AI Arms Race In 2019”, <https://towardsdatascience.com/the-ai-arms-race-in-2019-fdca07a086a7>

This piece will show just how ineffective such activism has been, however well-intentioned. The arms race in AI is already underway — and has been for years. It is now 2019, and we cannot waste time pretending Pandora’s Box hasn’t already been opened. This is the time to take stock of the latent evidence of weaponised AI, and consider the geopolitical incentives that produced this quagmire.

Ready, Set, Gone

A tour of the countries driving the AI arms race may as well start in Moscow. Putin’s government, hardly one to [fall in line with existing global norms](https://www.vox.com/2014/9/3/18088560/ukraine-everything-you-need-to-know), is categorically opposed to the creation of a new norm (against autonomous weapons). Moscow has even — successfully — [lobbied to reduce the number of days](https://futureoflife.org/2018/11/26/handful-of-countries-including-the-us-and-russia-hamper-discussions-to-ban-killer-robots-at-un/) states meet just to discuss the issue. Russia itself has [claimed](https://eandt.theiet.org/content/articles/2017/12/russia-rejects-potential-un-killer-robots-ban-official-statement-says/) that a limit on autonomous weapon development is inappropriate given “few such weapons have ever been developed”.

Selflessly, Russia is working hard on making a lie of such a claim. Leaked budgets for AI-specific research and development for 2019–2021 show state investment ([previously](https://www.defenseone.com/technology/2019/01/russia-expect-national-ai-roadmap-midyear/154015/) $490m USD) almost [doubling](https://www.defenseone.com/technology/2019/01/russia-expect-national-ai-roadmap-midyear/154015/) over the next three years. Russian intent in this area is no secret. Just ask General Gerasimov, a general and Chief of the General Staff of the Russian Forces: [he is on record](http://www.militarynews.ru/story.asp?rid=1&nid=476975) with the state news agency as saying “robots will be one of the main features of future wars… [Russia] is seeking to completely automate the battlefield.”

For a taste of what to expect in future wars, consider this announcement from the crown jewel of Russian arms manufacturers: Kalashnikov (maker of the ubiquitous AK-47). The [arms giant is developing and launching](https://news.vice.com/en_us/article/vbzq8y/russian-weapons-maker-kalashnikov-developing-killer-ai-robots) an entire range of autonomous weapons, each with a ‘neural network’ enabling the machines to pick out targets and decide autonomously whether to engage. Another Russian weapons manufacturer, Degtyarev, [has developed](https://www.forbes.com/sites/noelsharkey/2018/11/28/killer-robots-from-russia-without-love/) an autonomous ‘suicide machine’ called the Nerekhta. This drone is built to stealthily traverse close to a target, and then explode with the force to destroy fortifications or enemy tanks.

It’s important to emphasise here that the selected examples are just the tip of the Russian iceberg: we have not touched the [autonomous nuclear submarines](https://en.wikipedia.org/wiki/Status-6_Oceanic_Multipurpose_System), the ‘[smart swarm’ robot missiles](https://www.newsweek.com/drones-swarm-autonomous-russia-robots-609399) or the [Armata T-14 ‘super tank’.](https://www.forbes.com/sites/noelsharkey/2018/11/28/killer-robots-from-russia-without-love/) The picture is pretty clear: Russia has a large and ambitious autonomous weapons program in place, and sees this program as central to its national security interests. It follows that nobody should be surprised to see Putin — already — on the offensive against the mere spectre of a global AI arms ban.

More surprising, perhaps, is just how aligned the Russian position on autonomous weapons is with that of the United States and China. Indeed, for a pair of geopolitical powers that struggle mightily to [come to consensus](https://en.wikipedia.org/wiki/List_of_vetoed_United_Nations_Security_Council_resolutions) around contentious geopolitical issues, the United States and Russia have displayed [remarkable cohesion in opposing](https://www.independent.co.uk/life-style/gadgets-and-tech/news/killer-robots-un-meeting-autonomous-weapons-systems-campaigners-dismayed-a8519511.html) any prohibitions on autonomous weapons.

Why might this be? No need to reach for the [particular idiosyncrasies of the Commander in Chief](https://www.npr.org/2018/07/17/629601233/trumps-helsinki-bow-to-putin-leaves-world-wondering-whats-up); try a simple number (albeit one with a lot of zeros). The Pentagon [has committed](https://www.theverge.com/2018/4/12/17229150/pentagon-project-maven-ai-google-war-military) to a $9 billion spend on American military AI, explicitly citing the need to keep up with Russian and Chinese military technology. While the American budget for AI represents just a fraction of overall defence spending, much like in Russia, the figure has doubled in recent years.

Unique among the global powers, the US [has already started](https://www.bloomberg.com/news/articles/2018-05-18/the-u-s-army-is-turning-to-robot-soldiers) deploying autonomous vehicles in turbulent combat areas, in large numbers and with significant roles. Autonomous naval vehicles have begun to patrol the South China Sea — with larger, more powerful machines [on their way](https://www.army-technology.com/features/mq4c-triton-drones/). Most striking of all, American aerial drones have [rained death](https://www.thebureauinvestigates.com/projects/drone-war) all over Afghanistan and Pakistan under the Obama administration. It is absolutely clear why the United States have opposed all moves towards a prohibition of autonomous weapons: America wants to win the arms race, not stop it.

For its part, China has actually indicated [its support](https://www.lawfareblog.com/chinas-strategic-ambiguity-and-shifting-approach-lethal-autonomous-weapons-systems) in April last year for a ban on battlefield use of autonomous weapons. However, discerning readers ought to take the Chinese statement with several grains of salt: the very same day, the Chinese air force [released plans](https://mp.weixin.qq.com/s/xfw3hZkCiPJa-gX3GExEcQ) for an ‘intelligent-swarm’ design for a new autonomous drone. In a similar vein, even in the last year the Chinese autonomous weapons program has churned out success stories. [Some critics feel](https://thediplomat.com/2018/08/the-trouble-with-chinas-edge-in-the-ai-arms-race/) that China is taking an unassailable edge in the arms race; somewhat at odds with Beijing’s support for an AI weapons ban.

Elsa Kania for Lawfare [posited](https://www.lawfareblog.com/chinas-strategic-ambiguity-and-shifting-approach-lethal-autonomous-weapons-systems) that the Chinese are pursuing a policy of ‘strategic ambiguity’ with military AI: displaying rhetorical commitment to concerned human rights groups without sacrificing any real flexibility to develop cutting-edge lethal autonomous weapons. After all, becoming the global leader in AI (including arms development) is [literally the official Chinese plan](https://www.nytimes.com/2017/07/20/business/china-artificial-intelligence.html); and Beijing [tends not](https://www.hrw.org/world-report/2019/country-chapters/china-and-tibet) to be too bothered with human rights groups when a strategic interest is at stake.

In other words, the three biggest military powers in the world have already:

Identified autonomous weapons as crucial to their military strategy;

Scaled up their resourcing and development of these weapons; and

Characterised the need for more advanced weapons in the context of other powers’ technological development.

We have to call this what it is: a serious [arms race](http://www.oxfordbibliographies.com/view/document/obo-9780199743292/obo-9780199743292-0002.xml).

A Reckoning for Elon and Friends

In my view, continued activism to block the development of lethal autonomous weapons is untenable in light of the evidence available. Elon Musk and the Future of Life’s well-intentioned [efforts](https://futureoflife.org/lethal-autonomous-weapons-pledge/) to forestall an arms race in military AI have failed. At this stage, Russia, China and the United States (not to mention [plenty of smaller states](https://www.timesofisrael.com/unmanned-subs-and-sniper-drones-israel-unveils-its-weapons-of-the-future/)) are significantly invested in lethal autonomous weapons, and view them as fundamental to the future of armed conflict. We can expect resourcing for military AI to continue to escalate, and for states to begin to deploy sophisticated drones in greater numbers.

It is important to note that this behaviour from large states is right in line with their rational incentives (rather than, for instance, [conforming to a bad science fiction plot](https://en.wikipedia.org/wiki/RoboCop#Plot)). It is not in any of the great powers’ interests to unilaterally support an AI weapons ban and de-escalate weapons development. If one were to do so, the possibility that another power might take the opportunity to develop an unassailable edge in weaponised AI is nigh on inevitable. Battles between autonomous drones [are likely to be decided](https://www.researchgate.net/publication/256017649_The_Seabots_are_Coming_Here_Should_They_Be_Treated_as_'Vessels') by which side has the more powerful software and autonomy. Machines that are able to ‘think’, react, manoeuvre and engage on their own accord will prevail over slower machines, let alone sluggish humans.

#### Emerging tech regulation fails and AFF can’t solve.

Greg E. Marchant 20, Regents Professor and Lincoln Professor of Emerging Technologies, Law & Ethics, and Faculty Director, Center for Law, Science & Innovation, Sandra Day O’Connor College of Law, Arizona State University, “Governing Emerging Technologies,” Vanderbilt Law Review, Vol. 73(6), 2020, p. 1863-1865

I. THE WICKED PROBLEM OF EMERGING TECHNOLOGY GOVERNANCE

Emerging technologies—such as synthetic biology, gene editing, nanotechnology, artificial intelligence, internet of things, 3D printing, drones, applied neurotechnologies, and blockchain and cryptocurrencies—present a common set of governance challenges.5 Perhaps most significant is the “pacing problem,” where the pace of technology development far outstrips the capability of regulatory systems to keep up.6 Powered by growing market demand and intense business competition, new technologies are being developed, deployed, and commercialized faster than ever before.7 At the same time, traditional governmental processes of legislation, regulation, and judicial review have been slowed by increasing bureaucratic requirements and the increasing politicization of technological disputes.8 The result of accelerating technology and decelerating regulatory oversight is a growing governance gap. Any new statutes or regulations affecting these new technologies are likely to be outdated before the ink dries. As technology governance expert David Rajeski has noted, “[i]f you think that any existing regulatory framework can keep pace with this rate of change, think again.”9 Facing such a bleak prospect, regulators often sensibly defer regulation, waiting for a more stable technology plateau that may or may not ever come.

A second regulatory challenge of many emerging technologies is that they present risks and concerns outside the scope of existing regulatory agency jurisdictions.10 Regulatory agencies, such as the U.S. Food and Drug Administration, are restricted to regulating the safety and efficacy of products. But many applications of emerging technologies raise broader ethical and social concerns relating to human enhancement, “playing God,” autonomy, dignity, fairness, equitable access, privacy, and longer-term impacts on society.11 These issues are largely outside the safety and efficacy scope of current agency jurisdictions and thus often escape any regulatory oversight.

Yet another challenge to the regulation of emerging technologies is their breadth of application. Technologies such as artificial intelligence, nanotechnology, and blockchain span the entire industry spectrum, as well as many nonindustrial activities and sectors. They are sometimes referred to as “enabling” or “platform” technologies that, like computers or the internet, have the potential to affect virtually every industry sector.12 There are thousands, if not tens or hundreds of thousands, of ways these core technologies are used, each with their own context of risks and benefits. These broad applications not only involve many different types of industries and businesses, but also affect many other types of stakeholders and nongovernmental organizations with particular interests in specific applications. The broad applications of these technologies also span many different regulatory agencies, each with their own organic statutes with different requirements, criteria, and goals. The end result of this multitude of applications, regulated parties, stakeholders, and regulators is tremendous regulatory diversity and complexity. Further complicating the regulatory challenge, emerging technologies are inherently international in application, creating the need for some type of international coordination.13

Finally, the unprecedented uncertainty about emerging technologies also impedes effective regulation.14 Because the technologies are so new and moving forward so quickly, there is enormous uncertainty about the trajectories, benefits, and risks of these technologies.15 Given these uncertainties, it is possible to paint unrealistically optimistic or pessimistic visions of the technology at issue, thus fostering public controversy, conflict, and unease.16

In summary, the governance of emerging technologies is characterized by complexity, diversity, and uncertainty. These same characteristics—complexity, diversity, and uncertainty—are the defining characteristics of a wicked problem.17 As a wicked problem, the governance of emerging technologies is unlikely to be solved by a single or simple solution. Traditional government regulation will not be sufficient, or many times even appropriate, for emerging technologies.18 Rather than traditional regulation—consisting of enforceable rules unilaterally imposed by a regulatory agency—emerging technologies will require a “governance” approach that expands the categories of responsible parties beyond government to include the private sector, nongovernmental organizations, and think tanks and also expands the relevant oversight mechanism beyond enforceable government regulations.19 Four alternative governance approaches for emerging technologies are discussed and evaluated in the next Part.

### Governance Fails---2NC

#### Future tech and militarized AI deployment is inevitable. Russia and China both view AI weapons as absolutely critical to their defense strategy and national security in the coming years. They’ve both already shot down efforts at developing international norms. There is zero rational incentive for either of them to stop developing the weapons. That’s Bartlett.

#### Zero shot at successful future technology arms control.

---LAWS = lethal autonomous weapons systems

Kyle Hiebert 22, Senior Program & Policy Analyst @ Enterprise Machine Intelligence and Learning Initiative, deputy editor of the Africa Conflict Monitor, “Are Lethal Autonomous Weapons Inevitable? It Appears So”, https://www.cigionline.org/articles/are-lethal-autonomous-weapons-inevitable-it-appears-so/

The Evolution of Automated Weapons

In December 2021, the Sixth Review Conference of the UN Convention on Certain Conventional Weapons (CCW), a 125-member intergovernmental forum that discusses nascent trends in armed conflict and munitions, was [unable to progress talks on new legal mechanisms](https://www.aljazeera.com/news/2021/12/18/un-talks-fail-to-open-negotiations-on-killer-robots) to rein in the development and use of LAWS. The failure continues eight years of unsuccessful efforts toward either regulation or an outright ban. “At the present rate of progress, the pace of technological development risks overtaking our deliberations,” warned Switzerland’s representative as the latest conference wrapped up in Geneva. No date is set for the forum’s next meeting.

Semi-autonomous weapons like self-guided bombs, military drones or Israel’s famed Iron Dome missile defence system have existed for decades. In each case, a human operator determines the target, but a machine completes the attack. On the other hand, LAWS — derided by critics as “slaughterbots” — empower AI to identify, select and kill targets absent human oversight and control. The Future of Life Institute, a think tank based in Cambridge, Massachusetts, that is focused on threats to humanity posed by AI and which organized the 2017 open letter to the United Nations, makes the distinction by saying, “In the case of autonomous weapons the decision over who lives and who dies is made solely by algorithms.”

Myriad concepts of LAWS for air, ground, sea and space use have long been speculated about. The difference now is that some models are ready to be field tested. At the US Army’s latest annual convention in Washington, DC, in October 2021, attendees were treated to prototypes of robotic combat dogs that could be built with rifles attached. Australian robotics maker GaardTech announced in November an agreement with the Australian army to demonstrate the Jaeger-C uncrewed vehicle some time this year. Described as a “mobile robotic mine” or “beetle tank,” the bulletproof autonomous four-wheeled combat unit can be outfitted with an armour-piercing large-calibre machine gun and sniper rifle and carry up to 100 pounds of explosives for use in suicide attacks.

In The Kill Chain: Defending America in the Future of High-Tech Warfare, Christian Bose, who served as top adviser to US Senator John McCain and staff director of the Senate Armed Services Committee, tells of how China intends to develop fully autonomous swarms of intelligent combat drones. Recent actions bear this out. In addition to China’s rapid expansion of its own domestic drone industry, last September two state-owned Chinese companies were linked to a Hong Kong firm that acquired a 75 percent stake in an Italian company that manufactures military-grade drones for the North Atlantic Treaty Organization. The Hong Kong firm reportedly paid 90 times the valuation of the Italian company to execute the takeover.

Meanwhile, a report prepared for the Pentagon’s Joint Artificial Intelligence Center in 2021 by CNA, a non-profit research and analysis institute located in Arlington, Virginia, describes how Chinese technology is enabling Russia’s military to integrate autonomous AI into dozens of its platforms. According to the report, this technology includes anthropomorphic robots capable of carrying multiple weapons and, possibly, of driving vehicles. Russian media quoted defence minister Sergei Shoigu confirming last May that Russia has commenced with the manufacturing of killer robots, saying, “What has emerged are not simply experimental, but robots that can be really shown in science-fiction films as they are capable of fighting on their own.”

Yet the world’s first true test case of a fully autonomous killer robot may have already taken place, in Libya in March 2020. According to a report submitted by a panel of experts to the UN Security Council in March 2021, drones produced by Turkish state-owned defence conglomerate STM were allegedly sent to track down a convoy of retreating forces loyal to renegade military general Khalifa Haftar after they abandoned a months-long siege of the capital, Tripoli.

Turkey’s intervention into Libya to prop up the Tripoli-based Government of National Accord, the war-torn country’s UN-recognized government faction, has opened up Libya’s vast deserts to be used as a giant test theatre for Turkey’s booming military drone industry. Turkish drones have recently altered the trajectory of civil wars in favour of Turkey’s government clients in both Libya and Ethiopia, and delivered a decisive victory for Azerbaijan during a violent flare-up with Armenia in late 2020 over the disputed territory of Nagorno-Karabakh. Over the past two years Ukraine has purchased dozens of Turkish drones in response to Russia’s military buildup on Ukraine’s eastern border.

The experts’ report claims Haftar’s forces “were hunted down and remotely engaged” by a Turkish Kargu-2 drone and other “loitering munitions” — those with the ability to hover over targets for hours — that “were programmed to attack targets without requiring data connectivity between the operator and the munition.” In other words, the machines were apparently capable of identifying, selecting and killing targets without communication from a human handler.

In many ways, the evolution of military drones is a canary in the coal mine, bridging eras between semi-autonomous and autonomous weapons and perhaps foreshadowing the way in which fully independent killer robots might proliferate in the future. In the 2000s, military drones were a very expensive and hard-to-operate weapons system possessed almost exclusively by the United States. Less than two decades later, they have become a low-cost, widely available technology being manufactured and exported worldwide — not only by China, Turkey and the United States, but by Iran, the United Arab Emirates and others, each motivated by not only geopolitical interests but the lucrative commercial stakes involved.

By some estimates, more than 100 countries now have active military drone programs — all springing up without any sort of international regulatory structure in place.

Autonomous weapons systems may be able to assess a target’s legitimacy and make decisions faster, and with more accuracy and objectivity than fallible human actors could.

More Just War — or Just More War?

Rapid advances in autonomous weapons technologies and an increasingly tense global order have brought added urgency to the debate over the merits and risks of their use.

Proponents include Robert Work, a former US deputy secretary of defence under the Obama and Trump administrations, who has argued the United States has a “moral imperative” to pursue autonomous weapons. The chief benefit of LAWS, Work and others say, is that their adoption would make warfare more humane by reducing civilian casualties and accidents through decreasing “target misidentification” that results in what the US Department of Defense labels “unintended engagements.”

Put plainly: Autonomous weapons systems may be able to assess a target’s legitimacy and make decisions faster, and with more accuracy and objectivity than fallible human actors could, either on a chaotic battlefield or through the pixelated screen of a remote-control centre thousands of miles away. The outcome would be a more efficient use of lethal force that limits collateral damage and saves innocent lives through a reduction in human error and increased precision of munitions use.

Machines also cannot feel stress, fatigue, vindictiveness or hate. If widely adopted, killer robots could, in theory, lessen the opportunistic sexual violence, looting and vengeful razing of property and farmland that often occurs in war — especially in ethnically driven conflicts. These atrocities tend to create deep-seated traumas and smouldering intergenerational resentments that linger well after the shooting stops, destabilizing societies over the long term and inviting more conflict in the future.

But critics and prohibition advocates feel differently. They say the final decision over the use of lethal force should always remain in the hands of a human actor who can then be held accountable for that decision. Led by the Campaign to Stop Killer Robots, which launched in 2013 and is now comprised of more than 180 member organizations across 66 countries and is endorsed by over two dozen Nobel Peace laureates, the movement is calling for a pre-emptive, permanent international treaty banning the development, production and use of fully autonomous weaponry.

Dozens of countries support a pre-emptive ban as well. This briefly included Canada, when the mandate letter issued by Prime Minister Justin Trudeau in 2019 to then foreign affairs minister François-Philippe Champagne requested he assist international efforts to achieve prohibition. That directive has since disappeared from the mandates given to Champagne’s successors, Marc Garneau and now Mélanie Joly.

For those calling for a ban, the risks of LAWS outweigh their supposed benefits by ultimately incentivizing war through eliminating some of its human cost. The unavoidable casualties that result from armed conflict, and the political blowback that can produce, has always moderated the willingness of governments to participate in wars. If this deterrent is minimalized by non-human combatants over time, it may render military action more appealing for leaders — especially for unpopular ones, given the useful distraction that foreign adventurism can sometimes inject into domestic politics.

Other risks are that autonomous weapons technology could fall into the hands of insurgent groups and terrorists. At the peak of its so-called caliphate in Iraq and Syria, the Islamic State was launching drone strikes daily. Despotic regimes may impulsively unleash autonomous weapons on their own populations to quell a civilian uprising. Killer robots’ neural networks could also be susceptible to being hacked by an adversary and turned against their owners.

Yet, just as the debate intensifies, a realistic assessment of the state of the killer robots being developed confirms what the Swiss ambassador to the CCW feared — technological progress is far outpacing deliberations over containment. But even if it weren’t, amid a splintering international order, plenty of nation-states are readily violating humanitarian laws and treaties anyway, while others are seeking new ways to gain a strategic edge in an increasingly hostile, multipolar geopolitical environment.

National Interests Undermine Collective Action

While Turkey may have been the first to allegedly deploy live killer robots, their wide-ranging use is likely to be driven by Beijing, Moscow and Washington. Chinese President Xi Jinping and Russian President Vladimir Putin both openly loathe the Western-oriented human rights doctrines that underpin calls to ban killer robots. And despite America’s domestic division and dysfunction, its political class still has a bipartisan desire for the United States to remain the world’s global military hegemon.

With a GDP just slightly larger than that of the state of Florida, Russia’s inability to compete in a great power competition economically renders it reliant on exploiting asymmetric power imbalances wherever possible, including through furthering its [AI capability for military and espionage purposes](https://www.aljazeera.com/news/2021/11/30/uk-spy-chief-warns-china-russia-racing-to-master-ai). Autonomous weapons could be well-suited to secure the resource-rich but inhospitable terrain of the Arctic, a region where the Kremlin is actively trying to assert Russia’s primacy. The country is also the [world’s second-largest arms exporter](https://crsreports.congress.gov/product/pdf/R/R46937) behind the United States, accounting for one-fifth of global arms sales since 2016 — a key source of government revenue and foreign influence. Its recent [anti-satellite weapons test](https://www.bbc.com/news/science-environment-59299101) underscores the Kremlin’s willingness to explore controversial weapons technologies too, even in the face of international condemnation.

President Xi Jinping, meanwhile, has pinned [China’s ambitions of remaking the global order](https://www.theatlantic.com/international/archive/2021/12/china-wants-rule-world-controlling-rules/620890/) in favour of autocracies on the domination of key emerging technologies. On track by some estimates to becoming the [world’s biggest economy by 2028](https://www.cnbc.com/2021/02/01/new-chart-shows-china-gdp-could-overtake-us-sooner-as-covid-took-its-toll.html), China is pouring spectacular amounts of money and resources into everything from AI, nanotechnology and quantum computing to genetics and synthetic biology, and has a [stranglehold on the market for rare earth metals](https://www.scmp.com/news/china/diplomacy/article/3130990/chinas-dominance-rare-earths-supply-growing-concern-west). After tendering his resignation in September out of frustration, the Pentagon’s ex-software chief, Nicolas Chaillan, declared in an [interview](https://www.ft.com/content/f939db9a-40af-4bd1-b67d-10492535f8e0) with the Financial Times a month later that the United States will have “no competing fighting chance against China in 15 to 20 years.”

China is also notably keen on state-sponsored intellectual property theft to accelerate its innovation cycles. The more that others demonstrably advance on killer robots, the more that China will attempt to steal that technology — and inevitably succeed to a degree. This could create a self-reinforcing feedback loop that hastens the killer robot arms race among military powers.

This race of course includes the United States. The New York Times [reported](https://www.nytimes.com/2005/02/16/technology/new-model-army-soldierrolls-closer-to-battle.html) back in 2005 that the Pentagon was mulling ways to integrate killer robots into the US military. And much to the dismay of progressives, even Democrat-led administrations exhibit no signs whatsoever of winding down military spending any time soon — the Biden administration released a decidedly [hawkish Global Posture Review](https://theintercept.com/2021/12/02/biden-military-deployment-global-footprint/) at the end of November just as a massive [US$770 billion defence bill](https://www.reuters.com/world/us/majority-us-senate-backs-770-billion-defense-bill-2021-12-15/) sailed through Congress. The US military has already [begun training drills to fight enemy robots](https://www.forbes.com/sites/davidhambling/2021/10/22/us-army-carries-out-first-exercise-fighting-enemy-robots/?sh=21c0313556c0), while deploying autonomous weapons systems could uphold its capacities for foreign intervention and power projection overseas, now that [nation-building projects have fallen out of fashion](https://www.bbc.com/news/world-asia-57489095).

Most important of all, mass production of killer robots could offset America’s flagging enlistment numbers. The US military requires 150,000 new recruits every year to maintain its desired strength and capability. And yet Pentagon data from 2017 revealed that more than 24 million of the then 34 million Americans between the ages of 17 and 24 — over 70 percent — would have been [disqualified from serving in the military](https://www.heritage.org/defense/report/the-looming-national-security-crisis-young-americans-unable-serve-the-military) if they applied, due to obesity, mental health issues, inadequate education or a criminal record. Michèle Flournoy, a career defence official who served in senior roles in both the Clinton and the Obama administrations, [told](https://www.bbc.com/news/world-59755100) the BBC in December that “one of the ways to gain some quantitative mass back and to complicate adversaries’ defence planning or attack planning is to pair human beings and machines.”

Other, smaller players are nurturing an affinity for LAWS too. Israel assassinated Iran’s top nuclear scientist, Mohsen Fakhrizadeh, outside of Tehran in November 2020 using a remote-controlled, [AI-assisted machine gun](https://www.nytimes.com/2021/09/18/world/middleeast/iran-nuclear-fakhrizadeh-assassination-israel.html) mounted inside a parked car, and is [devising more remote ways to strike back against Hamas](https://www.businesslive.co.za/bd/opinion/2021-05-20-remote-warfare-will-not-end-age-old-israel-palestine-conflict/) in the Gaza Strip. Since 2015, South Korea has placed nearly fully [autonomous sentry guns](https://www.bbc.com/future/article/20150715-killer-robots-the-soldiers-that-never-sleep) on the edge of its demilitarized zone with North Korea, selling the domestically built robot turrets to customers throughout the Middle East. Speaking at a defence expo in 2018, Prime Minister Narendra Modi of India — the world’s second-largest arms buyer — [told](https://timesofindia.indiatimes.com/india/india-moves-to-develop-ai-based-military-systems/articleshow/64250232.cms) the audience: “New and emerging technologies like AI and Robotics will perhaps be the most important determinants of defensive and offensive capabilities for any defence force in the future.”

#### Pandora’s box is already open.

Elsa B. Kania 18, Senior Fellow with the Technology and National Security Program at the Center for a New American Security, “The Pursuit of AI Is More Than an Arms Race”, https://www.defenseone.com/ideas/2018/04/pursuit-ai-more-arms-race/147579/

In many respects, this particular Pandora’s box is already open, so calls for absolute bans may prove too little, too late. Increasingly, states and even non-state actors are using commercial, off-the-shelf technologies to enable new military capabilities; ISIS [uses](https://www.defensenews.com/digital-show-dailies/modern-day-marine/2017/09/21/in-drones-isis-has-its-own-tactical-air-force/) cheap commercial drones to gather intelligence and provide close air support. The rapid advances in AI technologies continue, and [new products](https://spectrum.ieee.org/automaton/robotics/drones/skydio-r1-drone) and available [algorithms](https://www.digitaltrends.com/cool-tech/dronet-autonomous-naviagation/) can enable the autonomy and thus scalability of these capabilities.

It seems unlikely that any major military would be willing to tie its hands or constrain its pursuit of technologies and capabilities that are so strategic and evolving so rapidly. Beyond the lack of trust, attempts to enable verification of compliance with any future agreements would also be challenging at best.

### AT: AI Impact---1NC

#### We’ll adapt to AI.

Amy Zhang 21, PhD candidate at Cornell studying Operations Research and Research Assistant at Cornell Tech, “DLI Debate: Does AI Pose an Existential Threat to Humanity?,” Cornell Tech, 5/16/21, https://www.dli.tech.cornell.edu/post/dli-debate-does-ai-pose-an-existential-threat-to-humanity

First of all, AI as a tool is not smart. It needs you to tell it exactly 1. what is the specific goal to achieve, 2. a success metric that is meticulously defined, and 3. information to use as a basis that you prepare and feed in. Then to what extent can you say that AI does bad things? For example, if a company is allowed to set maximizing the time spent in an app as its ultimate goal, is it the algorithm’s fault for achieving it? Or if we task a model to mimic our speech by showing it all of Twitter to use as example, and it produces language that mirrors some of the toxicity, can we call the model racist? What it really comes down to is in how these systems are designed, and whether it is done with the level of awareness and sensitivity required in really thinking through these human aspects.

Indeed, an important part of this relies on checks and balances put in by the government and other rule-setting agencies. And it is true that it can be frustrating to feel like they're not measuring up, which then could lead to a pessimistic outlook that they never will and this will never work. But there are two important points to consider here. Number one, there will be a lag in legislative actions with any technological advances almost by definition. A nascent technology first needs time to emerge, to grow, and to become widespread enough that it matters to the general public. Then, only once it gets past the point where people are just immersed in the excitement and the benefits - because it does provide real benefits - do problems become apparent and gain attraction. That’s when the agencies can go in and try to understand them, which in itself is not easy. Then a second point to consider is that this is creating a new context, and any change in contexts is very difficult to grapple with for the legislative. Keep in mind that even the processes that seem very established today, have gotten here only after being studied and refined over a long period of time. One should expect this case to be no different. So yes, it will take time, but that does not mean that we will never get there.

In addition, it is very important to bear in mind that society itself is adaptive. Humans are adaptive. This is not the first time that technological breakthroughs have become a disruptive force in human society. Yes, it's true that such disruptions bring out previously dormant conflicts, in a way that can feel like a crisis. But it is also a chance for us to re-examine and to make changes. We have done this in history, and we have seen through history that it's by facing up to these challenges that societies progress. We have seen this through many revolutions, and this will be another one. One is right to argue that it will be all on a much larger scale, but that exponential rate of change is part of the nature of progress, and part of what societies have potential to adapt to. So if anything, the concern with AI is that it's still unable to change itself. This means that unless we do something about it, past mistakes could be frozen in place and propagated, and that could be the actual risk to our progress as societies. That's why, again, the burden of responsibility is on us humans.

### AT: AI Impact---2NC

#### AI will never develop consciousness.

Meg Young 21, Postdoctoral Fellow at Cornell Tech's Digital Life Initiative, “DLI Debate: Does AI Pose an Existential Threat to Humanity?,” Cornell Tech, 5/16/21, https://www.dli.tech.cornell.edu/post/dli-debate-does-ai-pose-an-existential-threat-to-humanity

Returning to what Salome has asserted, let's pause for a moment to take in the argument that AI poses an existential risk to humanity. An existential threat is one that will destroy life on earth---to literally wipe it out. This argument warns that AI will become super intelligent, overpower its human creators to pursue its own unimaginable ends, and to menace life as it takes over the planet. But what would need to be true for that to be possible? AI would need to be intelligent in a meaningful sense. Meaning it can reason, form its own goals, and pursue those goals across contexts. In other words, it would need to be able to think for itself. The philosopher John Searle refers to this idea that AI will ever be able to do that as quote, “an enormous philosophical confusion about the correct interpretation of AI technology.” He points out that consciousness is essential to intelligence. And that without it, even an advanced system like IBM Deep Blue is not playing chess in the same way a chess master like Garry Kasparov is. Instead, it is just performing a computation. We know that AI is not conscious and not at risk of becoming so, because consciousness is an enduring mystery in philosophy, neuroscience, and psychology. Basic science is not able to characterize consciousness and where it comes from in vivo, so why do we think that computer scientists will be able to recreate it in silico?

Proponents of super-intelligent AI argue that the technology is already on course to emulate human intelligence. They say that because computational power is becoming cheaper and faster, eventually machine learning systems like neural nets will function akin to a human brain and exceed it in unpredictable ways. But this argument mis-apprehends what intelligence is. It is much more than the ability to solve problems. A driverless car, while much more computationally intensive, is no closer to being sentient than a calculator is; both are machines purpose-built to solve problems, and both are equally unlikely to plot to kill humankind. Instead, increases in computational power are merely bringing us a better and more convincing illusion that AI is super intelligent. To people decades ago, Siri and Alexa would have seemed akin to Rosie, the humanoid robot on The Jetsons. But knowing Siri and Alexa as we do today, we know they cannot be called “intelligent” in a meaningful sense at all. So yes, we are on course to get better simulations of intelligence, but they'll have none of the underlying capability necessary for consciousness itself--and as such, they pose no risk of overthrowing humanity.

#### No runaway AI

Edward Moore Geist 15, MacArthur Nuclear Security Fellow at Stanford University's Center for International Security and Cooperation, Former Stanton Nuclear Security Fellow at the RAND Corporation, Doctorate in History from the University of North Carolina, “Is Artificial Intelligence Really An Existential Threat to Humanity?”, Bulletin of the Atomic Scientists, 8-9, https://thebulletin.org/2015/08/is-artificial-intelligence-really-an-existential-threat-to-humanity/

Superintelligence: Paths, Dangers, Strategies is an astonishing book with an alarming thesis: Intelligent machines are “quite possibly the most important and most daunting challenge humanity has ever faced.” In it, Oxford University philosopher Nick Bostrom, who has built his reputation on the study of “existential risk,” argues forcefully that artificial intelligence might be the most apocalyptic technology of all. With intellectual powers beyond human comprehension, he prognosticates, self-improving artificial intelligences could effortlessly enslave or destroy Homo sapiens if they so wished. While he expresses skepticism that such machines can be controlled, Bostrom claims that if we program the right “human-friendly” values into them, they will continue to uphold these virtues, no matter how powerful the machines become.

These views have found an eager audience. In August 2014, PayPal cofounder and electric car magnate Elon Musk tweeted “Worth reading Superintelligence by Bostrom. We need to be super careful with AI. Potentially more dangerous than nukes.” Bill Gates declared, “I agree with Elon Musk and some others on this and don’t understand why some people are not concerned.” More ominously, legendary astrophysicist Stephen Hawking concurred: “I think the development of full artificial intelligence could spell the end of the human race.” Proving his concern went beyond mere rhetoric, Musk donated $10 million to the Future of Life Institute “to support research aimed at keeping AI beneficial for humanity.”

Superintelligence is propounding a solution that will not work to a problem that probably does not exist, but Bostrom and Musk are right that now is the time to take the ethical and policy implications of artificial intelligence seriously. The extraordinary claim that machines can become so intelligent as to gain demonic powers requires extraordinary evidence, particularly since artificial intelligence (AI) researchers have struggled to create machines that show much evidence of intelligence at all. While these investigators’ ultimate goals have varied since the emergence of the discipline in the mid-1950s, the fundamental aim of AI has always been to create machines that demonstrate intelligent behavior, whether to better understand human cognition or to solve practical problems. Some AI researchers even tried to create the self-improving reasoning machines Bostrom fears. Through decades of bitter experience, however, they learned not only that creating intelligence is more difficult than they initially expected, but also that it grows increasingly harder the smarter one tries to become. Bostrom’s concept of “superintelligence,” which he defines as “any intellect that greatly exceeds the cognitive performance of humans in virtually all domains of interest,” builds upon similar discredited assumptions about the nature of thought that the pioneers of AI held decades ago. A summary of Bostrom’s arguments, contextualized in the history of artificial intelligence, demonstrates how this is so.

In the 1950s, the founders of the field of artificial intelligence assumed that the discovery of a few fundamental insights would make machines smarter than people within a few decades. By the 1980s, however, they discovered fundamental limitations that show that there will always be diminishing returns to additional processing power and data. Although these technical hurdles pose no barrier to the creation of human-level AI, they will likely forestall the sudden emergence of an unstoppable “superintelligence.”

The risks of self-improving intelligent machines are grossly exaggerated and ought not serve as a distraction from the existential risks we already face, especially given that the limited AI technology we already have is poised to make threats like those posed by nuclear weapons even more pressing than they currently are. Disturbingly, little or no technical progress beyond that demonstrated by self-driving cars is necessary for artificial intelligence to have potentially devastating, cascading economic, strategic, and political effects. While policymakers ought not lose sleep over the technically implausible menace of “superintelligence,” they have every reason to be worried about emerging AI applications such as the Defense Advanced Research Projects Agency’s submarine-hunting drones, which threaten to upend longstanding geostrategic assumptions in the near future. Unfortunately, Superintelligence offers little insight into how to confront these pressing challenges.

#### It's super far off and won’t be threatening

Dr. Oren Etzioni 16, Professor of Computer Science at the University of Washington, CEO of the Allen Institute for Artificial Intelligence, Ph.D. from Carnegie Mellon University and BA from Harvard University, “No, the Experts Don’t Think Superintelligent AI is a Threat to Humanity”, MIT Technology Review, 9-20, https://www.technologyreview.com/s/602410/no-the-experts-dont-think-superintelligent-ai-is-a-threat-to-humanity/

If you believe everything you read, you are probably quite worried about the prospect of a superintelligent, killer AI. The Guardian, a British newspaper, warned recently that “we’re like children playing with a bomb,” and a recent Newsweek headline reads, “Artificial Intelligence Is Coming, and It Could Wipe Us Out.”

Numerous such headlines, fueled by comments from the likes of Elon Musk and Stephen Hawking, are strongly influenced by the work of one man: professor Nick Bostrom, author of the philosophical treatise Superintelligence: Paths, Dangers, and Strategies.

Bostrom is an Oxford philosopher, but quantitative assessment of risks is the province of actuarial science. He may be dubbed the world’s first prominent “actuarial philosopher,” though the term seems an oxymoron given that philosophy is an arena for conceptual arguments, and risk assessment is a data-driven statistical exercise.

So what do the data say? Bostrom aggregates the results of four different surveys of groups such as participants in a conference called “Philosophy and Theory of AI,” held in 2011 in Thessaloniki, Greece, and members of the Greek Association for Artificial Intelligence (he does not provide response rates or the phrasing of questions, and he does not account for the reliance on data collected in Greece).

His findings are presented as probabilities that human-level AI will be attained by a certain time:

By 2022: 10 percent.

By 2040: 50 percent.

By 2075: 90 percent.

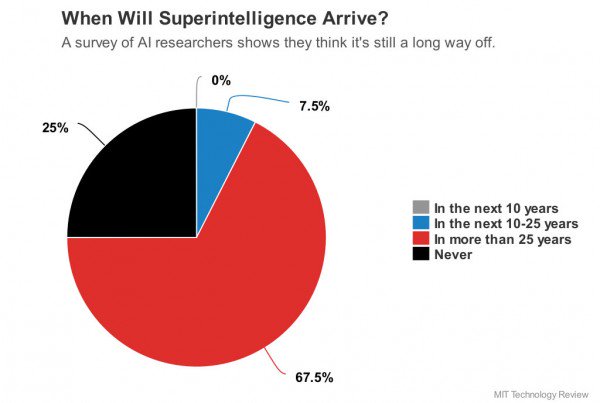
This aggregate of four surveys is the main source of data on the advent of human-level intelligence in over 300 pages of philosophical arguments, fables, and metaphors.

To get a more accurate assessment of the opinion of leading researchers in the field, I turned to the Fellows of the American Association for Artificial Intelligence, a group of researchers who are recognized as having made significant, sustained contributions to the field.

In early March 2016, AAAI sent out an anonymous survey on my behalf, posing the following question to 193 fellows:

“In his book, Nick Bostrom has defined Superintelligence as ‘an intellect that is much smarter than the best human brains in practically every field, including scientific creativity, general wisdom and social skills.’ When do you think we will achieve Superintelligence?”

Over the next week or so, 80 fellows responded (a 41 percent response rate), and their responses are summarized below:



In essence, according to 92.5 percent of the respondents, superintelligence is beyond the foreseeable horizon. This interpretation is also supported by written comments shared by the fellows.

Even though the survey was anonymous, 44 fellows chose to identify themselves, including Geoff Hinton (deep-learning luminary), Ed Feigenbaum (Stanford, Turing Award winner), Rodney Brooks (leading roboticist), and Peter Norvig (Google).

The respondents also shared several comments, including the following:

“Way, way, way more than 25 years. Centuries most likely. But not never.”

“We’re competing with millions of years’ evolution of the human brain. We can write single-purpose programs that can compete with humans, and sometimes excel, but the world is not neatly compartmentalized into single-problem questions.”

“Nick Bostrom is a professional scare monger. His Institute’s role is to find existential threats to humanity. He sees them everywhere. I am tempted to refer to him as the ‘Donald Trump’ of AI.”

Surveys do, of course, have limited scientific value. They are notoriously sensitive to question phrasing, selection of respondents, etc. However, it is the one source of data that Bostrom himself turned to.

Another methodology would be to extrapolate from the current state of AI to the future. However, this is difficult because we do not have a quantitative measurement of the current state of human-level intelligence. We have achieved superintelligence in board games like chess and Go (see “Google’s AI Masters Go a Decade Earlier than Expected”), and yet our programs failed to score above 60 percent on eighth grade science tests, as the Allen Institute’s research has shown (see “The Best AI Program Still Flunks an Eighth Grade Science Test”), or above 48 percent in disambiguating simple sentences (see “Tougher Turing Test Exposes Chatbots’ Stupidity”).

There are many valid concerns about AI, from its impact on jobs to its uses in autonomous weapons systems and even to the potential risk of superintelligence. However, predictions that superintelligence is on the foreseeable horizon are not supported by the available data. Moreover, doom-and-gloom predictions often fail to consider the potential benefits of AI in preventing medical errors, reducing car accidents, and more.

## Military Innovation DA

### 1NC---DA

#### Transatlantic AI innovation is surging now.

Edward Hunter Christie 22, Senior Research Fellow at the Finnish Institute of International Affairs, “Defence Cooperation in Artificial Intelligence: Bridging the Transatlantic Gap for a Stronger Europe,” European View, vol. 21, no. 1, SAGE Publications Ltd, 04/01/2022, pp. 13–21

Investment challenges

As noted in the introduction, there is a significant gap between overall US and European defence spending levels. This general pattern also holds for defence research and development spending. In 2020, EU spending in this area amounted to €8 billion (EDA 2021). For the US, with caveats as to comparability, expenditure for ‘research, development, test and evaluation’ totalled approximately €90 billion3 in the 2021 fiscal year (from October 2020 to September 2021), or about 10 times more.

Investment challenges go beyond issues of scale. The US also has greater experience in the setting up and operation of structures to promote both military and dual-use innovation. While the best-known institution is the Defense Advanced Research Projects Agency, other US government structures are also relevant in discussions on fostering innovation in AI for military applications. A much-discussed example is In-Q-Tel, which was originally set up as the state venture-capital arm of the Central Intelligence Agency. To illustrate the influence of the In-Q-Tel example, one may note that both its current Chief Executive Officer, Chris Darby, and one of its former Chief Executive Officers, Gilman Louie, served among the 15 commissioners of the National Security Commission on Artificial Intelligence.4 This was a temporarily created expert commission mandated by the US Congress to provide policy recommendations for a whole-of-government and whole-of-society approach for US AI policy.5

With In-Q-Tel, the idea is to learn from private-sector practices in the area of venture-capital investment and repurpose them for state needs and more patient time horizons. A supported company should pursue product development strategies aimed at serving both civilian markets and government needs. In this way, rather than effectively taking over a commercial company and limiting its growth potential to future government contracts alone, the government body encourages an intermediate trajectory made up of mixed revenue streams, in the hope that this will generate greater returns to scale and higher efficiency thanks to the disciplining effect of private-sector competition. Conversely, the advantage of this approach as compared to not intervening at all is that the commercial company will integrate current and likely future government needs into its product and business-development strategy, rather than ignoring them and finding itself, at a later date, unable to supply the government sector according to the latter’s requirements.

A related issue which falls between what can be achieved with new investment instruments and new protections that can be assured through the screening of foreign direct investment is the provision of investment from trusted private investors to the technology sector. Certain technology companies that are not part of the traditional defence industry may be developing dual-use products that are of potential interest to the defence sector while having limited awareness of national security concerns. This may make them vulnerable targets for both licit and illicit attempts to acquire their technologies on the part of foreign state actors. At the same time, their business development needs may lead them to seek investment from any potential source, thus exposing them to potential risks. To respond to this challenge, the US Department of Defense has launched a scheme called the Trusted Capital Marketplace (US Department of Defense 2021a).

Building on these considerations, the NATO Innovation Unit has developed two new instruments for Allied use which were announced to the public in October 2021 (NATO 2021a; 2021b). Both instruments aim to foster technological innovation with a deliberate focus on dual-use applications and on enterprises with mixed (potential) revenue streams. The first instrument is the Defence Innovation Accelerator for the North Atlantic (DIANA), which is a NATO instrument, that is, it involves the participation of all 30 NATO Allies. The second instrument is the NATO Innovation Fund, which in NATO terminology is a ‘multinational’ instrument, namely one that Allies freely opt into.

DIANA will aim to accelerate the adoption of dual-use technological solutions through several interlocking components.6 First, it will develop a network of national organisations, in particular test centres and innovation accelerators. Second, it will competitively select private-sector innovators and allow them to use national organisations in the network to interface with military end users and military capability-development specialists. Third, it is envisaged that DIANA will provide mentorship and education services for private innovators to familiarise them with the opportunities and responsibilities inherent to the defence and security sector. Fourth, DIANA will develop a database of trusted financial investors from Allied nations and support matchmaking between investors and innovators. Fifth and finally, DIANA will also provide expert advice on defence and security innovation to all relevant stakeholders, including private-sector and academic entities.

Regarding the NATO Innovation Fund, 17 Allies had opted into the Fund as of the date of its announcement in October 2021. The participating Allies will inject up to €1 billion into Allied innovation ecosystems over the next 15 years. The Fund aims to attract additional private investments due to the de-risking effect, both financial and technological, thanks to state co-funding and diligence and screening efforts. The funds are intended to be used for long-term support of ‘deep tech’ innovative companies, that is, for advanced research into AI, quantum and related technologies that may have both military and civilian applications. Due diligence and security screening practices will aim to ensure that both private investors and fund recipients are trusted entities.

#### The AFF saps funding for AI research AND eliminates beneficial dual-use technology.

**Castro & McLaughlin 19** --- \*Vice President, ITIF, and Director, Center for Data Innovation. \*\*Research Analyst Information Technology and Innovation Foundation

Daniel & Michael, 2-4-2019, "Ten Ways the Precautionary Principle Undermines Progress in Artificial Intelligence," ITIF, https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence/

Many groups have started movements to ban lethal autonomous weapons—autonomous robotics systems that can independently identify and engage targets based on programmed constraints—due to fears that they will lead to armed conflict on a scale greater and faster than ever before. For example, 116 founders of mostly small robotics and AI companies, including Elon Musk, signed a letter to the United Nations (UN) in 2017 that urges the body to ban lethal autonomous weapons.36 In 2018, the UN Secretary-General António Guterres stated that “machines that have the power and the discretion to take human lives are politically unacceptable, are morally repugnant, and should be banned by international law.”37 Also in 2018, members of the European Parliament adopted a resolution asking member states and the European Council for “the start of international negotiations on a legally binding instrument prohibiting lethal autonomous weapons systems.”38 If policymakers enacted such a ban, it would slow research into AI, as historically, at least in the United States, defense agencies have been a source of significant funding for technology advancement, such as the Internet. And much of the research to support autonomous weapons would yield dual-use technology that could be used for commercial purposes. For example, a fully autonomous tank will likely rely on large portions of the same algorithms and data used to develop a fully autonomous military transport vehicle.39 These same algorithms would be relevant to developing autonomous vehicles for civilian use.

**Continued AI innovation enables us to out-compete China.**

**Wheeler**, visiting fellow in Governance Studies at The Brookings Institution, Chairman of the Federal Communication Commission (FCC) from 2013 to 2017, **‘20**

(Tom, “Digital Competition With China Starts With Competition At Home,” <https://www.brookings.edu/wp-content/uploads/2020/04/FP_20200427_digital_competition_china_wheeler_v3.pdf>)

The United States and China are engaged in a **technology-based conflict** to **determine** **21st-century** international economic **leadership**. China’s approach is to identify and support the research and development efforts of a handful of “**national champion**” companies. The **dominant tech companies** of the U.S. **are de facto embracing this** Chinese policy in their effort to maintain domestic marketplace control. Rather than embracing a China-like consecration of a select few companies, America’s digital competition with China **should begin with meaningful competition** at home and the allAmerican reality that competition drives innovation.

America’s dominant tech companies have seized upon the competition with China as a rationale for why their behavior should not be subject to regulatory oversight that would, among other things, promote competition. “China doesn’t regulate its companies” has become a go-to policy response. When coupled with “of course, we support regulation, but it must be responsible regulation,” it throws up a smokescreen that allows the dominant tech companies to make the rules governing their marketplace behavior.

At the heart of digital competition — both at home and abroad — is the capital asset of the 21st century: **data**. Initiatives such as **machine learning** and **artificial intelligence** are data-dependent, requiring a large data input to enable algorithms to reach a conclusion. China’s immense population of almost 1.5 billion gives it an advantage in this regard. By definition, a population that approaches five times the size of the U.S. population produces more data. The previously “backward” nature of the Chinese economy has resulted in another Chinese data advantage: New smartphone-based apps, created in place of the digital integration that China previously lacked, produce a richer collection of data. This bulk and richness of Chinese data creates **an inherent digital advantage** when compared to the United States.

If the United States **will never out-bulk China** in the quantity and quality of data**, it must out-innovate China**. Here, the United States **has an advantage**, should it choose to take it. **The centralized control** of the Chinese digital economy **is an anti-entrepreneurial force**. In contrast, **innovation** is the hallmark of a free and open market. But the domestic market must, indeed, **be free**, open, and competitive.

Currently, the American digital marketplace **is not competitive**. A handful of companies **command** the marketplace by hoarding the data asset others need to compete. As innovative as America’s tech giants may be, they represent a **bottleneck** **that starves independent innovators** **of the mother’s milk of digital competition**. If America is to **out-innovate China**, then American **innovators** need access to the **essential data asset** **required for that innovation**.

The nation’s response to Chinese competition must not be the adoption of China-like national **champions**, nor the “China doesn’t regulate its companies that way” smokescreen. American public policy should embrace the all-American concept of **competition-driven innovation**. This begins with **breaking the bottleneck** that withholds data from its **competitive application**. This **does not necessarily mean** **breaking up** the dominant companies, but it does mean breaking open **their mercenary lock** on the **assets essential for competition-driven innovation**.

**Maintaining our innovative lead solves nuclear war**

**Kroenig and Gopalaswamy 18** – Associate Professor of Government and Foreign Service at Georgetown University and Deputy Director for Strategy in the Scowcroft Center for Strategy and Security at the Atlantic Council; Director of the South Asia Center at the Atlantic Council

Matthew Kroenig and Bharath Gopalaswamy, "Will disruptive technology cause nuclear war?," Bulletin of the Atomic Scientists, 11-12-2018, <https://thebulletin.org/2018/11/will-disruptive-technology-cause-nuclear-war/>

Rather, we should think **more broadly** about how **new technology** might affect global politics, and, for this, it is helpful to turn to scholarly international relations theory. The dominant theory of the causes of war in the academy is the “bargaining model of war.” This theory identifies **rapid shifts** in the balance of power as a **primary cause of conflict**.

International politics often presents states with conflicts that they can settle through **peaceful bargaining**, but when bargaining **breaks down, war results**. **Shifts** in the balance of power are **problematic** because they **undermine effective bargaining**. After all, why agree to a deal today if your bargaining position will be stronger tomorrow? And, a clear understanding of the **military balance of power** can contribute to **peace**. (Why start a war you are likely to lose?) But shifts in the balance of power **muddy understandings** of which states have the advantage.

You may see where this is going. New technologies threaten to create potentially **destabilizing shifts** in the balance of power.

For decades, stability in Europe and Asia has been supported by US military power. In recent years, however, the balance of power in Asia has begun to shift, as China has increased its military capabilities. Already, Beijing has become **more assertive** in the region, claiming contested territory in the South China Sea. And the results of Russia’s **military modernization** have been on **full display** in its ongoing intervention in Ukraine.

Moreover, China **may have the lead** over the United States in **emerging technologies** that **could be decisive** for the future of military acquisitions and warfare, including 3D **printing**, **hypersonic** missiles, **quantum** computing, **5G** wireless connectivity, and **a**rtificial **i**ntelligence (AI). And Russian President Vladimir Putin is building new unmanned vehicles while ominously declaring, “Whoever leads in AI will rule the world.”

If China or Russia are able to **incorporate new technologies** into their militaries **before the United States**, then this could lead to the kind of **rapid shift** in the balance of power that **often causes war.**

If Beijing believes emerging technologies provide it with a **newfound, local military advantage** over the United States, for example, it may be **more willing** than previously to **initiate conflict over Taiwan**. And if Putin thinks new tech has **strengthened his hand**, he may be more tempted to launch a Ukraine-style **invasion of a NATO member**.

Either scenario could bring these **nuclear powers into direct conflict** with the United States, and once nuclear armed states are at war, there is an **inherent risk of nuclear conflict** through limited nuclear war strategies, nuclear brinkmanship, or simple accident or inadvertent escalation.

This framing of the problem leads to a different set of policy implications. The concern is not simply technologies that threaten to undermine nuclear second-strike capabilities directly, but, rather, any technologies that can result in a meaningful shift in the broader balance of power. And the solution is not to preserve second-strike capabilities, but to **preserve prevailing power balances** more broadly.

When it comes to new technology, this means that the United States should seek to **maintain an innovation edge**. Washington should also work with other states, including its nuclear-armed rivals, to develop a new set of arms control and nonproliferation agreements and export controls to deny these newer and potentially destabilizing technologies to potentially hostile states.

These are no easy tasks, but the consequences of Washington **losing the race** for technological superiority to its autocratic challengers just might mean **nuclear Armageddon**.

### 2NC---Link

#### Forcing all NATO countries to adhere to uniform ethical guidelines hamstrings innovation and the competitiveness of the DIB.

**Castro & McLaughlin 19** --- \*Vice President, ITIF, and Director, Center for Data Innovation. \*\*Research Analyst Information Technology and Innovation Foundation

Daniel & Michael, 2-4-2019, "Ten Ways the Precautionary Principle Undermines Progress in Artificial Intelligence," ITIF, https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence/

1. Slower and More Expensive AI Development

Policies based on the precautionary principle both slow and make the development of AI more expensive. For example, if all fifty U.S. states had laws such as New York’s, which requires autonomous vehicle firms to perform road testing under the paid supervision of police, testing such vehicles would be more expensive. Moreover, proposals to require even non-medical algorithms to undergo pre-market trials would hurt the development of AI because such trials are time-consuming and expensive. Such proposals may also make AI systems that use machine learning, and thus may change frequently and need more testing, significantly less viable because such systems could constantly need to go through a new approval process.96 Finally, policies that increase the cost of developing AI would likely discourage innovation in AI by creating a substantial barrier to entry for startups that lack sufficient funding to cover the cost of proving their AI system is safe. For example, the GDPR has dampened investment in European technology startups and led to a 30 percent decrease in the market share of small online advertising firms that lack the resources to easily comply with the regulation.97

Restrictions on one AI technology can also limit ways to develop another AI technology. For example, researchers in Germany are using drones hovering hundreds of meters above highways to record the movements of vehicles. This data can help develop simulations to test autonomous vehicles; such simulations are important tools for improving the safety of autonomous vehicles because otherwise they would need to travel billions of miles for safety validation.98 While this novel method of collecting data to validate the safety of autonomous vehicles may or may not prove valuable, implementing it in the United States would be would be difficult to do at scale until the FAA implements its new rules that allow out-of-sight drone flights and flights over people.99

2. Less Innovation

AI will spur innovation so policies that limit the development of AI will limit innovation.100 For example, proposals to ban or limit the introduction of autonomous vehicles would also limit the generation of new businesses, business models, and ways to do deliver services through the “passenger economy.” The passenger economy, a term coined by Intel and research firm Strategy Analytics, “is the economic and societal value that will be generated by fully autonomous…pilotless vehicles.”101 The firms envision a world where a significant portion of vehicle ownership is replaced by fleets of autonomous vehicles that provide on-demand transportation. Productivity would also increase as autonomous vehicles free employees to work during their commutes and autonomous trucks to operate more efficiently. The firms estimate the value of this economy could be $7 trillion by 2050.102 Nations that ban autonomous vehicles will not experience the benefits of such an economy.

3. Lower-Quality AI

There is often a negative correlation between making an AI system more explainable and its accuracy.103 As a result, any policies that require AI to be explainable could lead to less accurate AI. For example, researchers at Mount Sinai Hospital in New York developed an AI system called Deep Patient that can predict whether a patient is contracting any of a wide variety of diseases.104 The researchers trained Deep Patient on the health data from 700,000 patients, using hundreds of variables, such as test results, which allow it to predict diseases such as schizophrenia—which doctors struggle to predict—extremely well.105 Even though its operators can verify its accuracy by measuring outcomes, such as if a person is developing a disease, it is difficult for its own developers to know why it made a particular decision.106

Many sophisticated forms of AI pose a similar problem. Developing an AI system capable of explaining itself or justifying its decisions is an incredibly challenging technical feat, so much so that the U.S. Defense Advanced Research Projects Agency (DARPA) devoted $75 million in 2017 to research how AI could achieve it.107 Some groups are skeptical that requiring explainability would chill innovation. They cite DeepMind, a British company owned by Google parent-company Alphabet, developing an AI system in 2018 that can analyze eye scans to predict diseases while also providing doctors a map of the features of disease it sees, such as hemorrhages.108 However, the fact that one of the world’s leading AI companies could achieve a form of explainability in a system it worked on for nearly two years is not evidence that all other operators should or would be able to achieve explainability for their AI easily.109 To be clear, it is legitimate for companies, such as IBM, to create internal requirements for AI explainability.110 Requiring all firms to meet such a standard, however, would create a barrier to adopting AI, because not all AI systems are alike and not all businesses have a similar level of expertise.

Nonetheless, it is important for AI operators to continually assess their AI system’s accuracy to ensure it is generating or predicting the correct outcomes. The other option is to allow only AI applications that operators can explain; this would lead to AI systems that consider fewer variables and that use simpler algorithms to make decisions.  In turn, this would reduce the effectiveness of AI that can generate significant impacts such as identifying a terminal illness before a doctor can.

4. Less AI Adoption

The right to human review illustrates how attempts to mitigate the impact of AI could also stifle its adoption. One of the reasons firms use AI is because it increases productivity as it can analyze large amounts of data significantly faster and cheaper than humans. For example, LawGeex, a firm that uses AI to automate the review and approval of contracts, created an AI system that outperforms lawyers in identifying risks in non-disclosure agreements (NDAs). During a test in which 20 lawyers and LawGeex’s AI were each given five NDAs to review, the lawyers took an average of 92 minutes to review the contracts and had a mean accuracy score of 85 percent. LawGeex’s AI, however, achieved 94 percent accuracy and only took 26 seconds to review all the contracts.111

A right to human review would require firms to review significant decisions made by algorithms. Such a requirement is particularly problematic because the complexity and amount of data used by some AI systems to make accurate decisions can make it nearly impossible for firms to explain exactly why a system made one decision, even though they may be able to provide a general explanation of how the system works. Thus, it would take significant time and expertise for a firm to explain many decisions made by AI, which then makes using AI more expensive—negating one of its benefits. Firms subject to a right to human review can make one of three choices.  They can: 1) use sophisticated AI, but face litigation if they cannot properly explain a decision, 2) implement simple, and therefore more explainable but less useful, forms of AI, or 3) leverage no AI at all. The first option is not viable over the long term, leaving firms with only the latter two options. And if firms choose either of these options, the economy will be less productive.112

5. Less Economic Growth

PricewaterhouseCoopers predicts AI can boost global gross domestic product by 14 percent by 2030.113 Unfortunately, policies based on the precautionary principle often discourage the use of AI out of fears that AI will eliminate jobs. For example, Amy Webb, founder of the Future Today Institute, which researches emerging technologies, professes, “We need to address a difficult truth that few are willing to utter aloud: AI will eventually cause a large number of people to be permanently out of work...”114

But policies that discourage the use of AI due to the prevalence of such fears rob economies of ways to become more productive, something that all developed nations will desperately need over the course of the next three decades as populations age and dependency ratios increase. If productivity growth really eliminates net jobs, then developed nations should be in depression-like conditions, as productivity over the last 50 years has increased in most nations by over 75 percent.115 The reality is that productivity leads to cost savings, most of which are passed on to consumers in the form of lower prices or to workers in the form of higher wages, both of which spur more spending, which in turn spurs job creation. Consequently, virtually all economic studies show that productivity gains lead to more jobs, even if there is short-term job loss.116 Policies that aim to stem the introduction of AI, and thus automation, will reduce per-capita income growth.

6. Fewer Options for Consumers

Biometric laws show how passing legislation to address hypothetical problems can discourage the use of AI, such that consumers have access to fewer services or products. For example, Illinois users of Facebook, Shutterfly, Google, and Snapchat have all sued the companies for scanning their faces without consent, which is illegal under the state’s Biometric Information Privacy Act.117 Regardless, the companies were typically sued for relatively innocuous uses of AI, such as for scanning individuals’ faces to tag them in photos or to add alterations to photos.118

Such threats of legal action do and will lead to fewer services for consumers. For example, Illinois and Texas’ biometric laws led to Google blocking individuals in those states from using its Arts and Culture app.119 Millions of individuals have downloaded the app, which scans users’ faces and compares those images to those of paintings in Google’s database to find users’ doppelgängers in famous art.120

Similarly, some lawmakers have already passed precautionary legislation related to autonomous vehicles that limit consumers’ options. For example, Washington, D.C. enacted a law in 2013 that requires a licensed human driver in the front seat of autonomous vehicles who is prepared to take control of the vehicle at any moment. This requirement means people with certain disabilities, who would like the independence that would come from using autonomous vehicles but do not qualify as a capable human driver under this law, are unable to use autonomous vehicles, even if they can safely operate them.121 The requirement might be reasonable given the current state of the technology, but locks in a standard that is unhelpful over the long term. Instead of a broad restriction that requires a capable individual in the driver’s seat of autonomous vehicles, government regulators, such as the National Highway Traffic Safety Administration (NHTSA) in the United States, should develop and enforce safety standards that preempt local laws, but allow the operation of fully autonomous vehicles that meet safety standards.

7. Higher Prices

By raising the costs of using AI for operators or by banning forms of AI, policies based on the precautionary principle also keep prices high for consumers. For example, some policies would require businesses to get express consent before using facial recognition. Yet, U.S. stores lose nearly $50 billion every year due to shoplifting, and facial recognition could reduce that figure by helping catch repeat offenders.122 Shoplifting costs consumers because money lost from shoplifting leads to higher prices—shoplifting cost the average U.S. family over $400 in 2009—instead of being put towards increased investments in customer experience improvements.123

Another way the precautionary principle keeps prices artificially high for consumers is by limiting the ways firms can offer their services or products through bans. For example, delivery robots can perform the “last mile” of a delivery—where transporters move packages from a central hub to an individual’s residence. Today the process is time-intensive and can be up to 28 percent of a product’s transportation cost.124 As a result, efforts to ban robots on sidewalks, which could reduce these costs, would rob consumers of faster and cheaper deliveries.

Likewise, slowing the introduction of autonomous trucks hurts consumers. There was a shortage of 51,000 truck drivers in the United States in 2017 which grew to 63,000 in 2018.125 Truck driver turnover rates are also 94 percent, meaning employers in the for-hire trucking market need to replace the vast majority of employees they hire every year.126 The situation has already led to delayed deliveries and higher prices for consumers and may only get worse because there will be 900,000 truck driver openings in the United States over the next decade due to retirements.127

8. Inferior Consumer Experiences

Policies that require firms to get prior consent before using commercial applications of AI, including facial recognition, can actually delay improvements in consumer experiences. For example, AI may be able to reduce the effects of implicit bias—the stereotypes that affect human actions in an unconscious manner. These stereotypes lead to people of color getting falsely accused of theft by store employees.128 Indeed, employees for Nordstrom Rack, Staples, and Finish Line have all wrongly accused African-Americans of theft in 2018.129 But AI technologies can improve the consumer experiences of all people, including people of color, by replacing or complementing human decision-making. Amazon Go, one of Amazon’s cash-register-less stores, uses cameras, sensors, and computer vision technology to “see” who takes items off shelves, adding these items to a virtual shopping cart so that checkout is seamless. Many retailers are moving in this direction, with over 150 companies, including 7-Eleven and two of China’s largest e-commerce businesses, Alibaba and JD.com, experimenting with using facial recognition and other biometrics to eliminate the need for cashiers. As a result, store employees are not looking for potential shoplifters because the technology automatically charges customers for what they take when they leave the store.130 After visiting Amazon Go, former CNET senior associate editor Ashlee Clark Thompson, an African-American journalist, wrote “No one cared what I was doing. Is this what it feels like to shop when you're not black?”131

9. Fewer Positive Social Impacts

AI can and already is generating positive social impacts, from mapping poverty to measuring literacy rates to helping doctors treat deadly infections.132 It is also helping make society safer, but the demonization of such AI applications as facial recognition and proposals to phase in AI could derail its benefits. While privacy advocates are stoking fears of future mass surveillance, law enforcement is already using facial recognition for several positive purposes. These purposes include identifying uncooperative suspects, such as the Capital Gazette shooter.133 In addition, some airports, such as the Washington Dulles International Airport, employ the technology to catch individuals using false documents.134

Law enforcement also uses AI to find victims. For example, the Fort Worth Police Department uses a combination of AI tools from Marinus Analytics, which builds AI tools to fight human trafficking, including facial recognition, to identify victims of human trafficking. With thousands of escort ads appearing online each day, AI can significantly reduce the time it would take a detective to go through the ads manually.135 While no government should use facial recognition to undermine personal freedoms and rights among its citizens or to unfairly target certain demographic groups, nations can mitigate negative uses without creating bans that curtail the use of beneficial ones.

Unfortunately, misguided proposals to curtail negative impacts from AI can create other negative impacts. For example, phasing in autonomous trucks to lessen job loss would be detrimental to the environment. Tractor trailers account for a disproportionate amount of greenhouse gas emissions, but autonomous trucks can take advantage of platooning, a form of driving where the trucks drive closer together than humans can by using vehicle-to-vehicle communication and sensors to automatically break and accelerate together.136 The trucks following the leader experience less wind resistance, which improves fuel efficiency.137 Limiting the number of autonomous trucks on roads, however, keeps emissions from trucks higher than necessary. In addition, banning autonomous vehicles in the United States would rob the nation of a potential $900 billion in yearly savings from fewer crashes.138

10. Reduced Economic Competitiveness and National Security

Nations that slow AI adoption will metaphorically tie one hand behind the backs of their companies competing in global markets. Moreover, for nations such as the United States, finishing behind China in the global race to be the leader in AI not only limits its ability to influence the development of AI, but also raises national security concerns due to the many potential national security applications of AI and the reduced competitiveness of the defense industrial base.139

#### It stifles the positive benefits of AI development.

Gürkaynak 18 --- Founding Partner of ELIG Gürkaynak Attorneys-at-Law, LL.M. from Harvard Law School, İlay Yılmaz, Partner at ELIG Gürkaynak Attorneys-at-Law, and Güneş Haksever, LLM from Istanbul Bilgi University, Attorney at IBM Turkey.

Gönenç, “Stifling Artificial Intelligence: Human Perils”, Computer Law & Security Review, Volume 32, Issue 5, 12/12/2018, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=3285264

Although scientists have calculated the significant positive welfare effects of Artificial Intelligence (AI), fear mongering continues to hinder AI development. If regulations in this sector stifle our active imagination, we risk wasting the true potential of AIs dynamic efficiencies. Not only would Schumpeter dislike us for spoiling creative destruction, but the AI thinkers of the future would also rightfully see our efforts as the ‘dark age’ of human advancement. This article provides a brief philosophical introduction to artificial intelligence; categorizes artificial intelligence to shed light on what we have and know now and what we might expect from the prospective developments; reflects thoughts of worldwide famous thinkers to broaden our horizons; provides information on the attempts to regulate artificial intelligence from a legal perspective; and discusses how the legal approach needs to be to ensure the balance between artificial intelligence development and human control over them, and to ensure friendly artificial intelligence.

Our technology, our machines, is part of our humanity. We created them to extend ourselves, and that is what is unique about human beings. – Ray Kurzweil1

1. Introduction

The Chinese cardboard game “Go” is one of the most complex strategy games humankind invented. Go was considered so important, there are myths indicating that ancient kings played Go between their armies in the battlefield to resolve the conflict in peace. Computers prevailed against humanities best in many zero-sum, perfect-information, partisan, deterministic strategy games2 before, with the exception of Go, which was something to be proud of.

The strategy aspect of Go is very complex and emphasizes the importance of balance on multiple levels and has internal tensions. A game of Go cannot be won by using brute force: calculating every possible move, similar to what IBM®’s then state of the art AI, Deep Blue® used to win over Gary Kasparov. To manoeuvre through the countless possible moves on the Go board and chose the most efficient path, one requires capabilities beyond the conventional computing powers; capabilities only our minds have (or so we thought), such as extremely accurate image and pattern recognition and insight, all of which we thought granted us superiority over the artificial minds we created.

In October 2015, a software called “AlphaGo®” became the first computer to beat a professional human Go player in an un-handicapped game of Go (Silver and Hassabis, 2016). AlphaGo’s victory is probably one of the most significant demonstrations of the capabilities of an AI. Firstly, it shows that AIs are beginning to surpass us at things where success is dependent on strategy as well as calculation. Things we classify as a “game”, from stock exchange to conflicts, from contract negotiations to hostage situations. Second, AlphaGo developed strategies on its own, through playing millions of games against itself. These feats sent the chills down the spines of those who fear that AIs will overpower us in the future.

We humans accelerate the future with our minds. This is a strength and a weakness. Often, our predictions of the future are highly inaccurate. Based on predictions from a book called ‘The World in 2010’, published in 1976, we should have been living above and below the surfaces of three planets as of five years ago. Predictions regarding the future of AI are equally likely to be off base.

To avoid premature regulation over AI, we should be studying and searching for the meaningful point in time when a broader anxiety about AI becomes a genuine concern. The study of a point of ripeness, a ‘threshold ability test,’ asks when AI could really bring about concrete disadvantages that might counter-balance the demonstrated contribution to economic efficiency and welfare.

In the absence of such an objective benchmark marking the point in time when AI becomes a competitor with the human mind, regulators could easily jump the gun in regulating AI, which would lead to irreparable harm in total welfare of human societies.

Most of what we consider AI today is really our own intelligence re-formatted and re-cycled, with the help of computers lacking any skill of learning or consciousness of being. Regulation at this stage would be perverse. The economic efficiency potentials of AI should be set entirely free at this point in time, allowing us to actively and aggressively research appropriate goals for them which would not result in the extinction of humankind.

If you think our future robot overlords will one day thank us for ignoring the risks and under regulating, think again. On the one hand, any issues we may face from AIs will likely result from humanity failure to effectively direct AIs to our needs, not because we switched to a defensive AI regulation regime too early. On the other hand, at some point of time in the not too distant future, natural, human-related or external factors may threaten the fate of the Earth, and we may need AI to save the planet and us. One hopes that society has not pulled the hand brakes on the wheels of AI too early, fearing our own active imagination.

#### Turns the AFF: Military regulations destroys AI control by driving it underground, abroad, or into higher-risk areas

Watson 21 --- PhD in Engineering from the University of Gloucestershire, Degree in AGI Safety Fundamentals from the University of Cambridge, Senior Scientific Advisor to The Future Society at Harvard University, Fellow at the British Computing Society and Royal Statistical Society.

Dr. Nell, “Regulatory Challenges to Catastrophic AI Risk”, ExO Insight, 11/24/2021, https://insight.openexo.com/regulatory-challenges-to-ai/

Rick Increase Factors:

Obfuscation: Regulations may drive research underground where it is harder to monitor, or to ‘flag of convenience’ jurisdictions with lax restrictions, by embedding dangerous technologies within apparently benign cover operations (multipurpose technologies), or by obfuscating the externalized effects of a system, such as in the vehicle emissions scandal (Wikipedia).

Arms race: Recent advances in machine learning such as multimodal abstractions models (aka Transformers, Large Language Models, Foundation Models) such as GPT-3 and DALL-E illustrate that dumping computing resources (and the funds for them) in colossal models seems to be a worthy investment. So far, there is no apparent limit or diminishing return on model size, and so now state and non-state actors are scrambling to produce the largest models feasible in order to access thousands of new capabilities never before possible. An arms race is afoot. Such arms races can lead to rapid and unexpected take-off in terms of AI capability, and the rush can blindside people to risks, especially when the loss of a race can mean an existential threat to a nation or organization.

Perverse incentives: Incentives can be powerful forces within organizations, and financialization, moral panic, or fear of political danger may cause irrational or incorrigible behavior of personnel within organizations.

Postmodern Warfare: Inexpensive Drones and other AI-enabled technologies have tremendous disruptive promise within the realm of warfare, especially given their asynchronous nature. Control of drone swarms must be performed using AI technologies, and this may encourage the entire theatre of war to be increasingly delegating to AI, perhaps including the interpretation of rules of engagement and grand strategy. (Lsusr, 2021)

Cyber Warfare: Hacking of systems is increasingly being augmented with machine intelligence (Cisomag, 2021), through GAN-enabled password crackers (Griffin, 2019) and advanced social engineering tools (Newman, 2021). This is equally the case in the realm of defense, where only machine intelligence may provide the swift execution required to defend systems from attack. A lack of international cyberwar regulations, and poor international policing of organized cybercrimes, may increase the risk of catastrophic risks to societal systems.

Zersetzung: The human mind is becoming a new theatre of war, through personalized generative propaganda, which may even extend to gaslighting attacks on targeted individuals, significantly leading to destabilization of societies (Williams, 2021). Such technologies are also plausibly deniable, being difficult to prove who may be responsible.

Inflexibility: The German Military after WW1 was not allowed to develop their artillery materiel, and so developed powerful rocket technologies instead, as these were not subject to regulation. Similarly, inflexible rules may permit exploitable loopholes. They may also not be sufficiently adaptive to allow for the implementation of new technologies and even improved industry standards.

Limitation of problem spaces: – It may be taboo to allow machine intelligence to work on sensitive issues or to be exposed to controversial (if potentially accurate) datasets. This may limit the ability of AI to make sense of out complex issues, and thereby frustrate finding solutions for crises.

**2NC---AT: AI = No War**

**High tech warfare means defense doesn’t apply---AI escalation leads to nuclear war**

**Saalman, 18**

Lorea Saalman, EastWest Institute Asia-Pacific Program Vice President, “"Fear of false negatives: AI and China's nuclear posture"; Bulletin of the Atomic Scientists. April 2018. https://thebulletin.org/2018/04/fear-of-false-negatives-ai-and-chinas-nuclear-posture

New pockets of excellence. In its relations with Russia and the United States, China has long contended with nuclear asymmetry. **AI** and autonomy, in contrast, **offer Beijing the long-term potential to disrupt Washington’s traditional strengths**. They open the door for swarm and other technologies that could overwhelm conventional and nuclear platforms that are larger, more cumbersome, and less agile. While China may be concerned about potential adversaries tracking its own nuclear platforms and systems, Beijing is just as likely to avail itself of these relatively inexpensive methods of disrupting US activities. Also, Chinese publications indicate that Beijing is building autonomy into its own “bolt-out-of-the-blue” systems, for example in hypersonic glide vehicles such as the DF-ZF. As China debates integration of automation via launch-on-warning, doing so with a **greater range of AI** and autonomy in its tool kit could lead to **destabilizing trends.** Again, the most sensational advances in these enabling technologies do not necessarily carry the greatest implications for China’s military and nuclear force structure. Instead, what counts is the level of AI and autonomy introduced into Beijing’s command and control structure.

When it comes to platforms, this author’s preliminary review of Chinese technical writings on AI and autonomy reveals that Beijing’s greatest emphasis, at least where the most flexible systems are concerned, is on unmanned aerial and underwater vehicles. In China’s view, these systems can be leveraged for a range of activities, including enhanced accuracy in: battlefield reconnaissance, surveillance, patrolling, electronic reconnaissance, communications, electronic interference, combat assessment, radar deception, projectile firearms, laser guidance, target indication, precision bombing, interception and launch of tactical missiles and cruise missiles, and anti-armor, anti-radiation, and anti–naval vessel capabilities; as well as nuclear, chemical, and biological detection and operations. When the topic turns to leveraging new means of warfare, Chinese writings discuss the use of swarm systems (link in Chinese) for a number of purposes, with battlefield applications focusing on anti-submarine warfare and countering integrated air defense.

AI and autonomy provide China an opportunity to exploit a new pocket of excellence, but they are hardly ends in themselves. This is one of myriad reasons that China has been reluctant to engage in arms control efforts to constrain the deployment of autonomous systems. Moreover, the amount of Chinese research already being conducted in this arena, particularly at the university level, is substantial. Research is unlikely to diminish any time soon. (Programs on AI and autonomy receive ample government support through such funds as the Laboratory of National Defense Technology for Underwater Vehicles, Project for National Key Laboratory of Underwater Information Processing and Control, National Key Basic Research and Development Program, China Aviation Science Foundation, National Science and Technology Major Project, National 973 Project, National Key Laboratory Fund, National “863” High-tech Research and Development Program, and Ministry of Communications Applied Basic Research Project, among a number of others.)

Expansive programs to turn AI and autonomy into a weaponized reality, even in challenging or illusory domains such as underwater swarms, indicate the emphasis this research receives within the hierarchy of Chinese defense planning. Whether or not China is able to achieve all of these capabilities, the vast resources and manpower allocated to these endeavors merit great attention by the United States. The direct implications of aerial and underwater swarms for larger, more lumbering US nuclear and conventional platforms remain to be seen. However, if the US Congress provides funding for the low-yield submarine-launched ballistic and cruise missiles proposed under the 2018 Nuclear Posture Review, China could deploy swarms to track and potentially intercept US dual-capable platforms. In short, whether intentionally or unintentionally, an escalatory scenario could develop.

The evolution of smaller platforms mobilized in joint formations could turn China’s nuclear asymmetrical disadvantage on its head. Much like decoys, which can be used as an inexpensive means of confusing and saturating missile defenses, low-cost swarms of unmanned aerial and underwater vehicles, along with cyber technologies, could provide a “guerilla combat–style” advantage against systems that the United States sees as providing an element of surprise, speed, and precision. Some of these platforms are already destined for deployment and will provide China with greater capability to monitor US activities in the Asia-Pacific region. However, if these platforms are turned toward actual engagement—in efforts to disrupt or confront lower-yield, smaller-scale US nuclear or dual-capable platforms—the potential for miscalculation may grow.

If China enhances its development of cruise missiles and hypersonic glide platforms by applying AI and autonomy, close-range encounters off the coast of Taiwan and in the East and **S**outh **C**hina **S**eas **could grow even more complicated**. China’s ground-launched DH-10 missile is believed to carry a conventional warhead, but indications have emerged that the air-launched CJ-10 may have both nuclear and conventional variants. Moreover, China has hedged on what kind of payload will be carried by hypersonic glide platforms such as the DF-ZF, which are designed to break through missile defenses. With the release of the 2018 Nuclear Posture Review and Vladimir Putin’s subsequent declaration that Russia has developed new nuclear weapons, the United States and Russia have engaged in a game of tit-for-tat. If China follows suit, a new set of destabilizing variables could be introduced into a region that is already tense and crowded, with freedom-of-navigation operations carried out among competing territorial claims.

From asymmetry, advantage. Within this environment, China’s integration of AI and autonomy aligns with its attempts to avoid being surprised by a false negative. Though the United States and Russia are both trending toward intentional escalation in their official doctrines, China’s response to this trend indicates a desire to avoid getting dragged into a nuclear arms race. Nonetheless, Beijing’s **assumptions** about US preemptory behavior have shaped its efforts to leverage its nuclear asymmetry into an advantage. One significant step in this direction comes through greater Chinese integration of AI and autonomy, meant to mitigate the risk of being caught off guard, whether by a conventional or nuclear system. While some aspects of this dynamic have stabilizing potential—as is true of enhanced situational awareness—strong indications suggest that China is engaged in other pursuits **that could lead to miscalculation at the conventional and nuclear level**.

**Chinese AI dominance is the death knell of global peace---sparks great power wars**

**Allison 20 –** Professor of Government, Harvard Kennedy School

Graham Allison, August 2020, "Is China Beating the U.S. to AI Supremacy?," Belfer Center for Science and International Affairs, <https://www.belfercenter.org/publication/china-beating-us-ai-supremacy>

An AI Arms Race?

During the Cold War, the stakes in the nuclear arms race with the Soviet Union were obvious. In today’s **Thucydidean rivalry** between a **meteorically** rising **China** and a colossal ruling **United States**, what are the risks of an escalating AI arms race?

Like it or not, **future war will be AI-driven**. As Secretary of Defense Mark Esper recently noted at the conference of the National Security Commission on AI, “Advances in AI have the potential to change the character of warfare for generations to come. **Whichever nation harnesses AI first will have a decisive advantage on the battlefield for many, many years.”** AI’s ability to accelerate decision cycles in conflict will compel militaries to adopt it. In air-to-air combat, pilots begin with an ooda loop: observe, orient, decide, act. If A can “get inside B’s OODA loop,” A wins—since he can maneuver to escape A’s fire and attack where he calculates B’s path will leave him when A’s missile arrives. Because AI can observe, orient, decide and act at multiples of a human pilot, it will become irresponsible to send a human pilot into battle with an AI piloted aircraft.51 As former Chairman of the Joint Chiefs of Staff Joeseph Dunford put it: “**Whoever has the competitive advantage in artificial intelligence and can field systems informed by artificial intelligence, could very well have an overall competitive advantage**.”52

The demonstrated success of AlphaGo, and more recently, AlphaStar, in defeating all competitors in one of the world’s most complex real-time strategy video games suggests that in any structured contest between offense and defense, **AI will dominate humans.** The company, country or team with the best AI will win. As an example, consider American football. In what commentators often discuss as a “chess match,” the offense and defense coordinators know that if the defense guesses correctly whether the next play will be a pass or a run, most nfl teams’ defenses can successfully stop most opponents’ offense. Reading all the variables in a situation, AI should be able to tilt the scales on the field—or in analogous military competitions on land, sea, and in the air and space.

The domain’s leader will also be the first to know which of today’s military mainstays AI will upend. Germany discovered the power of submarines before World War I because it led in their development. British admirals did not wake up to their deadly efficiency until a lone German U-boat in 1914 sank three armored cruisers on a single morning. **By then, it was too late**—the British had already invested their treasure in building battle fleet that had become largely obsolete. The coordination of drones and cruise missiles that successfully attacked Saudi Arabia’s most valuable target and cut its oil exports by half is suggestive. Will AI-empowered drone swarms make aircraft carriers equally obsolete, all for one one-thousandth of the cost? Will AI analysis of data from all sources pierce the invisibility of stealthy systems like the F-35 in which the United States has invested so substantially? **The first country to know will be the one driving the research and development frontier.**

#### Chinese AI dominance increases incentives for China to be assertive in foreign policy

Chang 18 – Benjamin Angel Chang is the inaugural Andrew W. Marshall Fellow at Georgetown University's Center for Security and Emerging Technology (CSET).

Benjamin Angel Chang, December 2018, “Chapter 14. AI and US-China Relations,” in “AI, China, Russia, and the Global Order: Technological, Political, Global, and Creative Perspectives,” https://nsiteam.com/social/wp-content/uploads/2019/01/AI-China-Russia-Global-WP\_FINAL\_forcopying\_Edited-EDITED.pdf

Independent of effects on the US-China relationship, intensified PRC use of AI for domestic security may also encourage greater Chinese assertiveness. Again, I highlight two potential reasons. First, a pacified domestic sphere might free up attention for expanded external aims. China’s relative ability to weather the 2008 financial crisis significantly motivated its recently more assertive turn (Chen & Wang, 2011). Whereas many Chinese intellectuals had previously sought to emulate Western economic development, viewing the American stage of development as if a higher rung on a universally climbable ladder, the crisis incubated the view that, instead, the Chinese model might be a fine endpoint in and of itself. Similarly, if the CCP were to feel AI had successfully and permanently allowed it to address the full panoply of possible sources of broad public unrest, ranging from unbalanced growth to Xinjiang to income inequality, it would likely see this as one of the Party's Chang 109 crowning achievements in its leadership of the Chinese people. Chinese spending on domestic security has exceeded spending on external defense since 2010, with the gap increasing each year. In 2017, according to the best open-source estimate available, the former exceeded the latter by 18.6 percent (Zenz, 2018). Were the domestic sphere to be “solved,” some of this attention might then be turned outward. Second, concentrations of power generally tend to lead to more belligerence on the international stage. In particular, by substituting technology for manpower in carrying out the state's policing functions, an AI-empowered PRC may enable ever-smaller groups of elites to retain equivalent amounts of power. For de Mesquita et al. (1999, 2003), as the size of the coalition required for political survival (the "winning coalition") shrinks, corruption and war may become more likely, as leaders no longer fear being punished by other domestic actors for selfish arrangements or military defeats.37

**2NC---AT: US Too Far Ahead**

**China’s catching up---continued innovation by America is necessary to outpace them**

**Allison 20 –** Professor of Government, Harvard Kennedy School

Graham Allison, August 2020, "Is China Beating the U.S. to AI Supremacy?," Belfer Center for Science and International Affairs, <https://www.belfercenter.org/publication/china-beating-us-ai-supremacy>

China’s AI Surge

Though still in their infancy, AI technologies will be drivers of future economic growth and national security. From facial recognition and fintech to drones and 5g, **China is not just catching up. In many cases, it has already overtaken the United States to become the world’s undisputed No. 1**. In some arenas, because of constitutional constraints and different values, the United States willfully forfeits the race. In others, **China is simply more determined to win.**

China’s AI surge is so recent that anyone not watching closely has likely missed it. As late as 2015, when assessing its international competition, American industry leaders—Google, Microsoft, Facebook and Amazon—saw Chinese companies in their rearview mirrors alongside German or French firms in the third tier. But this changed four years ago—in 2016—when leading AI application company DeepMind fielded a machine that defeated world champion Lee Sedol in the world’s most complex board game, Go.9 Even after several American companies’ machines had bested the chess masters of the universe10, most Chinese remained confident that machines could never beat Go champions, since Go is ten thousand times more complex than chess. Thus, DeepMind’s decisive victory became for China a “Sputnik moment”11—a jolt as dramatic as the Soviet Union’s launch of the first satellite into space that sparked America’s whole-of nation surge in math and science, nasa’s creation and the original “moon shot.”

Kai-Fu Lee’s book AI Superpowers offers an insightful summary of China’s engagement in the field. It began with President Xi Jinping’s personal reaction to the defeat of the world’s Go champion. **Declaring that this was a technology in which China had to lead**, he set specific targets for 2020 and 2025 that put China on a path to dominance over AI technology and related applications by 2030.12 Recognizing that this would have to be led by entrepreneurial companies rather than agencies of government, he designated five companies to become China’s national champions: Baidu, Alibaba, Tencent, iFlytek and SenseTime.13 **Twelve months after Xi’s directive, investments in Chinese AI startups had topped investments in American AI startups**.14 By 2018, China filed 2.5 times more patents in AI technologies than the United States.15 And this year China is graduating three times as many computer scientists as the United States.

In contrast to nuclear weapons—where governments led in discovery, development and deployment—AI and related technologies have been created and are being advanced by private firms and university researchers. **The military establishments in Washington** and Beijing **are essentially playing catch-up, adopting and adapting private-sector products.**

Where do these two competitors stand in the AI race today? Consider leading indicators under six key headings: product market tests, financial market tests, research publications and patents, results in international competitions, talent and national operating environments.

Consumers’ choices of products in markets speak for themselves. In fintech, China stands alone. Tencent’s WeChat Pay has nine hundred million Chinese users,16 while Apple Pay only has 22 million in the United States.17 And when it comes to capability, WeChat Pay can do much more than Apple Pay. Chinese consumers use their app to buy coffee at Starbucks and new products from Alibaba, pay bills, transfer money, take out loans, make investments, donate to charity and manage their bank accounts. In doing so, they generate a treasure trove of granular data about individual consumer behavior that AI systems use to make better assessments of individuals’ credit-worthiness, interest in products, capacity to pay for them and other behavior. In mobile payments, Chinese spend $50 for every dollar Americans spend, in total, $19 trillion in 2018.18 U.S. mobile payments have yet to reach $1 trillion. Credit cards are as old-fashioned to Chinese millennials as handwritten checks are to their American counterparts. Mark Zuckerberg has noticed: Facebook’s major moves last year into digital payments,19 including the recent introduction of Facebook Pay, are copying Tencent, rather than the other way around.

In facial recognition, the world’s most valuable AI startup is Chinese company SenseTime20—a company whose headquarters Graham visited in October. (While there, Graham also took a tour of Zhongguancun—China’s version of Silicon Valley—guided by Kai-Fu Lee whose hedge fund is one of the leading VC investors in Chinese AI startups.) In 2018’s international competition for facial recognition, Chinese teams claimed the top five places.21 Chinese firms—such as Hikvision and Dahua Technology, which control a third of the world’s security camera market22; Tiandy, whose cameras need light from only a single star at night to capture high-definition color images23; and Wuhan Guide Infared, which specializes in infrared and thermal imaging—are working hand in glove with their government to perfect facial recognition for profit and control. In this domain, there is no U.S.-China contest; the United States has essentially conceded the race because of concerns over the average individual’s privacy, and deep reservations about how this technology could be deployed. Westerners were alarmed in 2017 when researchers at Stanford created an AI algorithm that could detect with shocking accuracy individuals’ sexual orientation simply by scanning a single photo24. It does not take much imagination to consider how less socially liberal governments would apply this technology. So while San Francisco recently banned facial recognition technologies, the Party has given China’s top four facial recognition firms access to its database of over 1.4 billion citizen photos. One well-informed venture capitalist in this arena estimates that Chinese facial recognition firms have 1 million times more images than their U.S. counterparts.

In speech tech, Chinese are beating American firms in all languages—including English. The world’s top voice recognition startup is China’s iFlytek. Its user base is seven hundred million, almost twice the 375 million people who speak to Apple’s Siri.25 In system performance competitions, iFlytek regularly beats teams from Google, Microsoft, Facebook, ibm and mit, all in its second language.26 At Stanford’s international challenge for machine reading comprehension, Chinese teams won three of the top five spots, including first place. Baidu developed a human-level speech recognition system a year before Microsoft did.

Who was the U.S. Army’s major supplier of commercial drones until 2017—when the United States prohibited purchases for foreign suppliers?27 Shenzhen drone maker DJI, which controls 70 percent of the global market28. Drones would be just miniature hobby helicopters without elementary AI, which gives them computer vision for targeting weeds or weapons, and enables them to operate in swarms. As the recent attack on Saudi Arabia’s principal oil facilities demonstrated, the world has just begun to discover the security consequences of AI-enhanced drones operating literally below the radar. Of the world’s top five commercial drones brands, 3 are Chinese; 1 American.29

5g infrastructure will be the backbone that enables AI to reach further into everyday life, from automated cars to smart glasses. China’s Huawei is the world’s leading supplier of this telecom equipment. Not only does it own the Chinese market, which will be the world’s largest, but its 28 percent global market share nearly equals the combined shares of its two top competitors.30 Of the top four brands that will build 5g infrastructure, two are Chinese and zero are American. Chinese firms own twice as many 5g -essential patents as American firms. While the outcome of the current U.S. government campaign against Huawei remains uncertain, the company is currently delivering 5g systems well ahead of all competitors and is bringing a 5g phone to market a year ahead of Apple, the company that invented the iPhone.

Financial markets reflect these realities. Five years ago, two of the world’s twenty most valuable internet companies were Chinese; today, nine are. The “Seven Giants of the AI age”—Google, Amazon, Facebook, Microsoft, Baidu, Alibaba and Tencent—are split on either side of the Pacific. Of every ten venture capital dollars invested in AI in 2018, five went to Chinese startups; four to American firms.31 Of the world’s top ten AI startups, half are American and half are Chinese.

**Chinese investments in AI research and development have surged to American levels, and the results are beginning to show it.** **The blunt truth is that China is laying the intellectual groundwork for a generational advantage in AI.** According to the Allen Institute for Artificial Intelligence’s authoritative assessment, China would overtake the United States in 2019 in the most-cited 50 percent of AI papers. It will take the lead in the most-cited 10 percent this year. And by 2025, the United States will fall to second in the top 1 percent of papers.32 (Fortunately, in breakthrough papers, China remains behind.) In public patents for AI technologies, China passed the United States in 2015, and in 2018 filed 2.5 times more than America.33 In machine learning’s hottest subfield—deep learning—China has six times more patent publications than the United States. (Raw numbers, however, must be taken with a grain of salt, since not all patents are equal.)

China is investing heavily in the necessary hardware as well. In 2001, China had none of the world’s five hundred fastest supercomputers. Last year, it had 219 (the United States has 116).34And while China’s supercomputers previously relied on American semiconductors, its top machine today was built entirely with domestically-manufactured processors.

**2NC---AT: China Wins Now**

**Close, but *not inevitable*---regulatory environment and maintaining comparative advantages in the private sector are key**

**Allison 20 –** Professor of Government, Harvard Kennedy School

Graham Allison, August 2020, "Is China Beating the U.S. to AI Supremacy?," Belfer Center for Science and International Affairs, <https://www.belfercenter.org/publication/china-beating-us-ai-supremacy>

Clues for a Winning Strategy

**Is AI a race China is destined to win?** With a population four times the size of the United States, there is no question that China will have the largest domestic market for AI applications. With many multiples of the United States in data, substantially larger numbers of computer scientists and a government for which there is a first-order priority, we can understand colleagues who are pessimistic. Indeed, **it is our best judgment that on the current trajectory, while the United States will maintain a narrow lead over the next five years, China will then catch up and pass us quickly thereafter**.

Nonetheless, we **believe that this is an arena in which the United States can compete—and win**. Congress recently established the “National Security Commission on Artificial Intelligence,” with Eric Schmidt as its chair, and Bob Work, who served as Deputy Secretary of Defense under both Obama and Trump, as Vice Chair. Its mission is to develop that strategy “to ensure America’s national security enterprise has the tools it needs to maintain U.S. global leadership.”55 In the hope of being helpful to that effort, we conclude with five pointers toward a winning strategy.

First, Americans must wake up to the challenge. Recognition that that the United States faces a serious competitor in a contest in which the outcome will be decisive for our future is necessary to get our competitive juices flowing. The Olympics offers an instructive analogy for thinking about a competitive strategy for AI. It also reminds us that competition is inherently a good thing. Competition produces superior performance. Participants in a marathon run faster than they do when running alone. Indeed, competition is a core American value. Free markets organize a competitive process that produces better products at cheaper prices. Science and its applications advance as research teams compete to better understand the world.56

Second, in this competition, the United States cannot hope to be the biggest—in that category, China wins by default due to the size of its population. However, what the United States can be is the smartest. In the seeking to improve and advance the most advanced of technologies, the brightest 0.0001 percent of individuals make the difference. The United States can succeed by recruiting talent from all 7.7 billion people on Earth and enabling these individuals to realize their full potential.57 In fact, U.S. companies have now recruited more than half of the top 100 recognized AI geniuses. In sharp contrast, China is a closed society—limited essentially to 1.4 billion Chinese speakers. Just 1000 foreign born individuals became Chinese citizens last year. So while the United States will not win competitions in which bulk numbers are the dominant factor, where brilliance, creativity and innovation matter most, the United States has a decisive advantage.58

Third, platforms matter. Here the United States begins with a huge sustainable competitive advantage: English is the universal language for science, business and the web. Chinese face the choice of either speaking English, or simply talking to themselves. Not only do the Chinese, but also the French and others often complain that this is unfair—and it may be. But it is a fact. To transform Singapore from a third-world city into one of the world’s most successful and prosperous global trading hubs, Lee Kuan Yew insisted on making English its first language. (Indeed, at one point in counseling Chinese leaders, he suggested that China make English its first language.) Today, more than half of the 7.5 billion people on Earth speak English—and another billion are seeking to learn.

Fourth, American companies have a significant first mover advantage in the establishment of the major platforms in AI, including operating systems (Android and Apple), design of advanced semiconductors (arm), and killer apps—including Instagram, YouTube and Facebook. Instagram has 1 billion monthly active users; Facebook more than 2.4 billion. While Chinese competitors will certainly attempt to displace the current leaders in both platforms and applications, if American companies are smart enough to continue enlarging their users’ opportunities, improving their experiences, and expanding the number of people using their platforms and applications, Chinese and others who want to speak to the world could have to continue relying on U.S.-dominated platforms.

## IR K

### Link – AI – Tech Thesis

#### The advent of modernity is marked by the disappearance of humanity – the global integration of AI is a strategy of racialized governance via digitalized corporatization that has exceeded sovereignty and become a Leviathan built on speed and acceleration into a dystopic future that marks populations deemed unworthy for death

Mbembe 19 – member of the staff at the Wits Institute for Social and Economic Research (WISER) at the University of the Witwatersrand, visiting appointment at the Franklin Humanities Institute at Duke University PhD in History at the Sorbonne, DEA in Political Science at the Instituts d'études politiques, [Achille, “Bodies as Borders,” From the European South 4, pg. 5-18, DKP]

My intervention is a set of urgent, fragmentary, and unfinished reflections on our global present. When I say ‘our global present’, what I truly have in mind is the sustainability and durability of our planet. As a matter of fact, this is an almost existential preoccupation, which is increasingly expressed in many different voices and shared by various people all over the world.

Indeed, many are wondering how we should inhabit anew and share as equitably as possible a planet whose life-support system has been so severely damaged by human activities and that is in dire need of repair. In view of the deep state of fragmentation the planet finds itself in, they are asking: how should we re-member it, that is, put back together its different parts, reassemble it and reconstitute it as an integrated system in which humans and nonhumans, physical, chemical and biological components, oceans, atmosphere and land-surface are all interlinked in a grand gesture of mutuality?

These questions of inhabitation and interconnection, of mutuality, sustainability and durability, of the interlacing of human history and Earth’s history are far from abstract concerns. In fact, the ongoing long-term planetary environmental changes have only further dramatized them, and there is little doubt that they will be at the centre of any debate on the future of life and the future of reason in this century. To properly attend to them forces us to refocus our attention on three mega processes that have an almost overwhelming bearing on what humanity and the planet we live on (the only one, so far, where life is known to exist) might become.

Early 21st-century corporate sovereignty

The first mega process is the unprecedented consolidation of power and knowledge (political, financial, and technological) in the hands of private high-tech corporate entities whose sphere of action is not one country or one region, but the globe. ‘Corporate sovereignty’ has taken various forms throughout history. Take, for instance, the English East India Company and its political dominance in some parts of the Indian subcontinent in the 18th century. A composite, diffuse and hybrid entity, it exercised powers customarily associated with formal state institutions. It could acquire territories and exercise authority over people. It could engage in wide ranging operations such as tax collection and war making. In competition with the monarchical and national state, it was a key part of the different institutional and constitutional forms that shaped imperial expansion (see Stein 2011).

The conditions that have enabled the expansion of privatized government in the first half of the 21st century are well known. Many of these have to do with the various legal frameworks behind international trade agreements, foreign investment treaties and other mechanisms that have turned markets into the single most undisputed forces of our times. Others have to do with the computational transformations of financial markets and the possibilities afforded by media technologies (see Beverungen and Lange 2018). Furthermore, whether the old distinction between the economic power of corporations and the political sovereignty of states still holds is more and more open to debate (read Barkan 2013). Most global corporations aspire to secede from everybody else while exercising surveillance on everybody else. Their big dream is to be exempt from taxes and to be free from accountability; in short, to enjoy the kind of immunity and state of exceptionality we used to recognize only to truly sovereign powers.

In a recent book about what she terms “surveillance capitalism,” Shohana Zuboff argues that a global architecture of behaviour modification is under way. Driven by powerful states, high-tech corporations and military apparatuses, surveillance capitalism threatens what she calls “human nature” in the 21st century, just as industrial capitalism disfigured the natural world in the 20th. She shows the extent to which vast wealth is accumulated in what she terms new “behavioural futures markets,” that is, markets where predictions about our behaviour are bought and sold, and the production of goods and services is subordinated to new means of behavioural modification. Indeed, capital, especially finance capital, has become our shared infrastructure, our nervous system, the transcendental maw that nowadays maps out our world and its psycho-physical limits (Zuboff 2018). Around us, it looks as if nothing escapes its control. Affects, emotions and feelings, manifestations of desire, dreams or thoughts – no sphere of contemporary life has been left untouched by the spread of capital. Capital now extends its grasp deep into the underbelly of the world. In its wake, it leaves vast fields of debris and toxins, waste heaps of humans ravaged by sores and boils. Now that everything is a potential source of capitalization, it has made a world of itself: a hallucinatory phenomenon of planetary dimensions.

Early 21st -century corporate sovereignty is therefore an unprecedented form of power, whose main aspiration is to free itself from democratic oversight. As a result, we might no longer live in an epoch when sovereignty was exercised by the demos. The demos properly understood might no longer be the sovereign. Finance capital in the guise of a ubiquitous digital architecture might have definitely become the new Leviathan. We are witnessing the historical bifurcation between liberal democracy and finance capitalism, and the emergence of a new form of sovereignty – corporate sovereignty – which claims for itself the law of immunity and the powers of exception.

The computational speed regime

The second mega process I would like to invoke is technological escalation and the ways in which it has totally redefined the nature of speed, unshackled markets and the economy, and the way it constantly monitors our behaviour in an attempt at revealing how it could be modified and optimized. As a matter of fact, some of the fastest expanding markets in the world today are ‘markets for future behaviour’. They rely on better understanding incipient future intent. This “could be future voting intentions, the intent to commit fraud, the intent to buy life insurance, or the intent to stream a specific video,” argues Louise Amoore (2019, 4). These markets also rely on the extraction and mining of new forms of raw material, mostly consisting of information and details about individuals’ behaviour taken, as Zuboff writes, from the distant corners of our unconscious. It is raw material “plumbed from intimate patterns of the self” – “our personality, our moods, our emotions, our lies, our vulnerabilities, every level of our intimacy” (2018, 201). The purpose is not only to heighten the predictability of our behaviour. It is also to make life itself amenable to ‘datafication’.

A key feature of our times is therefore the extent to which all societies are organized according to the same principle – the computational. We are surrounded with ubiquitous computing, technologies that weave themselves into the fabric of our everyday lives, devices, sensors, things we interact with and which have become part of our presence in the world all the time. How the boundary between us and these devices is enacted is a matter of open debate (Matzner 2019).

But, what is the computational? The computational is generally understood as a technical system whose function is to capture, extract, and automatically process data that must be identified, selected, sorted, classified, recombined, codified and activated. Yet we shouldn’t forget that the computational is also a force and energy of a special kind, a speed regime with its own qualities and infrastructures. It is a force and energy that produces and serializes subjects, objects, phenomena; that splits reason from consciousness and memory, codes and stores data that can be used to manufacture new types of services and devices sold for profit. Whether operating on bodies, nerves, material, blood, cellular tissues, the brain or energy, the aim is the same, i.e. the conversion of all substances into quantities; the conversion of organic and vital ends into technical means; the capture of forces and possibilities and their annexation by the language of a machine-brain transformed into an autonomous and automated system.

But the computational is also the institution through which a common world, a new common sense and new configurations of power, of perception and of reality are nowadays brought into being. The globalization of corporate sovereignty, the extension of capital into every sphere of life and technological escalation in the form of the computational are all part of one and the same process.

The dialectics of entanglement and separation

The third mega process is what we should call the dialectics of entanglement and separation. All over the world, the combination of fossil capital, soft-power warfare, and the saturation of the everyday by digital and computational technologies has led to the acceleration of speed and the intensification of connections, creating a new redistribution of the Earth and of population movements. To be alive, or to remain alive, is increasingly tantamount to being able to move speedily.

In the process, the human race has come up against terrestrial limits. Such limits are not only the consequence of the sphericality of the planet. They are also limitations on the expansion of life as such. As the planet increasingly seems bound to burn, it is not only the individuated bodies that are imperilled. It is earthly existence, the fate of everything on earth, the fluidity of life which is at stake (Pyne 1997; Parisi and Terranova 2000).

Meanwhile, we are, more than ever before at any other time in human history, not only in close proximity to each other but also exposed to each other. This close proximity and exposure is experienced less and less as opportunity and possibility and, more and more, as heightened risk. But entanglement and exposure to each other are not all that characterize the now. Wherever we look, the drive is simultaneously and decisively towards contraction, towards containment, towards enclosure and various forms of encampment, detention, and incarceration.

Typical of this logic of contraction, containment, incarceration and enclosure is the worldwide erection of all kinds of walls and fortifications, gates and enclaves. In other words, various practices of partitioning space, of offshoring and fencing off wealth, of splintering territories, of fragmenting spaces, saddling them with various kinds of borders whose function is to decelerate movement, to stop it in some instances, for certain classes of populations, in order to manage risks. Various reasons are mobilized to account for this renewed infatuation with borders taken as the best way to manage risks. Security and the preservation of one’s identity are some of these reasons. And as it happens, physical and virtual barriers of separation, digitalisation of databases, filing systems, the development of new tracking devices, sensors, drones, satellites and sentinel robots, infrared detectors and various other cameras, biometric controls, and new microchips containing personal details – everything is put in place to transform the very nature of the border in the name of security. Borders are increasingly turned into mobile, portable, omnipresent and ubiquitous realities. The goal is to better control movement and speed, accelerating it here, decelerating it there and, in the process, sorting, recategorizing, reclassifying people with the goal of better selecting anew who is whom, who should be where and who shouldn’t, in the name of security.

As a result, borders are no longer merely lines of demarcation separating distinct sovereign entities. Increasingly, they are the name we should use to describe the organised violence that underpins both contemporary capitalism and our world order in general. But perhaps, to be exact, we should not speak of borders in general but, instead, of ‘borderization’, that is, the process by which certain spaces are transformed into uncrossable places for certain classes of populations, who thereby undergo a process of racialization; places where speed must be disabled and the lives of a multitude of people judged to be undesirable are meant to be immobilized if not shattered. Whatever the case, the technological transformation of borders is in full swing. In a sense, one of the major consequences of the acceleration of technological innovations has been the creation of a segmented planet of multiple speed regimes.

A key development, of late, is the extent to which border security practices have taken a keen interest in the connection between the human body and identity, as a means to achieve detailed control over movement and speed. This being the case, the question we must ask is the following: what precisely is at stake in the extension of the biometric border into multiple realms of social life and, in particular, the human body? In other words, what explains the migration from the border understood as a particular point in space to the border as the moving body of the undesired masses of populations? The answer is a new global partitioning between potentially risky bodies vs. bodies that are not.

It is in the nature of risk to be hidden from view. That which is hidden from view is generally unknown. For it to be known, it must be visualized. The screening of bodies at border checkpoints aims at making visible “that which is hidden from view, opening up new visualizations of the unknown, potentially risky body” (Amoore and Hall 2009, 444). In such a context, biometric technologies are supposed to fragment the human body in order to recompose it for the purpose of securitization, of elimination and neutralization of the risk. This happens because the human body is seen as an indisputable anchor from which data can be safely harnessed or extracted. As a result, we are witnessing a gradually extending intertwinement of individual physical characteristics with information systems – a process that has served to deepen faith in data as a means of risk management and faith in the body as a source of absolute identification. In this sense, biometric technologies should perhaps be best understood as techniques that govern both the mobility and enclosure of bodies (see van der Ploeg 2003). They are perceived as infallible and unchallengeable verifiers of the truth about a person – the ultimate guarantors of identity. They are supposed to produce the identification of a person beyond question, and lend authenticity and credibility to all of the data that are connected to that identity. According to this logic, the world would be safer if only ambiguity, ambivalence and uncertainty could be controlled. These technologies are assumed to provide a complete picture of who someone is, to fix and secure identity as a basis for prediction and prevention, leaving people to dispute their own identity.

The three mega processes I have briefly sketched are driving the movement towards what I have called ‘planetary entanglement’, as well as its opposite, that is, enclosure, contraction, containment, encampment, and incarceration. Once again, they are shaped by the alliance between military power, the industries that surround it (contractors), and tech giants. They are also driven by corporate elites increasingly detached from their countries of origin and who store most of their capital in tax heavens (see Davis 2019). These elites can no longer be ‘forced to account’ through traditional means such as elections or protests. They defeat citizens’ scrutiny via complexity and secrecy, often under the pretext of national security or via an economic rationale that puts capital first, before people. This movement is erratic, uneven. But everywhere it heightens uncertainty and insecurity. Everywhere it institutionalizes the risks inherent in the misfortunes of reality.

Life and mobility

Part of what we are witnessing as a result is a novel imbrication, a symbiotic merging of life and mobility. To be alive, or to survive, is more and more co-terminus with the capacity to move. Just as living, movement, in turn, involves continual doublings, the incessant crossing of multiple lines and thresholds, multiple transitions across layers. Life itself is more and more taken as something that can be calculated and recombined rather than merely represented. Furthermore, we are witnessing a bifurcation between life on the one hand and bodies on the other hand. Nowadays, not every body is thought of as containing life. Discounted bodies are believed to contain no life as such. They are, strictly speaking, bodies at the limits of life, trapped in uninhabitable worlds and inhospitable places. The kind of life they bear or contain is not insured or is uninsurable, folded as it is in extreme and thin envelopes.

Such bodies on the precipice are the most exposed to droughts, storms and famines, toxic waste and various experiences of effacement. Their livelihoods made impossible, they are the most likely to sustain the most crippling wounds and injuries. Trapped human subjects often without escape, they bear the brunt of terrestrial life on a damaged planet (Tsing et al. 2017). At the same time, they exceed all attempts to contain them. These bodies are not simply in motion. Interactive and generative, they are movements and events. The inside of such bodies is not separated from their outward environments. From the perspective of discounted bodies, to be alive is always and already to breach boundaries or to be exposed to the risk of the outside entering the inside (read Litvintseva 2019).

This disentanglement of life from discounted bodies, this redistribution of life on differential scales of insurability and non-insurability, is a key dimension of contemporary migration regimes. The latter aim either at slowing down the dynamics of people’s interactions, at creating distance or at shattering the chains of relations between them, so as to institute new patterns of separation. Contemporary movement restrictions are not limited to national boundaries. They are at work on a global scale. They are deepening the space and time asymmetries between different categories of humanity while leading to the progressive ghettoization of entire regions of the world. To a large extent, this is akin to a universalization of the Israeli model. In this model, the restriction of movement does not necessarily aim “to confine unwanted people territorially or to dissociate their movements from those of citizens, but to inscribe them into temporalities and spatialities that are disjointed to the point of giving these populations the illusion of being territorially separated” (Parizot 2018, 38).

Furthermore, at a time when the material components and biological organization of the body can be reengineered and redesigned, the latter are more than ever based on the ideas of repressive selection, reproduction and the rejuvenation of species. Only what can potentially generate value counts as life. In this context, borders are meant to concretize the principle of dissimilarity rather than that of affinity. They are not only obstacles to free movement. They are boundaries between species and varieties of the human. As such, they play a crucial role in contemporary modes of production of human difference and relatedness. Human bodies are increasingly divided between those that matter and those that do not, those who can move and those who cannot or should not, or should only move under very strict conditions. Bodies that should not move are those that are uninsured. They must be tracked, captured, and dispensed of. Such bodies are kept shifting between invisibility, waiting and effacement. They are trapped in fragmented spaces, stretched time and indefinite waiting (Peteet 2018). As for the dream of perfect security, it requires not only complete systematic surveillance, but also a cleansing policy. This dream is symptomatic of the structural tensions that, for decades, have accompanied our transition into a new technical system of increased automation – one that is increasingly complex yet also increasingly abstract.

One of the major contradictions of the liberal order has always been the tension between freedom and security. Today, this question seems to have been cut in two. Security now matters more that freedom. A society of security is not necessarily a society of freedom. A society of security is a society dominated by the irrepressible need for adhesion to a collection of certainties. It is one fearful of the type of interrogation that delves into the unknown, unearthing the risks that must surely be contained within. This is why in a society of security, the priority is, at all cost, to identify what lurks behind each new arrival – who is who, who lives where, with whom and since when, who does what, who comes from where, who is going where, when, how, why, and so on and so forth. Moreover, who plans to carry out which acts, either consciously or unconsciously. The aim of a society of security is not to affirm freedom, but to control and govern the modes of arrival.

The current myth claims that technology constitutes the best tool for governing these arrivals; that technology alone allows for the resolution of this problem – a problem of order, but also of awareness, of identifiers, of anticipation and predictions. It is feared that the dream of a humanity transparent to herself, stripped of mystery, might prove to be a catastrophic illusion. For the time being, migrants and refugees are bearing the brunt of it. In the long run, it is by no means certain that they will be the only ones.

The mega processes highlighted above leave us with foundational questions that will haunt us for most of this century. The first foundational question is related to what I called ‘borderization’, or the logics of containment, enclosure, and contraction. Perhaps more than at any other moment in our recent past, we are increasingly faced with the question of what to do with those whose very existence does not seem to be necessary for our reproduction; those whose mere existence or proximity is deemed to represent a physical or biological threat to our own life. Throughout history, and in response to this foundational question, various paradigms of rules have been designed for human bodies deemed either in excess, unwanted, illegal, dispensable, or superfluous. One historical response has consisted in putting in place spatial exclusionary arrangements. Such was, for instance, the case during the early phases of modern settler or genocidal colonialism in relation to Native American reservations in the United States, island prisons, penal colonies such as Australia, camps and Bantustans in South Africa. A late modern example is Gaza, and Gaza might well prefigure what is yet to come. Here, control of vulnerable, unwanted, surplus or racialized people is exercised through a combination of tactics, chief among which is ‘modulated blockade’. A blockade prohibits, obstructs, and limits who and what can enter and leave the Strip. The goal might not be to cut the Strip off entirely from supply lines, infrastructural grids or trade routes. It is nevertheless relatively sealed off in a way that effectively turns it into an imprisoned territory. Comprehensive or relative closure is accompanied by periodic military escalations and the generalized use of extra-judicial assassinations. Spatial violence, humanitarian strategies, and a peculiar biopolitics of punishment all combine to produce, in turn, a peculiar detention space in which people deemed surplus, unwanted, or illegal are governed through abdication of any responsibility for their lives and their welfare.

allBut there is another, early 21st -century example, which consists in waging new forms of wars, which can be called wars on speed and mobility. Wars on mobility are wars whose aim is to turn into dust the means of existence and survival of vulnerable people taken as enemies. These kinds of wars of attrition, methodically calculated and programmed, and implemented with new methods, are wars against the very ideas of mobility, circulation, and speed, whilst the age we live in is precisely one of velocity, acceleration, and increasing abstraction and algorithms. Moreover, the targets of this kind of warfare are not by any means singular bodies, but rather great swathes of humanity judged worthless and superfluous.

All of the above belongs to the current practice of remote borderization, carried out from afar, in the name of freedom and security. This battle, waged against certain undesirables and reducing them to mounds of human flesh, is rolled out on a global scale. It is on the verge of defining the times in which we live. Wars on mobility are peculiar wars on bodies. They have to do with two broad questions that confront us today and will haunt us for most of this century: on the one hand the question of life futures, that is, of the self-organization of being and matter; on the other hand, that of the future of reason.

The future of life and the future of reason

For a long time, the human race has been concerned with how life emerges and the conditions of its evolution. The key question today is how it can be reproduced, sustained, made durable, preserved and universally shared, and under what conditions it ends. Overall, these debates about how life on Earth can be reproduced and sustained, and under what conditions it ends, are forced upon us by the epoch itself, characterized as it is by the impending ecological catastrophe and by technological escalation.

It is a fact that, today, unprecedented numbers of human beings are embedded in increasingly complex technostructures. The latter are increasingly intervening in the dynamics of the Earth system on a planetary scale. This has led to the transgression of planetary boundaries such as those related to anthropogenic climate change, degenerative land-use change, accelerated biodiversity loss, perturbation of the global biogeochemical cycles of nitrogen and phosphorus, and the creation and release of novel entities such as nanoparticles and genetically engineered organisms (see Donges et al.).

Furthermore, both metabolically (for example in terms of their energy needs) and reproductively, technologies are becoming more and more tied in complex networks of extraction and predation, manufacturing and innovation. An example is recent developments in the domain of genes and molecules. As Margarida Mendes shows, the heyday of DNA study has allowed the cracking and public dissemination of the genetic codes of humans, plants, and animals. This, in turn, has given way to an exponential rise of biological patents, as currently nearly 20% of the human genome is now privately owned, in a context of a market logic that addresses life as a commodity to be manipulated and replicated under the volatility of market consumption. Studies after studies have shown for instance that corporations are intervening directly in the natural cycles of life and ecosystems through the widespread genetic modification of key elements in the food chain (see Mendes 2017). As patented GMO genes are absorbed into our bodies in a proprietary relationship of biological subjugation, the body itself becomes an expanded, multiple infrastructure, where intervention can happen at many different scales. It is therefore correct to argue that there is a shifting distribution of powers between the human and the technological, in the sense that technologies are moving towards ‘general intelligence’ and self-replication. They are being granted the powers of reproduction and independent teleonomic purpose rather than having them taken awayOver the last decades, we have witnessed the development of algorithmic forms of intelligence. They have been growing in parallel with genetic research, and often in its alliance. The integration of algorithms and big data analysis in the biological sphere does not only bring with it an increasingly greater belief in techno-positivism and modes of statistical thought. It also paves the way for regimes of assessment of the natural world, and modes of prediction and analysis that treat life itself as a computable object. Concomitantly, algorithms inspired by the natural world, and ideas of natural selection and evolution are on the rise. Such is the case with genetic algorithms – a subset of evolutionary algorithms that mimic actions inspired in biological operators, such as cells, seeking to optimize the responses to the problems of their environments by self-generating, and encompassing processes of mutation and natural selection. The latter are designed to evolve and further adapt to the environment, in a process of self-generation. The belief today is that everything is potentially computable and predictable. In the process, what is rejected is the fact that life itself is an open system, non-linear, and exponentially chaotic.

These are also times when many are gradually coming to the realization that reason may well have reached its limits. Or, in any case, it is a time when reason is on trial – we are, in other words, in a sort of Dark Enlightenment. Reason is a faculty we used to recognize in humans and in humans alone. In the Western tradition we have all, willingly or not, become the inheritors of reason, always seen as the highest of all human faculties, the one that opened the doors to knowledge, wisdom, virtue and, most importantly, freedom. Although unequally redistributed among them, it was the prerogative of humans alone. It distinguished the latter from other living species. Thanks to their superior capacity to exercise this faculty, humans could claim to be exceptional. Today, reason is on trial in two ways. First, reason is increasingly replaced and subsumed by instrumental rationality, when it is not simply reduced to procedural or algorithmic processing of information. In other words, the logic of reason is morphing from within machines and computers and algorithms. The human brain is no longer the privileged location of reason. The human brain is being “downloaded” into nano-machines. An inordinate amount of power is gradually being ceded to abstractions of all kinds. Old modes of reasoning are being challenged by new ones that originate through and within technology in general and digital technologies in particular, as well as through the top-down models of artificial intelligence. As a result, techne is becoming the quintessential language of reason.

Furthermore, instrumental reason, or reason in the guise of techne is increasingly weaponized. Time itself is becoming enveloped in the doing of machines. Machines themselves do not simply execute instructions or programs. They start generating complex behaviour. The computational reproduction of reason has made it such that reason is no longer, or is a bit more than, just the domain of human species. We now share it with various other agents. Reality itself is increasingly construed via statistics, metadata, modelling, mathematics.

### Link – AI Integration

#### The integration of AI via security cooperation constitutes the unshackling the nation-state from the population at the level of economic and military power – that turns case – it paves the way for unchecked racialized necropolitics as a value that informs politics and replaces human governance with AI that kill with impunity and result in endless, endemic warfare

Grove 20 – Associate Professor of Political Science and Director of the Hawai’i Research Center for Future Studies at the University of Hawai’I at Mānoa, PhD in International Relations at Johns Hopkins University [Jairus, “From geopolitics to geotechnics: global futures in the shadow of automation, cunning machines, and human speciation,” International Relations 2020, Vol. 34(3) 432 –455, DKP]

The automation of war and the reduction of human troop sizes has a similar effect. Wars aided by drones and as a result significantly smaller numbers of soldier casualties continue on for decades in a kind of sustainable warfare.28 The political and material cost of casualties like the material cost of striking are being removed from the political equation making states less and less accountable in the case of social justice and the pursuit of violence outside their borders.

The feedback between these two trends is potentially catastrophic. At the same time that war becomes easier, governments become less accountable to their people, and people are deprived of the means to support themselves, it is also the case that people will matter less to their governments as they will not possess the labor power to cause pain to the economic productivity of the country by means of striking nor the capacity to refuse to fight. Zygmunt Bauman has spoken of disposable populations, a kind of human waste or surplus where the value of one’s existence is meaningless for the state.29 However, we ought to go further down this path by way of Achille Mbembe’s creeping necropolitics.30 It is not merely that chronically or even intergenerational unemployed people have no value; it is that the marginalization and even murder of people can now generate value. In what Mbembe refers to as the ‘enclave economies’ of war machines:

The concentration of activities connected with the extraction of valuable resource around these enclaves has, in return, turned the enclaves into privileged spaces of war and death. War itself is fed by the increased sales of the products extracted.31

In these enclave economies fueled by petroleum, diamonds, but increasingly things like lithium or even sand or water, the outright murder of people, clearing space, generates value even in the supposedly post-resource digital economy.32 However, beyond the instrumental value of security there is also the explosion of security services as its own economic sector rather than as a merely means to secure other economic sectors. International security corporations such as Wackenhut industries, once a private prison service provider in the U.S., now generate profits from refugee management in Australia and Europe.33 The nearly 200 billion dollar private security industry and $1917 billion dollar defense sector suggest that the economy of making death and deprivation is more than merely a means. What few normative and legal limitations exist on the lethality of these corporations and institutions could disappear. This is already taking place in the global South and amongst African-Americans and indigenous people around the planet.

However, one can foresee, with little imagination, the extreme injustices of the contemporary era as a general condition of global life. What requires imagination on our part is reaching a turning point where these crimes become themselves normative, that is, the ‘good’ the state pursues. Contrary to our sensibilities such ideologies already exist and are even gaining attention outside the obscure chat rooms where they began.

Under the heading of ‘negative messianism’, Mbembe reviews the growing movement of the ‘Dark Enlightenment’, ‘a political religion. . . [that] calls for the exit from democratic society and total corporate and absolute dictatorship’.34 The movement calls for a global, racial, culling of the population in the name of ‘human biodiversity’ and expounds the value of using racially inferior populations for radical experimentation to jumpstart technological breakthrough. If this sounds too implausible even for speculation it is worth considering the spate of recent terrorist attacks in the U.S. by the vanguard of the Dark Enlightenment. The mass shooter who killed 20 people in El Paso Texas in August of 2019 posted his Dark Enlightenment manifesto before beginning his rampage.35 In 2020, there have been multiple attacks by the so-called Boogaloos who have infiltrated the U.S. military and police forces and seek to spark the Dark Enlightenment by escalating the Black Lives Matter protests into a full scale civil war.36 And then there is the most famous and vocal theorist of the Dark Enlightenment, Steve Bannon, who in addition to being a key architect of the Donald Trump administration, works tirelessly to build the Dark Enlightenment movement amongst the burgeoning far right of Europe.37 Whether this world view succeeds or actually becomes normative globally is not really the point. Instead, as is the mode in the speculation here I propose that in the burgeoning Dark Enlightenment movement we can see a political community built around necropolitics as a value rather than a necessary evil.

It would be too much to draw a direct line from the Dark Enlightenment to all of the neo-nationalist, neo-authoritarian, and neo-fascist movements around the planet. However, the accelerating global right wing has been institutionalized at the highest levels of power in liberal democratic nation-states such as the United States, U.K. and India, suggesting that liberal institutions cannot subsist on autopilot. Neo-authoritarian politics have also moved from shaping domestic polities to the shaping of the international order.38

In such an order, what would liberal democratic states look like? The constraints on the genocidal dictatorships of the twentieth century was of course that they needed a substantial portion of their populations. Genocide could only be pursued against minority populations. State behavior even in the extremes of the Nazi state among others still required full mobilization and therefore at some level the necessity of willing obedience even if not quite legitimacy that could be supplemented through terror.39

What of the behavior of future states for whom their people are in some sense an afterthought? At a minimum the basic conceits of survival that underwrite practices like deterrence or coercion would change dramatically. The very logic and mechanics of biopolitics would have to change. Without a necessary or strict relationship to the nation, would states differ significantly from some kind of corporate entity? Would the state more closely resemble the ancien regime? What would become of territoriality? These are the grammatical questions raised by the dark imagination of an automated future sufficiently comprehensive to create the material condition whereby a state could survive without the majority of their population’s cooperation.

Can we not already see the outlines of such a future in the decisions of Bolsanaro, Trump, Xi, Modi, and Duterte, who blithely write off millions of their own citizens in the face of COVID-19 and the nearly 50 per cent unemployment rate it has created where the virus has been allowed total freedom of movement?40 One need not be conspiratorial to see how quick authoritarian leaders have been to give up on disease containment once the data came back regarding the overwhelming racial disparity in COVID fatalities.41

If we consider the ways in which the shift from coal to oil changed the character of economic and labor relations with states in the twentieth century, the nearly 50 per cent loss of jobs due to computerization in the twenty-first century,42 combined with a corresponding decline in the necessity of humans for military power, then these new conditions could change the very nature of what a state is. The biopolitical raison d’être of the nation-state which emerges in the nineteenth century and becomes truly geopolitical in the twentieth century is premised on the mobilization and securing of a national population.43 The revolutionary states emerge from and rationalize the hyphen of the nationstate as essential both in terms of democratic values and military-economic necessity. What will emerge in the aftermath of such necessities and values is the horizon of alternative futures we must consider.

Section 3: from Bergsonian machines to cunning machines

“Hello,” whispered Montag, fascinated as always with the dead beast, the living beast. . . Montag touched the muzzle. The Hound growled. . . “It doesn’t like me,” said Montag. “What the Hound?” The Captain studied his cards. “Come off it. It doesn’t like or dislike. It just ‘functions.’ It’s like a lesson in ballistics. It has a trajectory we decide on for it. It follows through. It targets itself, homes itself, and cuts off. It’s only copper wire, storage batteries, and electricity. . .

–Fahrenheit 451 A Wiener Filter or The Yellow Peril

Text, letter

Description automatically generated

The equation above is called a Wiener Filter. In mathematical terms, Norbert Wiener used it with a number of other steps to calculate the future. Despite the claims in the first section that the future does not exist, the territory or probable limits of the future do, at least most of the time. What Wiener was representing mathematically was that even with little data on which one would normally make a prediction you can define the space of possibility or in Wiener’s terms the distribution of probabilities even for non-linear or non-existent causal systems. In practical terms it meant that artillery could be automated to shoot where planes were going to be rather than where they were when the radar signal returned. The mathematicians did this by considering and then modeling the limits of the system being predicted.

It is impossible to predict what an individual pilot will choose to do but it is possible to describe in mathematical terms what a pilot is capable of doing and similarly what a plane with a particular maximum velocity was capable of doing. The predictions made by the Wiener Filter allowed the artillery guns to fire in a significantly more restricted area with minimal radar information rather than just blasting away at the sky in hopes of hitting something. According to Steve Heims, more predictable systems like the V2 rocket could be successfully targeted and shot down 99 out 100 times by the Wiener Filter.44 The seemingly ‘dumb’ artillery could adjust or read their environment and work in concert adjusting further as information from rudimentary radar systems or the assemblage of radar, operators, and canons. The artillery was in the most basic sense becoming aware.

Wiener’s ‘solution’ which made unpredictable systems targetable was another version of what Claude Shannon very soon after solved for communication with his theory of information. Shannon developed the techniques which allow the efficient transmission of information through imperfect media such as telephone lines by similarly modeling the range of noise and compensating or repeating signal to exceed it. Rather than predicting the noise which is impossible because of its chaotic nature Shannon was able to treat all noise as a system rather than individual events of noise such that the range of noise could stand in place of the individual incidents. In both cases, the breakthroughs of Wiener and Shannon created the world of computers, the internet, automation, and machine learning we now inhabit. All systems after Wiener and Shannon could be treated in some sense as information and communication problems to be solved.45

After his experience in the war and further experiments after, Wiener began to describe a more general principle of informatics and machine technology. What he would later call the last science or the science of everything saw every system, whether physical, chemical, mechanical, biological, as computable and alterable. Following this insight Wiener believed humanity was at the cusp of something unprecedented. In 1948, he declared that a new kind of machine had emerged in the history of human evolution. Although still rudimentary, cybernetic machines of the 1940s were capable for the first time of simple self-regulation based on interactions with their external environment. Unlike thermodynamic machines that sought equilibrium, cybernetic machines could pursue a goal or objective in the world. Wiener referred to these new machines as Bergsonian machines, after the French Philosopher Henri Bergson and his idea of elan vital.46 For Wiener, machines possessed for the first time the spark of a vital impulse. While these Bergsonian machines have so far disappointed the expectation of those hoping for and others fearing human-like artificial intelligence, machinic intelligence, whether learning algorithms or self-steering and targeting weapons systems, have exploded into a variable rainforest ecology of new species.

What is important for the purposes of this article is that Wiener was able to demonstrate that very simple feedback mechanisms could produce complex emergent results or what ‘appeared’ like intelligence even if the machines were not conscious of that intelligence. What I explore throughout the rest of the section is how even small advances in machine intelligence could produce dramatic changes in what we think of now as human dependent drones. Already AI platforms have the capacity to strategize and win complex games like Go, AI via drones have the capability to target or execute operations on their own, robots can 3D print and construct other robots, that is, a simple form of reproduction. The only thing missing is what in philosophical terms we call will or desire. However, the insight from Wiener is that the difference between rudimentary will and a command code is insignificant in effect if a feedback exists between the machine and the external environment which can shape or direct the now desiring machine. To put it somewhat simply, we do not need human general intelligence for robots to change the world and geopolitics; the world could change overnight if mechanical life emerged or was released into the wild and was as sophisticated, resilient and procreative as the cockroach.

We are already experiencing the burgeoning capability of cunning machine. If one considers to the underlying political and economic pressure to move away from human combatants not unlike the globalization of the labor market more broadly, the incentives for innovations continuing are difficult to deny.47 Even before 9/11 combat was becoming too costly in both economic and political terms and therefore required an alternative in order for empires and smaller states to stay afloat in lean times. The globally modeled War on Terrorism brought the crises of military expenditure still lingering after the Cold War to a head. However, the drive to cut costs and political liability has not stopped at the battlefield. Attempts to remove humans further and further from the battlefield follows this inhuman trajectory into the arena of decision-making and contestation.48 The reliance on algorithmic warfare creates the opportunity for increasingly unilateral warmaking. Cunning machines, not machines of reason but machines capable of hunting and trapping, represent the possibility of the command and control developed for nuclear arsenals with the micro-scale to pursue and kill of assassins or special forces.49

This process of automating politics as well as war creates further incentive for the development of increasingly autonomous machines and actually undermines security as it makes the capacity to wage war cheaper and more accessible around the planet. The drive for more autonomous machines is heading toward ‘sustainable warfare’, a kind of weird parallel to sustainable development. Like sustainable development, sustainable warfare really makes warfare endemic rather than providing a real alternative to war making. So war as we know it may be coming to an end but a permeating martial transformation is just getting started.

As the transformation in domestic policing, military planning, and combat takes place, the tactical landscape will also mutate, amplifying the corrosive effects on politics. A security complex indifferent to the differences between the war and policing, battlefield and lifeworld will increasingly target Internet exchanges, servers, monitoring, and listening stations, civilian communication and media infrastructure. As populations cease to matter to states, either those attacking or being attacked, infrastructure becomes the whole of the strategic landscape. Also, as the size of autonomous machines shrink, the incentive for hacking or indiscriminate attacks such as electromagnetic pulse attacks will become more desirable as drone to drone or human to drone combat will be prohibitively difficult.

After all, how reliably can one expect to track a drone the size of a dragonfly or as low to the ground as a snake? Thus, we face the possibility of a confluence of unaccountable decision-making, even the absence of human decisions at all with the saturation of living spaces with the dissonance of combat, killing and destruction. Rather than simply automating the ‘hunt’ for enemies chosen by political processes, already reliance on things like signature strikes signal a shift to the automation of the political decision of who is and is not an enemy in the first place. This shift from what Human Rights Watch has termed ‘human on the loop’ practices to ‘human out of the loop’ practices pushes the posthuman50 character of war further into the nightmare zone in which everything is an object to be targeted but never encountered or recognized. An algorithmic cunning replaces enmity and martial judgment in the recognizable terms.

Furthermore, in a future with a receding human public and that states are indifferent to moral catastrophe, these changes in machine capability and autonomy as well as the deployment of such machines would not be political events. Switches would be flipped by military planners or software developers along technical rather than ethical or political lines. Lewis Mumford referred to this as the advent of ‘post-historic’ humanity in which a process that ‘began innocently by eliminating fallible human impulses from science will end by eliminating human nature from the whole world of reality. In posthistoric culture life itself is reduced to predictable, mechanically conditioned and controlled motion, with ever incalculable – that is, every creative – element removed’.51 I would add that what emerges in its place is a mechanic creativity allowed to thrive within the constraints of a limited martial logic. If we continue on this trajectory practicality could replace both strategic and moral thinking.52 Further, the fora in which such decisions will be made (if at all) are likely to be constricted as secrecy predominates in an environment charged by a dangerous mix of paranoia and real danger.

#### The expansion of even “friendly AI” builds a bridge to a post-human hellscape, where geopolitics is structured around techno-dystopic racialized violence

Grove 20 – Associate Professor of Political Science and Director of the Hawai’i Research Center for Future Studies at the University of Hawai’I at Mānoa, PhD in International Relations at Johns Hopkins University [Jairus, “From geopolitics to geotechnics: global futures in the shadow of automation, cunning machines, and human speciation,” International Relations 2020, Vol. 34(3) 432 –455, DKP]

In Cavell’s account the general economy of violence that characterized the sadism of slavery could return again but differently. Rather than a great chain of being or the superiority or some races over others, the very concept of violence as a category distinct from force or change could be lost. Although extreme, can we not already see this transformation underway in the extreme forms of instrumentality that characterize decisions regarding collateral damage, counter-value targeting, or economized discourse on immigration and refugees?56

More than a transformation of moral economies, the automation of humans and the augmentation of humans, represents the possibility of making physical and habitual what is now normative and discursive. Resembling Cavell, David Roden proposes what he calls the disconnection thesis, in which Cavell’s nightmare scenario unfolds only among some humans for whom the sentimentality of bodies, reproduction, and human connection impede further evolution of the species.57 Whether it is those who dream of a singularity in which human consciousness becomes digital or one of the U.S. veterans who have had mood altering computer chips implanted into their brains, some humans will increasingly alter or altered their brain-body networks to alter their cognitive and perceptive capacities.58

During the summer of 2018 researchers at the University of Washington and Carnegie Mellon successfully networked three humans via EEGs and transcranial magnetic stimulation. The three individuals were able to collaborate to play a simple video game resembling Tetris.59 The participants were able to communicate and sense each others’ thoughts without the use of language or even being in the same room. Similar experiments have successfully sent text message from one side of the country to the other making at least a limited version of brain to brain communication a reality.

In the dark light of geopolitics one can imagine what today takes the form of geographic and class divides in connectivity and medicine taking the form of different classes and territories of consciousness and communication. Given the already gossamer fragility of international solidarity and trans-border empathy one can further imagine cyborg cultures quite literally tuning out of the world left behind. Roden’s disconnection thesis argues that as these new forms of networks and augmentation develop so too will cultures and moral awareness diverge.60 For those without the need or desire to use oral language accelerating the pace of technological change within new kinds of communities it is not difficult to follow Cavell to the precipice of his posthuman horror. While the biological racial fictions of colonialism, apartheid, and settler-colonialism still hold on in the face of overwhelming scientific evidence to the contrary how much more would real material differences in forms of life accelerate existing geopolitical violence?61 Even the beginnings of disconnection could intensify the already renewed fights between extractive industrial modernity and those indigenous communities fighting for their ancestral lands and ways of life. And what of the swelling numbers of multi-generationally unemployed masses who will lack the capital to upgrade? One can imagine class no longer being marked by linguistic markers or knowledge of wine but the physical ability to interface with white color working spaces. More and more companies have already begun microchipping their employees for security and tracking crossing the threshold of the skin in the process of making labor.62 The digital divide in labor of who can and cannot telecommute is already determining the patterns of employment and unemployment in the first 6 months of COVID-19 shutdowns. The speciation of interfaces and sensory capabilities could amplify the already growing trend.63

The point of Roden and Cavell’s thought experiments are to show that such a separation would be more than just a return to or intensification of racial or class divisions. Instead the very embodied character of moral appreciation, the shared languages and cultures, the perceptive capacities to experience beauty or tragedy could be altered to the point that the diffracted species of once human beings would live in a state more closely resembling that of Homo sapiens 100,000 years ago in which there were multiple species of upright anthropoids and none of them could live without the fear of predation by other non-human animals or each other. The medium of encounter fundamentally altered. However, in this speculative history of the future the divergence would not have been by happenstance but to lock in interests and geopolitical advantage. Difference by design.

This may all seem too far-fetched. How could humans lose their most basic capacity for socio-emotional intercourse? I want to argue that things need not change that dramatically to see the beginnings of such a divergence. One can look around a crowded bus filled with people each glued to their smart phone, tables of families at restaurants each separated by their individuated devices or an office filled with screens each telecommuting the pilot to a drone in the field thousands of miles away to see the beginnings of such a speciation. Or we could return to the beginnings of international thought, the first moments of European geopolitics and remember its multispecies beginnings when just 50 years after the arrival of Christopher Columbus Bartolomé de las Casas pleaded with the Castille thrown to recognize the soul and therefore humanity of the ‘Indios’. Instead, of course, the extermination continued which treated the people of the Americas as ‘piles of dung in the middle of the road’.64 Geopolitics was in some sense founded on the premise of many human species rather than one human species.65 The inability for so many to see their human counterpoint at a moment of encounter in the new world speaks to the precedent of a truly dark enlightenment. That is, technological and martial advance without any corresponding moral awareness. A new such speciation that included the inability to even speak to one another much less recognize some common heritage or shared community of value would make the efforts of Las Casas and those who continue to fight against the finishing of the settler-colonial project entirely potentially invisible.

Conclusion: geotechnics and a planetary state of war

when utilized to perform work highly organized collective enterprises, I shall call it the ‘labor machine’: when applied to acts of collective coercion and destruction, it deserves the title, used even today, the ‘military machine’. But when all of the components, political and economic, military, bureaucratic and royal, must be included, I shall usually refer to the ‘megamachine’.

Lewis Mumford66

Mumford’s megamachine is instructive. What he is describing is an ancient past where the political, economic, military, bureaucratic, royal all converged to form the empires of the Aztecs and Egyptians. What I have in mind is this same convergence in the future but with a twist. The ‘royal’ may come to relate to the economic and political and the military such that what we understand as politics becomes indiscernible. The megamachine of the future presented here could better be called geotechnics. The global mobilization of people, the conditions of competition and coercion, who and what was doing the competing and their relations would be fundamentally altered. The relations would no longer be linguistic or even sensory in the way that humans hold experience in common even if their subjectivizations of that experience, that is the phenomenology of body of experience, may be singular.

In a world of possible full automation, cunning machines, and posthuman speciation the equality of Hobbes’ state of nature as well as the state of war is no longer operable. If these metaphors ever did more than underwrite one particular logic of international politics they would in the future be meaningless as the people of the leviathan, the metric by which order or disorder is experienced may no longer exist in the mortal meat suit so much of political theory rests. In some sense the enmity of war in the Hobbesian sense rested on the equal finitude of every mortal human as well as the general desire to live something we could agree was a good life free from the ever presence of murder. As Hobbes was recontextualized to imagine an international system of states similarly a sense of mortal equality was present. The ability to be killed underwrote the decision to kill.

And what of the English school’s society of states? If such sociality persisted amongst neo-authoritarian states without nations what dark vision of order would that be? Basic assumption about the international system even those based on other less dour models than a realist anarchic system similarly presumes some equality of communication, the good, or the desire to live in a particular way. The material limits of homo sapiens, the necessity of water, air, food, family, and sociality underwrites everything from deterrence to diplomacy. A geotechnical system populated with intelligent things and governed by nation-less states and further populated by incommensurate branches of humanity fundamentally alters the limits and therefore the possibilities of global life and order. By what rules those relations would be conceptually governed, that is, how we could describe such a planetary system would have to reach for ways of thinking well beyond even the most radical or critical theory of international relations. In some ways efforts to consider what geopolitics looked like at the peak of the Atlantic slave trade or during the first 100 years of the conquest of the Americas more closely resemble what could become of a posthuman planet than the highly rationalized cosmopolitan institutions of the United Nations.67

Just as IR is finally accepting that global politics is inhabited by more than just nation-states that is, non-state actors, we now must also come to grips with the fact that global politics is no longer populated solely by humans and could in the future not even be dominated by humans. What new forms of intelligence mean for the transformation of peace and security is murky at best. What is clear is that a theory of automation as mere means is no longer sufficient to understanding the vast infrastructure of machines and sensory data collecting systems and the new collaborations those systems will create for former humans with which we are already beginning to share our planet. The horizon of such a technical transformation has to be thought alongside the normative upheaval and radicalization of global enmity taking place simultaneously with the transformation of the very mechanics of political and military action.

To consider a future where the actors, relations, and order of the planet could be fundamentally reconfigured by the gradual accretion of robots, algorithms, bodily and political modification poses to us the possibility of systemic change well beyond whether the world will be unipolar or multipolar. No one of these trajectories will be total or play out as described here but all of these trajectories present us with the real possibility of altering the basic rules of human planetary existence from a geopolitical condition to one that is increasingly geotechnical. Hundred years from now, what new grammar of planetary relations could be prepared to describe such a world?

### Link – AI = Whiteness

#### The fantasy of AI is the fantasy of Whiteness – a futuristic world where white servants serve white masters – the aff cements the domination of the future by an Anglo-European worldview of White Supremacy that conflates Whiteness with intelligence

Cave and Dai 20 – \* Leverhulme Centre for the Future of Intelligence, University of Cambridge, Cambridge, UK, \*\* Leverhulme Centre for the Future of Intelligence, University of Cambridge, Cambridge, UK, [Stephen, Kanta, “The Whiteness of AI,” Philosophy & Technology volume 33, pages685–703 (2020), DKP]

This paper focuses on the fact that AI is predominantly portrayed as white—in colour, ethnicity, or both. We first illustrate the prevalent Whiteness of real and imagined intelligent machines in four categories: humanoid robots, chatbots and virtual assistants, stock images of AI, and portrayals of AI in film and television. We then offer three interpretations of the Whiteness of AI, drawing on critical race theory, particularly the idea of the White racial frame. First, we examine the extent to which this Whiteness might simply reflect the predominantly White milieus from which these artefacts arise. Second, we argue that to imagine machines that are intelligent, professional, or powerful is to imagine White machines because the White racial frame ascribes these attributes predominantly to White people. Third, we argue that AI racialised as White allows for a full erasure of people of colour from the White utopian imaginary. Finally, we examine potential consequences of the racialisation of AI, arguing it could exacerbate bias and misdirect concern.

Overall, I construe race, racialization, and racial identities as on-going sets of political relations that require, through constant perpetuation via institutions, discourses, practices, desires, infrastructures, languages, technologies, sciences, economies, dreams, and cultural artefacts, the barring of nonwhite subjects from the category of the human as it is performed in the modern west.

Alexander G. Weheliye (Weheliye [2014](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR63), 2)

Technology as an abstract concept functions as a white mythology.

Joel Dinerstein (Dinerstein 2006, 570)

Introduction

It is a truth little acknowledged that a machine in possession of intelligence must be white. Typing terms like “robot” or “artificial intelligence” into a search engine will yield a preponderance of stock images of white plastic humanoids. Perhaps more notable still, these machines are not only white in colour, but the more human they are made to look, the more their features are made ethnically White.[Footnote1](https://link.springer.com/article/10.1007/s13347-020-00415-6#Fn1) In this paper, we problematize the often unnoticed and unremarked-upon fact that intelligent machines are predominantly conceived and portrayed as White. We argue that this Whiteness both illuminates particularities of what (Anglophone Western) society hopes for and fears from these machines, and situates these affects within long-standing ideological structures that relate race and technology.

Race and technology are two of the most powerful and important categories for understanding the world as it has developed since at least the early modern period. Yet, as a number of scholars have noted, their profound entanglement remains understudied (Sinclair [2004](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR55); de la Peña [2010](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR18)). There are a number of possible reasons for this—and, as Bruce Sinclair writes, “racial prejudice dominates all of them” (Sinclair [2004](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR55), 1). They include the lack of first- or secondhand accounts of the role of people of colour in the development and use of technology; persistent stereotypes about technology as the province and product of one particular racial group—White people; and the persistent tendency of members of that group, who dominate the academy in the US and Europe, to refuse to see themselves as racialised or race as a matter of concern at all.

This lack of scholarly attention is surprising because, as Michael Adas elucidated in 1989, the idea of technological superiority was essential to the logic of colonialism. Not only was superior weaponry and transportation (etc.) necessary for large-scale conquest and control of foreign territory, it was also part of its justification: proof that White Europeans were an advanced civilisation with a right to rule over others (Adas 1989). Fortunately, this lack of attention is increasingly being remedied, and the relationship between race and technology is beginning to garner the kind of attention that has since the 1970s been given to gender and technology, following the pioneering work of Donna Haraway, Sandra Harding, and Evelyn Fox Keller (Haraway 1991; Harding 1986; Keller 1985). This includes attention to this century’s ubiquitous digital technologies. In 2006, Lisa Nakamura asked, “How do we make cyberculture studies a field that as a matter of course employs critical race theory and theories of cultural difference…?” (Nakamura 2006, 35). Since then, a number of significant works have attempted to do just that, including Safiya Noble’s Algorithms of Oppression and Ruha Benjamin’s Race After Technology (Noble 2018; Benjamin 2019).

This paper aims to contribute to this body of literature on race and technology by examining how the ideology of race shapes conceptions and portrayals of artificial intelligence (AI). Our approach is grounded in the philosophy of race and critical race theory, particularly the Black feminist theories of bell hooks, Sylvia Wynter and Alexander G. Weheliye (hooks [19921997](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR39); Wynter [2003](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR67); Weheliye [2014](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR63)), and work in Whiteness studies, including that of Richard Dyer, Joe R. Feagin, and Ruth Frankenberg (Dyer [1997](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR20); Feagin [2013](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR23); Frankenberg [1997a](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR26)). In 2006, Feagin coined the term “white racial frame” to describe those aspects of the Anglophone Western worldview that perpetuate a racialised hierarchy of power and privilege (Feagin [2006](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR22)). In his words, “the white racial frame includes a broad and persisting set of racial stereotypes, prejudices, ideologies, interlinked interpretations and narratives, and visual images” (Feagin [2013](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR23), xi). Although it reached its peak in the age of colonial expansion, this framing persists: “Today, as whites move through their lives, they frequently combine racial stereotypes and biases (a beliefs aspect), racial metaphors and concepts (a deeper cognitive aspect), racialised images (the visual aspect), racialised emotions (feelings), interpretive racial narratives, and inclinations to discriminate within a broad racial framing” (Feagin [2013](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR23), 91). In essence, this paper examines how representations of AI reflect this White racial frame.

One of the main aims of critical race theory in general, and Whiteness studies in particular, is to draw attention to the operation of Whiteness in Western culture. The power of Whiteness’s signs and symbols lies to a large extent in their going unnoticed and unquestioned, concealed by the myth of colour-blindness. As scholars such as Jessie Daniels and Safiya Noble have noted, this myth of colour-blindness is particularly prevalent in Silicon Valley and surrounding tech culture, where it serves to inhibit serious interrogation of racial framing (Daniels [2013](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR16), [2015](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR17); Noble [2018](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR48)). Hence the first step for such an interrogation is, in Richard Dyer’s term, to “make strange” this Whiteness, de-normalising and drawing attention to it (Dyer [1997](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR20), 10). As Steve Garner puts it, the reason “for deploying whiteness as a lens is that it strips a normative privileged identity of its cloak of invisibility” (Garner [2007](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR31), 5). This is our primary intention in examining intelligent machines through the White racial frame.

In the next section of this paper, we first lay out current evidence for the assertion that conceptions and portrayals of AI—both embodied as robots and disembodied—are racialised, then evidence that such machines are predominantly racialised as White. In the third section of the paper, we offer our readings of this Whiteness. Our methods are qualitative. As de la Peña writes: “Studying whiteness means working with evidence more interpretive than tangible; it requires imaginative analyses of language and satisfaction with identifying possible motivations of subjects, rather than definitive trajectories of innovation, production, and consumption” (de la Peña [2010](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR18), 926). We offer three interpretations of the Whiteness of AI. First, the normalisation of Whiteness in the Anglophone West can go some way to explaining why that sphere’s products, including representations of AI, are White. But we argue that this argument alone is insufficient. Second, we argue that to imagine an intelligent (autonomous, agential, powerful) machine is to imagine a White machine because the White racial frame ascribes these attributes predominantly to White people. Thirdly, we argue that AI racialised as White allows for a full erasure of people of colour from the White utopian imaginary. Such machines are conceived as tools that will replace “dirty, dull, or dangerous” tasks (Murphy [2000](https://link.springer.com/article/10.1007/s13347-020-00415-6#ref-CR46), 16), including replacing human interactions that are considered metaphorically dirty: White robot servants will allow the White master to live a life of ease unsullied by interaction with people of other races.

### Alt – Paradigm Shifts

#### The alternative is to vote negative to refuse the 1AC’s prescriptions in favor of paradigm shifting experiments that center de-racialization against white supremist techno-futurity

Mbembe 22, interviewed by TORBJØRN- Achille is a member of the staff at the Wits Institute for Social and Economic Research (WISER) at the University of the Witwatersrand, visiting appointment at the Franklin Humanities Institute at Duke University PhD in History at the Sorbonne, DEA in Political Science at the Instituts d'études politiques [Achille, “Thoughts on the Planetary: An Interview with Achille Mbembe,” Decolonizing the Neoliberal University – Law, Psychoanalysis and the Politics of Student Protest, Interview first Conducted in 2018, Re-Published in this book and Edited by Jaco Barnard-Naudé, Professor of Jurisprudence in the Department of Private Law, University of Cape Town, DKP]

TORBJØRN: Some would then argue that there are still colonial or postcolonial structures operating in the neoliberal project. Would you say that there is then still a genocidal potential?

MBEMBE: Perhaps more than at any other moment in our recent past, we are increasingly faced with the question of what to do with those whose very existence does not seem to be necessary for our reproduction; those whose mere existence or proximity is deemed to represent a physical or biological threat to our own life.

Throughout history, and in response to this question, various paradigms of rules have been designed for human bodies deemed either in excess, unwanted, illegal, dispensable, or superfluous. One historical response has consisted in putting in place spatial exclusionary arrangements. Such was, for instance, the case during the early phases of modern settler or genocidal colonialism in relation to Native American reservations in the United States, island prisons, penal colonies such as Australia, camps and even Bantustans in South Africa.

Two late modern examples are Gaza and the encaging of migrant children in the context of the ongoing planetary war on mobility. Gaza and the encaging of migrant children might well prefigure what is yet to come.

In the case of Gaza, control of vulnerable, unwanted, surplus or racialized people is exercised through a combination of tactics, chief among which is modulated blockade or molecular strangulation. A blockade prohibits, obstructs, and limits who and what can enter and leave the Strip. The goal might not be to cut the Strip off entirely from supply lines, infrastructural grids or trade routes. The Strip is nevertheless relatively sealed off and strangulated in a way that effectively turns it into an imprisoned territory. Comprehensive or relative closure is accompanied by periodic military escalations and the generalized use of extra-judicial assassinations. Spatial violence, humanitarian strategies, and a peculiar biopolitics of punishment all combine to produce, in turn, a peculiar carceral space in which people deemed surplus, unwanted, or illegal are governed through abdication of any responsibility for their lives and their welfare.

But as I have intimated, there is another, early twenty-first century example, which consists in waging new forms of wars, which can be called wars on speed and mobility. Wars on mobility are wars whose aim is to turn discounted bodies into borders. They generally begin by turning into dust and piles of ruins the milieux as well as means of existence and survival of vulnerable people thus forced to flee in search of a refuge. These kinds of wars against milieux and ecosystems rendered toxic and uninhabitable are not accidental. They are methodically programmed and conducted. Such milieux and ecosystems are sites of experimentation of new weapons. The targets of this kind of warfare are not by any means singular bodies, but rather great swathes of humanity judged worthless and superfluous.

TORBJØRN: Can you elaborate a bit more on that?

MBEMBE: Let me put it differently. Nowadays the project is to render as many people as superfluous as possible. The novelty is the production at a massive scale of discounted bodies, a residual humanity that is akin to waste. With our entry into a new climatic regime, this process will only intensify. As the global conditions for the production and reproduction of life on Earth keep changing, population politics at a planetary level will increasingly become synonymous with excess and waste management. In terms of the future geopolitics of our world, populations will be more and more treated not only in the Darwinian terms of sexual selection, but also within a utilitarian and biophysiologico-organic framework.

Take a place such as South Africa where a very high percentage of the total population is unemployed. This is not because there is no “work as such”. This is not because people do not want to work.

In fact, here as elsewhere in Africa and other parts of the global South, almost everything remains to be done. The amount of work needed in order to create a better life for all is incalculable. But the structure of the economy doesn’t really need us all. Nor does it need our time. It doesn’t really need every single body, all of our muscles or energies or even the bulk of our social and collective intelligence. And this will be more and more the case in the future, as we move to a phase of human history in which only that which is computable counts. As we speak, many bodies already fall beyond the scope of calculation. Unless we reinvent the terms of what counts and, in the process, resignify what value stands for as well as the procedures of assigning value, of measuring value, of exchanging value, things won’t change. These are some of the key questions any decolonization project worthy of its name has to address if the injunction to decolonize is to be more than a mere ideological phantasm.

TORBJØRN: Back to the debate on decolonization: There was a heated debate in Norway, during the summer of 2018, about the decolonization of academia. How can #RhodesMustFall in South Africa be relevant for universities worldwide?

MBEMBE: The need for a critical re-appraisal of the relationship between knowledge, power and institutions is not an exclusively South African preoccupation. In South Africa, the term “decolonization” is one way in which concerns about “deracialization” are expressed. The imperative to “deracialize” is also valid for Europe, for the United States, for Brazil and for other parts of the world. The emergence of new varieties of racism in Europe and elsewhere, the reassertion of global white supremacy, of populism and retro-nationalism, the weaponization of difference and identity are not only symptoms of a deep distrust of the world. They are also fostered by transnational forces capable of making that same world inhospitable, uninhabitable and unbreathable for many of us.

All of this is of course important. But part of what truly frightens me is the recolonization of various fields of knowledge by all kinds of determinisms. What frightens me is the active confusion between knowledge and data, the reduction of knowledge to information. It’s the idea that the world is a matter of numbers and the task of knowledge is to handle quantities. Furthermore, it’s the belief that the best way to generate information is with computers and that which is not computable does not exist. It’s the creeping sense that the computer is our new brain.

In such a context, “to decolonize” must start from the assumption that knowledge cannot be reduced to computational information processing. There is therefore a massive need to recover the ability to think. And for me, knowledge is on the verge of being reduced to a reified metaphor. As a result, we are witnessing almost everywhere a tremendous impoverishment of thought.

TORBJØRN: In the Norwegian debate on decolonization, one of the demands from the young student activists was to have a more global curriculum. What’s your take on that?

MBEMBE: Right now we are literally assaulted by forces that want to retreat from the world and rebuild a certain idea of the nation, of the community, of identity and difference that is premised on the capacity to determine who belongs, who must be excluded and shouldn’t belong, who can settle where, why, how and for how long. Such forces are preoccupied with the erection of all kinds of borders and how they must be policed. They buy in the dream of a “pure” community, a community of people who look the same and act the same. They are sustained by the belief that we can go back to the past because the past is, in truth, our future. Let me just call it the dream of apartheid.

There is another dream, maybe not unrelated to the first. As I have just highlighted, it’s the dream of reducing knowledge to calculation by computers. In fact, it’s the dream of reducing everything to calculation and explaining everything from within biological and neurological strictures. A planetary library, archive or, for that matter, curriculum is one whose strategic project is to understand the incalculable and the incomputable. It can only be based on the will to go beyond cognitivism. I am not against calculation or mathematics. Nor am I against computation. I am simply saying that neither calculation, nor mathematics, nor computation are sufficient for explaining life. It can’t be enough to do correct mathematics. Once we have done correct mathematics, we still need to determine what this exercise implies for the life of beings. Pushed to a certain level, correct mathematics alone impoverish thought and destroy theory.

Otherwise, we only have one world. We might dream about colonizing Mars or Venus or other unknown planets in the future, but for the time being that is not part of our actuality. We only have one world, one solar system and for this world to last as long as possible and for this solar system to not calcinate life as such, we need to become a bit more intelligent and wiser. This Earth is our shared roof and our shared shelter. Sharing this roof and shelter is the great condition for the sustainability of life on Earth. We have to share it as equitably as possible. And in any case our lives, here and elsewhere, have become so entangled, that trying to separate them will require a tremendous amount of violence. It will require a lot of violence to disentangle humanity from itself and from the rest of the living species. And therefore, especially in the face of the kinds of ecological challenges we face, it is absolutely important to reinvent forms of life in common that go beyond the requisite of the nation state, ethnicity, race, religion, and so on. A curriculum that takes seriously such concerns is absolutely necessary.