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#### Incorporating new ethics standards on AI causes the US to scale back development and transition to autonomous weapons – that makes every conflict worse

Yoo 17

(John, Emanuel S. Heller Professor of Law, University of California, Berkeley, School of Law; Visiting Scholar, American Enterprise Institute, “Embracing the Machines: Rationalist War and New Weapons Technologies”, California Law Review, Vol. 105, Issue 2) DB

Governments and scholars are not always clear about when such attacks meet the legal standards for an armed attack or something less. For example, the new United States Law of War Manual, issued by the Department of Defense in 2015, declares that the existing laws of war should apply to what it calls “cyber operations.”11 But it then concedes that the rules here are “not well-settled” and are “likely to continue to develop.”12 The United States even takes the position that it may not have a position, as the manual declares that it does not “preclude the [Defense] Department from subsequently changing its interpretation of the law.”13

This Essay argues that efforts to constrain new military technologies with ex ante per se rules, rather than ex post reasonable regulation, are not only doomed, but dangerous. History is littered with proposals to stop advances in weapons. Medieval leaders tried to ban crossbows, early artillery, and firearms because they violated chivalry and honor.14 During World War I, nations argued over whether international law prohibited airplanes from bombing targets or submarines from sinking ships without warning.15 But by the end of World War II, the United States used atomic bombs to end the war against Japan.16 International agreements, such as the League of Nations and the Kellogg-Briand Pact, failed to stop the Axis. History tells us that restraint arrives through deterrence, not law or morality. In World War II, the Allies and Axis stockpiled ample arsenals of chemical weapons, but did not use them for fear of retaliation.17 During the Cold War, mutually assured destruction ultimately led both superpowers to agree to limits on, and then reductions of, nuclear weapons.

International law, rightly understood, does not prohibit the use of these new weapons. The United States will not stop China from stealing its government personnel databases by appealing to common values, but by deploying equally effective offensive and defensive cyber weapons. Europeans will not force the United States to limit its drone campaign against terrorist leaders through legal arguments, but they could pressure Washington by refusing to cooperate with intelligence sharing and joint operations. In fact, limiting, and especially prohibiting, the use of robotic and cyber weapons could have perverse effects on the very goals of international law. If nations cannot employ new, more precise weapons, they will have to resort to traditional conventional warfare, using human soldiers and pilots in larger numbers with more destructive weapons. In addition to causing greater destruction, limits on new weapons will discourage nations from using force when the international system needs it most: to stop terrorism, human rights disasters, nuclear proliferation, and aggression. Perversely, banning new weapons out of a vague desire to make war harder to start will make war more destructive and harmful to the innocent—the very antithesis of the laws of war.

#### Particularly, European regulatory standards into US AI policy hampers innovation and development of military AI

Castro and McLaughlin 19

(Daniel, and Michael, “Ten Ways the Precautionary Principle Undermines Progress in Artificial Intelligence”, <https://itif.org/publications/2019/02/04/ten-ways-precautionary-principle-undermines-progress-artificial-intelligence/>) DB

PRECAUTIONARY PRINCIPLE VS. INNOVATION PRINCIPLE

While some people advocate for an almost completely hands-off approach to regulating new technologies, those who recognize that there is a legitimate role for government take two distinct approaches toward action: the precautionary principle and the innovation principle.

The precautionary principle is the idea that if a technological innovation may carry a risk of harming the public or the environment, then those proposing the technology should bear the burden of proving it will not. If they cannot, governments should limit the use of the new technology until proven safe. Those who support the precautionary principle, which calls for government intervention even when there is no clear evidence of tangible and imminent threats of harm, adhere to the cliché it is “better to be safe than sorry.”4 For some technologies, such as nuclear power, the principle makes sense, because the risk of getting it wrong can be catastrophic. However, for most areas of innovation, the precautionary principle leads to more harm than good because it generates hypothetical worst-case scenarios that incorrectly suggest technological advancement presents severe and irreversible threats.5

In contrast, the innovation principle holds that because the overwhelming majority of technological innovations benefit society and pose modest and not irreversible risks, government’s role should be to pave the way for widespread innovation while building guardrails, where necessary, to limit harms. The innovation principle recognizes that market forces, tort law, existing laws and regulations, or light-touch targeted interventions can usually manage the risks new technologies pose. The principle does not, however, argue for a ban on regulation of new technologies. Instead, it advocates for a case-by-case approach, suggesting regulations only in those cases where there is a reasonable expectation that other forces will not suffice and where the potential harms are more than minor. Moreover, in cases where regulations are needed, it stresses the importance of designing regulatory interventions and structuring regulatory enforcement in ways that minimize the harm to innovation, while still achieving the regulatory goals. Finally, it focuses more on ensuring that penalties punish bad actors who cause harm than creating regulations that limit beneficial and benign uses.6 In other words, speculative concerns should not hold back concrete benefits.

Perhaps more so than any government, the U.S. federal government adhered to the innovation principle in its early regulation of the Internet, and this approach fostered a successful era of innovation and growth in the U.S. digital economy.7 In contrast, Europe’s more heavy-handed approach limited and continues to limit digital innovation. For example, many jurisdictions in Europe have restricted the use of ride-sharing apps like Uber because of concerns about the impact on the local taxi industry.8

Given AI’s nascent state of adoption—less than half of businesses worldwide have embedded even one AI-enabled capability into their business process—it is crucial that public policy in all nations spur its development and adoption instead of unnecessarily hindering it.9 Consequently, if policymakers want their nations to achieve the full benefits of AI, they should base their actions on the innovation principle to foster it rather than use the precautionary principle to limit, delay, and constrain its progress.10

Unfortunately, concerns about potential AI harms lead some individuals and groups to advocate for public policies based on the precautionary principle. As a case in point, Elon Musk in 2017 told the world that AI "is a fundamental risk to the existence of civilization” that represents "a rare case where we need to be proactive about regulation instead of reactive."11 He also warned that adopting AI is “summoning the demon” and predicted that these advances could create “an immortal dictator from which we can never escape.”12 Recently Musk has since dialed back his warnings, predicting that AI will not kill us, but only cage us in zoos.13

It is troubling that some people take Musk seriously, but because they do, it is important to rebut such nonsense: Musk is completely wrong. As Max Versace, CEO of the robotics and computing company Neurala and founding director of the Boston University Neuromorphics Lab has explained, “The likelihood of an AI scientist building Skynet is the same as someone accidentally building the space station from Legos.”14 Likewise, University of Washington AI researcher Pedro Domingos has stated that “The Terminator scenario, where a super-AI becomes sentient and subdues mankind with a robot army, has no chance of coming to pass…”15 Unfortunately, the public is often bombarded with hyperbolic and incorrect statements decrying AI, which make it more difficult for policymakers to oppose policies that would hurt AI adoption and to support policies to enable it.

Thus, it is not surprising that several governing bodies embrace the precautionary principle. The European Parliament adopted a resolution in 2017 that research and commercialization of AI and robotics “should be conducted in accordance with the precautionary principle...”16 And Loubna Bouarfa, a member of the European Union High-Level Expert Group on Artificial Intelligence, has even argued that cultural resistance to AI is a “blessing in disguise.”17 After all, if AI is an existential threat to our species, policymakers should be unrelentingly focused on limiting this horror.

Policies based on the precautionary principle are not cost-free propositions, however. In seeking to eliminate potential risks, they can reduce potential benefits and create new problems and unintended consequences.18 For example, some countries have implemented bans on importing or cultivating genetically modified organisms (GMOs)—plants or animals that have altered genetic code—over fears about their safety.19 This is despite a virtually unanimous scientific consensus that GMOs are perfectly safe.20 Bans on GMOs can not only cause higher food prices but also increased greenhouse gas emissions as more forests become farmland to compensate for the lower yields of non-GMO crops.21 Moreover, research suggests GMOs could have saved thousands of lives that perished from malnourishment in African nations that delayed the approval of GMOs.22 Lastly, the ban on GMOs by many European nations has severely limited incomes for many small-scale African farmers.23

Policies based on the precautionary principle almost always stand in the way of innovations that can help the public, and this report identifies 11 policies that would limit the benefits of AI. The remainder of this report provides an overview of AI, lists policies based on the precautionary principle that threaten AI, and analyzes ten detrimental impacts of such policies. To close, it discusses what governments should do to reduce and rectify cases where AI use could be harmful.

WHAT IS ARTIFICIAL INTELLIGENCE?

AI is a field of computer science devoted to creating computer systems that perform operations characteristic of human intelligence, such as learning and decision making. The term does not imply human-level intelligence and the level of intelligence in any implementation of AI can vary greatly. For example, the intelligence level needed for Roomba vacuum cleaners is significantly lower than what is needed for autonomous vehicles.24 Regardless, the development of better hardware, including faster processors and more abundant storage, large data sets, and more capable algorithms in the last decade have helped AI make significant advancements and unlocked new applications.25

AI’s functions include: a) monitoring, such as rapidly analyzing large amounts of data to detect abnormalities and patterns in transactions; b) discovering, including extracting insights from datasets such as the link between a gene and a disease, and through simulations; c) predicting, e.g., using forecasting models to analyze trends to make predictions or recommendations, such as future crop yields; d) interpreting, such as making sense of patterns in unstructured data such as images, video, audio, and text; and e) interacting, both with helping machines interact with one another and also helping humans more easily interact with computer systems.26

There are a vast and diverse array of uses for AI.27 Early adopters include parts manufacturers using AI to invent new metal alloys for 3D printing; pharmaceutical companies using AI to discover lifesaving drugs; mining companies using AI to predict the location of mineral deposits; credit card companies using AI to reduce fraud; and farmers using AI to increase automation. As the technology progresses, AI will continue to bring significant benefits to individuals and societies.

AI is a “general purpose technology,” meaning, among other things, that it will affect most functions in the economy. In some cases, AI will automate work, thereby boosting productivity. By increasing the level of automation in virtually every sector, leading to more efficient processes and higher-quality outputs, AI is poised to boost per-capita incomes. AI can also complete tasks that it is not worth paying a human to do but that still create value, such as writing newspaper articles to summarize Little League games. In other cases, AI adds a layer of analytics that uncovers insights human workers would be incapable of providing. In many cases, it boosts both quality and efficiency. For example, researchers at Stanford have used machine learning techniques to develop software that can analyze lung tissue biopsies faster and more accurately than a top human pathologist can.28 AI is also delivering social benefits, such as rapidly analyzing the deep web to crack down on human trafficking, fighting harassment online, helping development organizations better target impoverished areas, and reducing the influence of gender bias in hiring decisions. Finally, AI will be an increasingly important technology for defense and national security.

AI POLICIES BASED ON THE PRECAUTIONARY PRINCIPLE

Too often policies based on the precautionary principle fail to strike the balance between addressing actual harms posed by AI and not hindering innovation. This failure not only harms the development and adoption of AI but also distracts policymakers from focusing on more important issues, including both legitimate areas of concern and ways in which policy can proactively support the development and adoption of AI. Such misguided policies treat AI in one of three ways: too dangerous to allow (i.e. bans specific uses of AI); too dangerous unless proven safe (i.e. prohibits the technology without special approval from the government); and too dangerous without strict regulatory interventions (i.e. requires the technology to jump through unnecessary and costly hoops before operators can use the technology). These policies are misguided not because they create regulation, but because they create unnecessary barriers to developing and adopting AI due to exaggerated fears of AI or failures to recognize that existing or more nuanced regulation would address potential issues. For example, it is completely legitimate for policymakers to regulate autonomous vehicles to ensure their safe use. But it is another matter for policymakers to limit autonomous vehicles because of possible job losses. We list 11 examples below of unwise policies based on the precautionary principle—that have either become law or have generated support—and we group them into the aforementioned three categories.

Policies That Treat AI as Too Dangerous to Allow

While many critics advocate that the public should fear future uses of AI, or at least carefully plan their use, the most extreme form of the precautionary principle leads to bans on certain uses of AI.29 Various groups and individuals have called for bans on various AI applications, including lethal autonomous weapons, facial recognition, autonomous vehicles, and delivery robots.30 While bans harm innovation and progress, calls for banning new technology have a long history. In the late 19th and early 20th centuries, there were numerous calls to ban automobiles in towns across the United States and Europe. Some individuals lamented the loss of horse-and-carriage jobs, while others complained that automobiles were stirring dust up and causing illnesses. Others called for a ban on automobiles because they opposed the expense of paving roads or because they wanted to preserve the sanctity of the Sunday stroll.31 And in 1982, one New Jersey town even banned pedestrians from using Sony Walkman audio devices “while crossing a street or jogging along a municipal or county thoroughfare.”32 The town created the ban for safety reasons but ignored that individuals could both listen to music and cross streets safely.

In the early 2000s, privacy advocates called for bans of radio frequency identification (RFID) chips, which use radio waves to transmit data, in several use cases, including on government identification documents.33 These advocates warned that stores, governments, and even terrorists would use RFID to track the movements of individuals. For example, the Electronic Frontier Foundation (EFF) argued that a 2005 U.S. State Department proposal to require RFID chips in passports would turn passports into “terrorist beacons,” stating “that's precisely what they'll become if we allow the State Department to move ahead with this plan.34 While the fears of stores, governments, or terrorists tracking individuals with RFID never materialized, RFID tags are helping manufacturers and retailers increase sales and reduce theft and labor costs. They are also in U.S. passports, expediting the scanning of passports.35 Policies that ban technologies do not allow society to gain the technologies’ potential benefits, and most people understand in hindsight that bans only held back progress.

Banning Lethal Autonomous Weapons

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.

#### US leadership in emerging tech prevents war with Russia and China – goes nuclear

Kroenig and Gopalaswamy 18

(Matthew, Associate Professor of Government and Foreign Service at Georgetown University and Deputy Director for Strategy in the Scowcroft Center for Strategy, and Bharath, director of the South Asia Center at the Atlantic Council, “Will disruptive technology cause nuclear war?”, The Bulletin of the Atomic Scientists, 11/12, <https://thebulletin.org/2018/11/will-disruptive-technology-cause-nuclear-war/>) DB

Recently, analysts have argued that emerging technologies with military applications may undermine nuclear stability (see here, here, and here), but the logic of these arguments is debatable and overlooks a more straightforward reason why new technology might cause nuclear conflict: by upending the existing balance of power among nuclear-armed states. This latter concern is more probable and dangerous and demands an immediate policy response. For more than 70 years, the world has avoided major power conflict, and many attribute this era of peace to nuclear weapons. In situations of mutually assured destruction (MAD), neither side has an incentive to start a conflict because doing so will only result in its own annihilation. The key to this model of deterrence is the maintenance of secure second-strike capabilities—the ability to absorb an enemy nuclear attack and respond with a devastating counterattack. Recently analysts have begun to worry, however, that new strategic military technologies may make it possible for a state to conduct a successful first strike on an enemy. For example, Chinese colleagues have complained to me in Track II dialogues that the United States may decide to launch a sophisticated cyberattack against Chinese nuclear command and control, essentially turning off China’s nuclear forces. Then, Washington will follow up with a massive strike with conventional cruise and hypersonic missiles to destroy China’s nuclear weapons. Finally, if any Chinese forces happen to survive, the United States can simply mop up China’s ragged retaliatory strike with advanced missile defenses. China will be disarmed and US nuclear weapons will still be sitting on the shelf, untouched. If the United States, or any other state acquires such a first-strike capability, then the logic of MAD would be undermined. Washington may be tempted to launch a nuclear first strike. Or China may choose instead to use its nuclear weapons early in a conflict before they can be wiped out—the so-called “use ‘em or lose ‘em” problem. According to this logic, therefore, the appropriate policy response would be to ban outright or control any new weapon systems that might threaten second-strike capabilities. This way of thinking about new technology and stability, however, is open to question. Would any US president truly decide to launch a massive, bolt-out-of-the-blue nuclear attack because he or she thought s/he could get away with it? And why does it make sense for the country in the inferior position, in this case China, to intentionally start a nuclear war that it will almost certainly lose? More important, this conceptualization of how new technology affects stability is too narrow, focused exclusively on how new military technologies might be used against nuclear forces directly. 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 artificial intelligence (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.

## Uniqueness

### Military ai high

#### Military AI development is high – it’s being integrated into all aspects of the military

Nurkin and Konaev 22

(Tate and Margarita, “Eye to eye in AI: Developing artificial intelligence for national security and defense”, <https://www.atlanticcouncil.org/in-depth-research-reports/report/eye-to-eye-in-ai/#defining-ai>) DB

Overview of US military progress in AI

The Pentagon’s interest and urgency related to AI is due both to the accelerating pace of development of technology and, increasingly, the transformative capabilities it can enable. Indeed, AI is poised to fundamentally alter how militaries think about, prepare for, carry out, and sustain operations. Drawing on a previous Atlantic Council report outline, the “Five Revolutions” framework for classifying the potential impact of AI across five broad capability areas, Figure 3 below illustrates the different ways in which AI could augment human cognitive and physical capabilities, fuse networks and systems for optimal efficiency and performance, and usher in a new era of cyber conflict and chaos in the information space, among other effects.38

The DoD currently has more than six hundred AI-related efforts in progress, with a vision to integrate AI into every element of the DoD’s mission—from warfighting operations to support and sustainment functions to the business operations and processes that undergird the vast DoD enterprise.39 A February 2022 report by the US Government Accountability Office (GAO) has found that the DoD is pursuing AI capabilities for warfighting that predominantly focus on “(1) recognizing targets through intelligence and surveillance analysis, (2) providing recommendations to operators on the battlefield (such as where to move troops or which weapon is best positioned to respond to a threat), and (3) increasing the autonomy of uncrewed systems.”40 Most of the DoD’s AI capabilities, especially the efforts related to warfighting, are still in development, and not yet aligned with or integrated into specific systems. And, despite notable progress in experimentation and some experience with deploying AI-enabled capabilities in combat operations, there are still significant challenges ahead for wide-scale adoption.

#### The DoD’s focused on AI integration and development now

Horowitz and Kahn 22

(Michael C and Lauren, “Why DoD’s New Approach to Data and Artificial Intelligence Should Enhance National Defense”,

The ability of the United States to compete in the 21st century depends on U.S. leadership in data and artificial intelligence (AI). In response, the Department of Defense (DoD) is taking a new and much-needed approach to U.S. defense efforts in data and AI. David Spirk, the departing Chief Data Officer of the Pentagon, made clear yesterday that the office of the Chief Digital and AI Officer (CDAO), in addition to its other functions, will be the successor organization for and replace DoD’s much-touted Joint Artificial Intelligence Center (JAIC). While the JAIC symbolized DoD’s efforts to get smart on AI beginning in 2018, the integration of data and AI represents a maturation of the U.S. AI approach—one that elevates the importance of AI in national defense. The JAIC itself was not as important as what the JAIC stood for—DoD’s commitment to U.S. defense AI leadership. In paving the way forward and getting AI on the agenda, the JAIC succeeded. From this point on, a more cohesive approach to AI and data through the CDAO is more likely to accelerate AI adoption throughout the U.S. military because it links DoD’s AI efforts with data, the fuel AI requires. For U.S. defense AI adoption, in particular, aligning these organizations could be game-changing. Addressing DoD’s siloed data, standardizing and improving its quality and access, is a precondition to having the data necessary to train algorithms for many defense uses, and any future technologies that rely on collecting, processing, and using information. Implementation will be critical and heavily dependent on two things. First, to catalyze AI adoption, the CDAO will need to develop close relationships with the military services and combatant commands. Second, the CDAO will need to coordinate with DoD’s research and development organizations, such as the Defense Innovation Unit, leading on AI experimentation and research. There is hard work ahead, but the new organizational design is promising.

The office of the CDAO brings together previously independent components of DoD: the JAIC, the office of the Chief Data Officer, the Defense Digital Service (DDS), and the Office of Advancing Analytics (ADVANA). The office of the Chief Data Officer is in charge of data management and coordination, DDS finds digital solutions for internal data and security issues, and ADVANA aggregates data and conducts data analytics. The combination of these offices raised questions about whether an independent JAIC was necessary for U.S. defense AI leadership. Departing CDO Spirk says that the CDAO will be “taking the best parts of all the organizations it is overseeing and redistributing them for faster and better decision-making.” We agree. At present, not only is DoD’s data siloed but its AI efforts and initiatives are as well. According to the company Govini, in FY21, fifteen separate departments and organizations funded and worked on AI and AI-adjacent technologies, often without formal coordination or throughlines. This has led to redundancies, gaps, inconsistencies in application and access to data and resources, and an overall hodge-podge of AI efforts. DoD has acknowledged this and is making organizational changes necessary to accelerate AI adoption even more by restructuring its AI approach from the ground up. Now, CDAO will have teams working on policy and governance, technology development, and rolling out data and AI for the Pentagon and the military services, to avoid bureaucratic duplication and confusion that could undermine the CDAO’s overall authority. In particular, bringing the data and AI teams together will improve the data DoD needs for AI development.

## Link

### General – ai coop

#### AI cooperation undermines innovation due to diverging perspectives

HEIKKILÄ 21

(MELISSA, “NATO wants to set AI standards. If only its members agreed on the basics.”, <https://www.politico.eu/article/nato-ai-artificial-intelligence-standards-priorities/>) DB

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 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 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 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.”

Staying relevant

These issues threaten to hamper NATO's standard-setting drive. "I think there’s a certain danger that if NATO doesn’t take this on as a real challenge, that it may be marginalized by other such efforts,” Franke said.

### Cyber

#### Cyber ambiguity is prevents attacks – clarifying cyber redlines undermines deterrence

Davis 19

(Susan, US General Rapporteur, “NATO IN THE CYBER AGE: STRENGTHENING SECURITY & DEFENCE, STABILISING DETERRENCE”, 148 STC 19 E rev. 1, October, <https://www.nato-pa.int/download-file?filename=sites/default/files/2019-10/REPORT%20148%20STC%2019%20E%20rev.%201%20fin%20%20-%20NATO%20IN%20THE%20CYBER%20AGE.pdf>) DB

28. Although cyber security and defence capabilities continue to improve, most experts argue that the offence has the advantage in cyber space and that this is unlikely to change soon. Given sufficient time, skills, and resources, attackers can perpetrate a cyber attack, finding the targeted system’s vulnerabilities, gaining access, and delivering their payload. This is a key reason why the Alliance must complement dissuasion with strategies of deterrence by punishment. In other words, they must try “to prevent an attack by threatening unacceptable damage so that in the attacker’s cost-benefit calculations the best choice is not to attack” (Morgan, 2009). It should be noted some experts would argue that offence is not as dominant. For example, the more sophisticated cyber weapons are, the more opportunities the defender has to stop an attacker and the more errors the attacker is likely to make. Additionally, continued organisational deficiencies could be a key reason why attackers have had the advantage thus far (Slayton, 2017). 29. NATO maintains a cyber deterrence policy of ambiguity. First, it does not draw a clear line for when a cyber attack is sufficiently harmful to cross the threshold to an armed attack. Second, it does not currently have an operational definition of what the collective response would be if that threshold were to be crossed. Such a cyber deterrence policy offers several advantages. If the Alliance were to set a clear threshold, the opponent would better understand how to stay below that threshold. This would strengthen deterrence of threats above the threshold but would encourage the opponent to increase attacks just below the threshold. A certain degree of ambiguity is beneficial because it could make opponents wary of going too far in their cyber attacks. The opponent always fears stepping over the invisible line, and thus prefers to tread lightly. A similar deterrence posture arguably worked well during the Cold War. 30. However, ambiguity on where the threshold lies could indeed lead an opponent who is sufficiently comfortable with taking risks to continuously exploit the “grey zones”, test the defender’s resolve, and conduct ever more daring cyber attacks. Arguably, the solution for such attacks cannot be found in deterrence alone, but rather in a clearly defined policy response for hybrid operations. Allied nations, individually and collectively, continue to develop such options. This is where the United States military saw a need to shift to an innovative strategy of Persistent Engagement. The Rapporteur encourages Allies to explore if and how such a strategy can be most effectively embraced together. 31. NATO’s ambiguity also extends to the type of punishment it threatens were it to suffer a cyber attack. The Alliance has made clear that it neither limits punishment to similar cyber attacks nor excludes them. Instead, it keeps the option open to use the full range of Allied capabilities to deter and counter cyber attacks. Once again, this introduces useful doubt in an opponent’s mind. A more technical reason for the difficulty of restricting retaliation to cyber attacks is that it is hard to credibly threaten the assets of the attacker in a similar fashion. If an attacker shuts down a power plant, would the Alliance have cyber options to attack an opponent’s power plants or similar infrastructure? Would NATO even want to if it could, as it complies with the principle of proportionality and international law in all its activities? NATO’s ambiguity on the type of retaliation serves a convincing purpose. It produces doubts in the would-be attacker’s mind and presents more options to tailor and scale a response to re-establish deterrence. 32. A key feature of a stable deterrence situation is the ability to signal retaliatory capabilities and resolve to enforce the deterrence threat. However, such signalling is difficult when it comes to cyber deterrence. States can hardly display malicious codes at a military parade or a defence exhibition. They must, therefore, find different ways to signal capabilities and resolve impending conflicts. For example, demonstrating capabilities in real-world situations typically makes deterrence threats more plausible (Nye, 2017). Indeed, many experts argue that recent, limited cyber attacks should, at least in part, be seen as such demonstrations (Lewis, 2018). Additionally investing in cyber capabilities in a way visible to an opponent “generally can help to signal resolve” (Lindsay, 2015). In other words, transparency on cyber security and defence measures also serves as a deterrence signal. In the limited way they can signal their cyber security and defence capabilities, NATO and individual Allies appear to be making progress. In the public realm, NATO should therefore remain as transparent as possible when it comes to its cyber capabilities. In areas where public disclosure is not an option, communicating with potential opponents through non-public channels should happen as frequently as possible.

### Norms/regulation

#### Setting ethical standards for use of military AI undermines US competitiveness and causes a switch to worse weapons

Yoo 17

(John, Emanuel S. Heller Professor of Law, University of California, Berkeley, School of Law; Visiting Scholar, American Enterprise Institute, “Embracing the Machines: Rationalist War and New Weapons Technologies”, California Law Review, Vol. 105, Issue 2) DB

THE DANGERS OF OVERREGULATING NEW WEAPONS TECHNOLOGIES These new types of weapons allow nations to coerce and pressure each other in novel ways. This Part argues that banning these new weapons will prove futile. It will first base its analysis on a realist approach to international relations, which assumes that nations pursue their interest in security above all other interests and that cooperation will prove difficult due to the anarchic nature of the international system. It then shows why nations will not agree on the regulation of new weapons systems. It follows these predictions about international agreements by arguing that these new weapons may actually reduce the harm to both combatants and civilians in armed conflict. Counterintuitively, heavy regulation of drones or cyberweapons may have the unforeseen consequence of making war more dangerous and destructive. A. Realism and Weapons Before we can develop a sensible approach to regulation, we first must present a theory about international conflict. Without a theory, the international system might adopt standards without any understanding whether it is making the problems of war better or worse. Excessive regulation of new weapons technologies might unintentionally exacerbate the harms of war by forcing combatants to use more destructive weapons. Unduly lax standards might have the unintended consequence of allowing both sides to inflict grievous harms on each other to no military advantage. Without a theory of war, we do not know what values our legal rules should maximize and what costs it should minimize. We are not applying a philosopher’s attitude to war. Some believe that nations have followed laws during armed conflict out of a sense of morality that can trace its origins to Christian and, before that, Roman just war theories.81 We do not discount the intellectual tradition of just war theory or its recent appearances in the works of Michael Walzer, John Rawls, and others.82 But the history of war does not reveal a universal morality that imposes consistent restraints on warfare.83 This should come as no surprise in light of the diversity of the world’s religions and political, economic, and moral belief systems. Nations have often rejected moral appeals when they can achieve military advantage in combat. Instead, we follow a more instrumental approach. Like realist scholars in the field of international relations, we assume that the international system fundamentally suffers from anarchy. Anarchy does not mean that anything goes. Anarchy does not mean that the world lacks order, but only that no world authority can enforce international rules in the same way that domestic governments maintain law and order. The world is composed of independent sovereign states with no higher sovereign above them. Under realism, states are obsessed with their own security because they cannot rely upon a supranational body to guarantee it. Nor can nations hold 100 percent certainty about other nations’ motives. As a result, states will fear each other’s military capabilities and political intentions. They will take self-help measures and act strategically to guarantee their own survival, regardless of their internal politics.84 As Kenneth Waltz famously argued, a state’s place within the anarchical international system, rather than its domestic nature, will dictate national policy.85 Realists believe that international organizations and international law can do little to affect the pursuit of power and security. States may sign treaties, but the legal effect of the agreement does not affect their calculations. They will always pursue a course of conduct that maximizes their interests regardless of the presence or absence of a treaty. “Realists maintain that institutions are basically a reflection of the distribution of power in the world,” John Mearsheimer argued during the heady days of the end of the Cold War. “They are based on the self-interested calculations of the great powers, and they have no independent effect on state behavior.”86 Realism does not prevent nations from cooperating for mutual benefit. But the competition of states will make agreements difficult. First, because nations worry about their security from attack by other nations, they will be concerned by the relative gains of cooperation. Two nations might improve their situations in a deal, but if one of the two increases its relative advantage as a result, the balance of power might shift enough to sink the deal. In other words, states may refuse to cooperate, even if they were to enjoy absolute gains, if other nations gain even more. Second, nations may not cooperate even if they were to gain because they will worry that their partners will cheat. Without a world government, no higher authority can force sovereign states to keep their promises.87 These challenges make it unlikely that nations can commit to end the use of force in their relations. The 1928 Kellogg-Briand Pact, which purported to ban all war, stands as a failed symbol of such utopian efforts.88 Other forms of international cooperation may employ soaring rhetoric but—by design— produce little real world effect, such as the many resolutions of the UN General Assembly. But nations can cooperate in limited areas, so long that the resulting treaties or laws mirror the existing balance of power. Trade agreements, for example, allow comparative advantage to improve the economies of all signatories. Nations can cooperate to solve problems that cross borders, such as pollution or drug trafficking, or to divide valuable resources, such as underground oil fields or fisheries. States may even cooperate on matters of war if they can both benefit without either gaining a military or political advantage. State practice in waging armed conflicts produces customary practice that coalesces, over time, into the laws of war. Rules that will come to have the force of law must leave states better off in pursuing their interests. Nations will reject rules—no matter how noble their intent or humanitarian their goal—that leave them worse off. NATO allowed the United States and Western Europe to band together to contain the Soviet Union. NATO, however, did not alter the balance of power between Washington and Moscow. Instead, the institution served as a mechanism for the United States to better organize the forces on its side.89 NATO did not alter the balance of powers within Europe, but allowed the United States to rebuild Germany without reigniting security fears on the part of France and the United Kingdom.90 International agreements might also regulate wartime tactics, operations, and strategy. Nations at war, for example, might treat prisoners humanely if they can expect that their opponents will behave similarly.91 They might agree to foreswear chemical weapons if their use inflicts great suffering without giving either side an advantage.92 War’s high stakes, however, will tempt nations to cheat when battlefield conditions may make reneging harder to detect. It is also important to recognize that the success of a legal regime on war will depend on the international context. In a certain period of history, for example, a few great powers might protect their own security not just by building defenses, but also by maintaining a rough equality of power with their rivals. War might occur when nations band together to prevent a rising nation from upsetting the balance of power. In 1849, Great Britain and France dispatched troops across Europe to fight the Russian Empire in Crimea. Even though they had few interests there, London and Paris believed that Moscow’s move into Ottoman territory would upset the European balance of power. Using machine guns and trench warfare for the first time, the combatants fought to a stalemate. Under conditions that produced the static defenses of trench warfare, a balanced distribution of power and restrained national goals might make limitations on arms possible. No state would enjoy an advantage either before or after an agreement. It should be no surprise that the first treaties regulating warfare, the Hague Regulations of 1899, hail from the highpoint of Europe’s classic balance of power. Different circumstances, however, might not yield to noble goals. In the wake of World War I’s carnage, for example, the great powers sought to limit the naval arms race that they thought had caused British-German antagonism. If nations had built great fleets simply to keep up with their neighbors, a common limit on dreadnoughts might have restrained competition, thereby saving resources and reducing conflict. In the Washington Naval Treaty of 1920, the major western powers and Japan agreed to permanent limits on battleships, with the United States and Great Britain permitted to maintain the largest fleets, followed by Japan, France, and Italy.93 The Treaty of Versailles subjected Germany to far stricter limits on naval building.94 Wracked by the Great Depression and the rise of fascism, however, the Axis powers embarked on a campaign of territorial expansion. They circumvented the Washington and Versailles Treaties, either by concealing vessels (such as the Bismarck), building weapons that skirted the rules (Germany’s “pocket battleships”), or developing new naval weapons unforeseen by the drafters (aircraft carriers). As history suggests, changes in the international system and in war will have critical consequences for the nature and success of international rules. Several developments have set the environment that will surround the new military technologies. Perhaps the most important is that the destructiveness of war has rapidly declined since World War II. This seems counterintuitive in light of the deployment of vastly more destructive weapons by the superpowers and their allies. The United States used two fission bombs to destroy Hiroshima and Nagasaki, a level of destructive power that rivaled entire air campaigns of the day. A single modern fusion bomb would exceed the total destructive power of all of the conventional bombs dropped in World War II. Ballistic missile technology allows nations to deliver nuclear weapons anywhere in the world without having to deploy vast naval or air fleets. Throughout the 1980s, the United States and the Soviet Union fielded more than twenty thousand nuclear weapons each and thousands of air, sea, and ground missiles capable of delivering them. During the Cold War, both nations kept their nuclear forces at high levels of alert and could have destroyed the world many times over. But they did not. Though still present, conventional war has become less harmful. By some counts, the period from the end of World War II to the present day has seen the level of armed conflict between nations fall by an order of magnitude from the Peace of Westphalia to the mid-twentieth century.95 When corrected for the higher number of nations, wars between states have dropped both in their frequency and destructiveness. War no longer characterized the relations between European states. Indeed, for the first time in centuries, no major war between the great powers broke out in Europe or Asia. Historians now appreciate the Cold War as “the Long Peace.”96 But deaths from war have not disappeared. They have not even significantly declined. They have only dropped in wars between the great powers. While the number of conflicts between nations has steeply fallen, it has jumped inside states.97 Civil wars have replaced and even exceeded the scourge of great power war in terms of their casualties and frequency. By some estimates, post-World War II conflicts have killed forty million, including both combatants and civilians who have died on the battlefield or from related starvation and disease.98 Studies report that between 70 and 80 percent of these casualties occurred in civil wars.99 Conflict has become less global and more local. Globe-spanning wars between broad alliances of great powers, such as the Allies against the Axis in World War II, have receded. No great power has directly fought a war with another for the last seventy years. Instead, wars have remained limited to specific areas, such as the Balkans or the Middle East, with Africa generating the greatest share of conflicts and deaths. Realists account for the decline in war in two ways. First, and most important, the postwar world soon divided into a contest between two superpowers. Despite the arms race and proxy wars in Korea, Vietnam, and Afghanistan, this “bipolar” system had the counterintuitive effect of producing global stability. With only two superpowers, calculations of war and peace became simpler, less friction occurred, and the interest in superpower deterrence suppressed national interests that might have once caused war. According to this view, the multipolarity between the seventeenth and twentieth centuries made war more likely because of the heightened opportunities for conflict between more great powers. Second, the emergence of nuclear weapons only reinforced the balancing effect of bipolarity. The great powers could achieve greater security with a nuclear deterrent and the possibility of a nuclear exchange caused them to exercise greater caution in the use of force. The United States and the Soviet Union did not come into direct military conflict, it is argued, because of the fear that conventional war could escalate quickly into a nuclear conflict with devastation for both sides.100 As Waltz observed near the end of the Cold War, “[t]he probability of major war among states having nuclear weapons approaches zero.”101 The decline in interstate wars has accompanied greater international cooperation on nonsecurity areas, such as commerce, trade, and the environment. Nations have increased global welfare by lowering trade barriers within regional free-trade areas, such as the European Union and the North American Free Trade Agreement, and internationally through the World Trade Organization. These developments have encouraged scholars to see greater opportunities for international institutions and law to help build stability and peace. Such benefits usually arise from a hegemonic power, like Great Britain in the nineteenth century or the United States in the twentieth century, which can establish an international order built on free navigation and trade. Realist theory, however, would predict disorder when a dominant great power declines. Nevertheless, institutional scholars, as they are sometimes known in political science, argue that self-interested nations can cooperate to create international regimes that can maintain global order in the absence of a hegemon. In After Hegemony, for example, Robert Keohane argues, “Realist assumptions about world politics are consistent with the formation of institutionalized arrangements.”102 In other words, self-interested states that worried only about their security might still cooperate if they can realize benefits that leave them better off than before. There is little doubt that cooperation has advanced in the world economy even as the absolute and relative power of the United States has declined after the end of the Cold War.103 International agreements have successfully lowered tariffs and trade barriers and improved coordination in economics, science, environment, and health. Political economists theorize that these regimes help nations escape “the prisoner’s dilemma.” In this stylized game, the optimal outcome for two suspects is to remain silent under police questioning, but because they cannot communicate with each other there is a strong incentive to bargain for a reduced sentence and implicate the other criminal. The prisoner’s dilemma has become a shorthand in the social sciences for situations in which two parties, in pursuit of their rational self-interest, will do themselves short-term harm, when they could have achieved longer-term benefits if they had cooperated. Nations might engage in ruinous trade wars or arms races because of the prisoner’s dilemma. A classic example would be the nuclear arms race between the superpowers during the Cold War. Even though the United States and Russia apparently believe today that they need no more than 2,500 warheads each, during the 1950s and 1960s their nuclear stockpiles reached more than 25,000 weapons. Only decades of negotiation, verification, and trust-building deals on smaller weapons—like the 1988 intermediate-range missile ban—gave the superpowers the confidence to agree to reductions in their strategic arsenals. Liberal institutionalists argue that international agreements can help overcome the prisoner’s dilemma through repeated interaction. They believe that regimes offer states the chance to communicate and learn about each other over time in order to gain information and generate trust. As Andrew Guzman argues, a history of contact allows nations to develop reputations for keeping promises or retaliating against cheaters.104 Regimes can also improve the opportunities for cooperation by linking more issues together, which increase the benefits of performance and the tools for tit-for-tat responses to shirking. Permanent institutions can enhance these effects by spreading reliable information on the compliance of states and reducing transaction costs to future negotiations and deal making. Leading political scientists argue that the successful record in trade and finance should set an example to regulate other areas of global concern. There are several reasons to doubt, however, whether the structure of cooperation in areas such as the international economy will transfer easily to global security. First, and most important, cheating in a security agreement could inflict greater harms on a nation. If a nation suffers a surprise attack, loses a military advantage, or is left without its promised allies, it may encounter a long-term, permanent drop in its territory, population, resources, and ultimately power. Germany’s surprise 1941 invasion of the Soviet Union, and the breaking of their nonaggression pact, led to grievous losses and almost knocked Moscow out of the war. Withdrawal from a trade or financial agreement, by contrast, may cause economic pain, but likely cannot equal the severity and immediacy of a wartime defeat.105 Second, nations may have much greater concerns about “relative gains.” 106 In economic affairs, nations may remain content with gains in their GDP growth, increases in exports, and drops in the cost of imports, even if their trade partners do better. But in security affairs, as Joseph Grieco has argued, nations may refuse to cooperate if doing so would benefit a competitor in a relative sense.107 Cooperation is not impossible, but it is most likely in situations where both the use of force is not a serious threat between the nations concerned and they can engage in a long practice of tit-for-tat reciprocity to encourage cooperation.108 Cooperation itself does not disappear during armed conflict, but it is doubtful that formal legalization produces lasting rules of war. Nations have sought to follow some basic norms in combat, such as eliminating weapons that cause unnecessary human suffering. Despite the recent deterioration in practice, nation-states have generally refrained from using chemical weapons since the end of World War I. They have followed the Geneva Conventions on prisoners of war, though not consistently. Nations have observed others norms in the breach, such as the immunity of the civilian population and resources from attack. World War II included the aerial bombing of cities and the nuclear attacks on Japan, while the years since have seen precision targeting of terrorists off the battlefield, attacks on urban infrastructure, and the acceptance of high levels of collateral damage among civilians. International lawyers and diplomats may proclaim that nations follow universal rules on combat, either because of morality or a sense of legal obligations, but the record of practice tells a far different story. We should also not mistake temporary restraint in combat for a nations’ lack of military capacity. Human rights activists, for example, often hold up as an example of progress the 1998 Ottawa Convention banning land mines.109 Nongovernmental organizations (NGOs) led a decades-long campaign to persuade nations to give up antipersonnel mines, which can kill large numbers of civilians years after fighting has ended. In 1997, the Nobel Prize committee ultimately awarded the peace prize to Jody Williams, the director of the international campaign. The apparent success of the treaty, which now includes about 80 percent of the world’s nations, led to visions of a new approach to the laws of war in which groups and individuals, rather than states, would mobilize to force states to control war. Ottawa “spawned a new politics, new partnerships, new ways of thinking about the international environment. It was the forerunner of a clear notion of global citizenship,” writes Lloyd Axworthy, a former Canadian foreign minister and current university president. 110 “It challenged conventional notions of sovereignty and set in motion a form of coalition politics at the global level that could be used to shift power and political relationships.”111 NGOs and international activists have sought to duplicate the perceived success of the Ottawa Convention by extending its scope to regulate cluster munitions and small arms.112 Such efforts, however, unintentionally reaffirm the enduring importance of power. While the great majority of the world’s nations foreswear antipersonnel mines, most of them do not field large militaries or fight major conventional wars. Latin American states, for example, signed Ottawa in large numbers, but they have not fought a major war against each other for many decades. Nations with power projection capabilities, such as the United States, Russia, China, and India, did not commit to the agreement. Smaller states, such as Korea and Israel, faced with aggressive neighbors and local instability, also declined. Eliminating mines would place these nations at a serious disadvantage because they would reduce their ability to deter invasion or maintain a regional status quo. Despite their costs on civilians, mines actually may enhance stability and advance peace—they maintain borders by raising the cost of a ground invasion and have no offensive capability. Nations that live under threat of conflict will have little reason to agree to abandon such a defensive advantage that does not produce a corresponding reduction for offensive weapons. For similar reasons, the “Ottawa Process” will have little impact on other weapons. Nations with small militaries, peaceful neighbors, or large allies, such as many in Europe and Latin America, may promote new arms control agreements. But because the impact on their military performance is negligible and the chances that they will engage in war are small, these states experience very little loss in expected benefits—such as security gains by deploying these weapons—by signing on. Nations with large militaries and greater possibilities for conflict will not join agreements that could force a significant shift in their ability to prevail. Instead, nations will reach agreements whose reciprocal reductions in arms will leave no nation with an advantage. As James Morrow has observed, the laws of war treaties succeed when they guarantee minimum standards of treatment for captured soldiers that leave both sides to a conflict better off without giving either an advantage.113 A similar dynamic gives the agreements on chemical and biological weapons their strength: these weapons cause undue suffering and are difficult to control, and eliminating them leaves nations in the same relative power position as before. But if a nation can narrow a large gap in military power with a competitor by developing these weapons, it may violate an agreement banning their possession. Thus, nations at a disadvantage in conventional or nuclear forces have turned to biological and chemical weapons because reciprocity no longer holds. Nations, of course, will also follow humanitarian treaties even when they do not depend on reciprocity. But they will do so when compliance still advances their national interests. In the Korean and Vietnam Wars, for example, the United States followed the Geneva Conventions even though its opponents had not adopted the agreements. Rather than reciprocate, North Korea and the Viet Cong engaged in the systematic mistreatment of American prisoners of war. The United States, however, could have benefited from following Geneva anyway. Treating prisoners humanely may increase the willingness of enemy fighters to surrender, while a history of cruel treatment might cause opposing soldiers to fight to the death. These objectives may have even greater force if the contending armies are fighting for the support of the local populations. Extending Geneva protections to local guerrillas might help persuade the local populace to side with the government, for example. We should not overstate the influence of reputation on the decisions of nations at war. Human rights advocates, for example, might believe that nations should follow the Geneva Conventions to build a track record of compliance that will lead to better treatment for their soldiers in the next war. Under this argument, the United States should extend Geneva protections to al-Qaeda terrorists, even if the latter execute U.S. prisoners and civilians, because its soldiers will benefit in a future conflict with Iran or China. This claim, however, runs counter to the self-interest of nations at war. China would have little interest in punishing U.S. soldiers captured in a United States-China conflict because of American conduct toward terrorists in a separate contest. Such incentives might even cause a nation to conduct itself differently depending on the corresponding policies of its enemies. In World War II, for example, Germany generally followed the Geneva Conventions on the western front, where the United States and the United Kingdom treated prisoners of war well. The eastern front followed completely different rules: Germany and the Soviet Union descended into the barbaric treatment of each other’s troops and civilians. This detour into international humanitarian treaties here underscores the workings of reciprocity. Nations will follow the human rights treaties when they gain a benefit that outweighs the cost. Their captured troops will receive good treatment at the hands of the enemy even though Geneva will require them to bear costs in maintaining security, providing housing, and keeping prisoners in good health. Limitations on the use of weapons will follow a similar logic. Nations will refrain from using new weapons technologies only when they provide little benefit or their use by both sides leaves no one better off. Robots and cyberweapons do not bear the same features as the weapons where the laws of war have succeeded. They do not inflict unnecessary suffering out of proportion to their military advantages, as do poisoned bullets or blinding lasers. Rather, these weapons improve the precision of force such that they reduce human death and destruction in war. Nor do these new weapons technologies yet engage nations in a useless arms race. Nuclear weapons eventually became opportune for arms control because larger stockpiles provided marginal, if any, benefits due to the destructive potential of each weapon and the deterrence provided by even a modest arsenal. Mutual reductions could leave both sides in the same position as they were before the agreement. Today, the marginal cost of nuclear weapons for the United States and Russia so outweigh their marginal benefit that it is not even clear that a binding international agreement is needed to reduce their arsenals. Russia, for example, reduced its arsenal below New START’s ceilings of 1,550 nuclear warheads and 700 strategic launchers even before the United States approved the deal.114 Some experts estimate that the United States requires less than even those numbers to maintain an adequate deterrent, and it is possible that future presidents may reduce the nuclear arsenal without any international agreement.115 Cyberweapons and drones do not yet appear to bear these characteristics. The marginal gains in deploying these weapons will not be even across nations, but instead may be asymmetric. Some nations will experience much greater gains in military capability by developing cyber and drone technology. Or put differently, prohibition or regulation of these new weapons will not have equal impacts on rival nations. Chinese military doctrine, for example, emphasizes using such technologies to offset U.S. advantages in conventional sea and air power. 116 Drones might be used to overwhelm the defenses for U.S. carrier groups in the Western Pacific, while cyber weapons could interfere with U.S. command-and-control, communications, or even military readiness. Just as the Germans resorted to submarines to offset British and American naval superiority in World Wars I and II, the Chinese may well turn to robotics and network attacks in a future contest. Reciprocity will not hold because international limitations on new weapons would have the effect of favoring the United States’ existing advantage in conventional arms. Even if there might be some mutual advantage to a universal limit on these new weapons technologies, it is still doubtful that nations would accept a legal agreement. Nations would still develop these weapons because they improve their military capabilities at lower cost. Aerial drones, for example, can achieve the objective of attacking an enemy target at lower cost. An F-35 Lightning II stealth fighter/bomber costs $85 million under the best estimates, while Predator and Reaper drones cost about $4 million and $16.9 million respectively.117 The U.S. Air Force can not only purchase twenty Predators for the cost of a single F-35, but it can operate them at a far lower cost per hour, keep them on station for far longer (a predator can fly over a target area for up to fourteen hours) but also not risk the lives of pilots who may be captured or killed.118 Militaries will have an incentive to replace expensive manned aircraft with fleets of drones, regardless of whether their rivals choose to match them or not. Cyber and robotic weapons today resemble the emergence of the new weapons borne of the industrial age. At the time of their emergence, the impact of high-capacity firearms, long-range artillery, warplanes, submarines, and motorized vehicles was not well understood. World War I’s carnage can be attributed to the failure of nineteenth century tactics and strategy, still influenced by Napoleonic theories, to adapt to the greater firepower of modern weapons. Although nations and experts proposed the regulation of aerial and submarine warfare, their asymmetric benefits and the uncertainty of their effects on the balance of power precluded any agreement among the combatants. Nations may prove even more reluctant to adopt arms control schemes for weapons that have strong defensive qualities, such as the machine gun and artillery, because upgrading defensive systems may pose little offensive threat to neighbors.

## Impact

### Turns case

#### The thesis of the da turns case – other countries will develop new weapons regardless of international norms – that only makes the US’s position worse

Yoo 17

(John, Emanuel S. Heller Professor of Law, University of California, Berkeley, School of Law; Visiting Scholar, American Enterprise Institute, “Embracing the Machines: Rationalist War and New Weapons Technologies”, California Law Review, Vol. 105, Issue 2) DB

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### Turns heg

#### Integrating AI into military tech makes heg sustainable

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(Amitai, “Pros and Cons of Autonomous Weapons Systems”, <https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/May-June-2017/Pros-and-Cons-of-Autonomous-Weapons-Systems/>) DB

Military advantages. Those who call for further development and deployment of autonomous weapons systems generally point to several military advantages. First, autonomous weapons systems act as a force multiplier. That is, fewer warfighters are needed for a given mission, and the efficacy of each warfighter is greater. Next, advocates credit autonomous weapons systems with expanding the battlefield, allowing combat to reach into areas that were previously inaccessible. Finally, autonomous weapons systems can reduce casualties by removing human warfighters from dangerous missions.1

The Department of Defense’s Unmanned Systems Roadmap: 2007-2032 provides additional reasons for pursuing autonomous weapons systems. These include that robots are better suited than humans for “‘dull, dirty, or dangerous’ missions.”2 An example of a dull mission is long-duration sorties. An example of a dirty mission is one that exposes humans to potentially harmful radiological material. An example of a dangerous mission is explosive ordnance disposal. Maj. Jeffrey S. Thurnher, U.S. Army, adds, “[lethal autonomous robots] have the unique potential to operate at a tempo faster than humans can possibly achieve and to lethally strike even when communications links have been severed.”3

In addition, the long-term savings that could be achieved through fielding an army of military robots have been highlighted. In a 2013 article published in The Fiscal Times, David Francis cites Department of Defense figures showing that “each soldier in Afghanistan costs the Pentagon roughly $850,000 per year.”4 Some estimate the cost per year to be even higher. Conversely, according to Francis, “the TALON robot—a small rover that can be outfitted with weapons, costs $230,000.”5 According to Defense News, Gen. Robert Cone, former commander of the U.S. Army Training and Doctrine Command, suggested at the 2014 Army Aviation Symposium that by relying more on “support robots,” the Army eventually could reduce the size of a brigade from four thousand to three thousand soldiers without a concomitant reduction in effectiveness.6

Air Force Maj. Jason S. DeSon, writing in the Air Force Law Review, notes the potential advantages of autonomous aerial weapons systems.7 According to DeSon, the physical strain of high-G maneuvers and the intense mental concentration and situational awareness required of fighter pilots make them very prone to fatigue and exhaustion; robot pilots, on the other hand would not be subject to these physiological and mental constraints. Moreover, fully autonomous planes could be programmed to take genuinely random and unpredictable action that could confuse an opponent. More striking still, Air Force Capt. Michael Byrnes predicts that a single unmanned aerial vehicle with machine-controlled maneuvering and accuracy could, “with a few hundred rounds of ammunition and sufficient fuel reserves,” take out an entire fleet of aircraft, presumably one with human pilots.8

### Magnitude

#### We outweigh on magnitude – wars using new AI weapons prevent conventional weapons, which are worse

Yoo 17

(John, Emanuel S. Heller Professor of Law, University of California, Berkeley, School of Law; Visiting Scholar, American Enterprise Institute, “Embracing the Machines: Rationalist War and New Weapons Technologies”, California Law Review, Vol. 105, Issue 2) DB

Such mistaken arguments confuse jus in bello and jus ad bellum. The means of fighting a war do not bear on the justifications for the war. A war that rests on just grounds need not be fought in an evenhanded fashion. One might want a war that has a just purpose to come to a quick and rapid conclusion, with the least loss of life as possible, which should be more likely if one side has a great advantage over the other. Again, the Kosovo War provides a good example. If we agree with the goal of stopping Serbia’s ethnic cleansing of the provinces of the former Yugoslavia, we should want NATO to execute the war with the maximum dispatch and effectiveness. A faster war, fought with precision weapons and reduced combat casualties, could end the human rights catastrophe earlier and save more lives. Similarly, if a nation were defending itself, we should want it to have the most advanced weapons possible. Superiority itself may not just deter an attack; it could also inflict such high costs in an actual war that the attacker may give up.

In fact, the critics of autonomous systems support a rule that could just as well produce more death and destruction. Preemptively banning such advanced weapons systems would establish a technological parity among many nations. We could witness wars that grind on for years between nations with similarly matched weaponry and tactics. The world witnessed such a conflict a century ago in the trench warfare of World War I. Even World War II, which favored offensive weaponry and tactics, lasted for six years and killed millions more than the Great War. Technological discoveries, such as the atomic bomb, shortened the war and saved millions of lives. If today’s human rights advocates had persuaded Roosevelt, Truman, and Churchill to preemptively ban nuclear weapons research, the invasion of Japan would have taken an estimated one million Allied lives and eight to nine million Japanese.136 Of course, we would not have wanted Nazi Germany or Imperial Japan to develop advanced weapons first, but that merely confirms that whether we want nations to enjoy superiority in war depends on whether we agree with why those nations employ force.

The real-world consequences of military technology point to a rejection of a categorical ban on new weapons. As with drones, autonomous weapons systems no doubt often allow nations at war to wage hostilities with greater lethality for the enemy, but at a lower cost to their soldiers. A weapon’s improved effectiveness in cost-benefit terms should not prompt efforts at bans; rather, they should be welcomed for reducing the destructiveness of war. Technology that makes war more effective by making targeting more precise, reducing combatant and civilian deaths, and ultimately shortening conflicts will improve overall global welfare, a result that any system of rules on war should seek.

#### It makes conflicts more peaceful – regulating weapons fails

Yoo 17

(John, Emanuel S. Heller Professor of Law, University of California, Berkeley, School of Law; Visiting Scholar, American Enterprise Institute, “Embracing the Machines: Rationalist War and New Weapons Technologies”, California Law Review, Vol. 105, Issue 2) DB

A rationalist approach to war also provides an answer to the broader critique of the new weapons technologies as facilitating war. Recall that some UN officials and scholars share the concern that drones and cyberweapons will encourage states to wage war more often. Critics argue that these weapons remove a nation’s soldiers from the battlefield, thereby emboldening leaders to choose force more frequently. But, understanding war as a bargaining failure reveals the importance of signaling to resolving international disputes. New weapons create more opportunities for signaling, which allows nations to communicate their intentions and capabilities more effectively. Greater signaling should allow nations to share more information, which on the margins will lead to more international deals and therefore an overall reduction of major wars. Ironically, an effort to ban new weapons may well produce more war, not less.

CONCLUSION

The rise of robotics and cyberwarfare has blurred our understanding of what constitutes “war.” Indeed, within weeks, both blanketed American news media. First, according to news reports, the Central Intelligence Agency concluded that Russia had attempted to influence the 2016 presidential elections by hacking into the computer systems of the Democratic National Committee and the campaign of candidate Hillary Clinton. Then, China captured a U.S. submersible drone in the South China Sea, in violation of international legal right of free navigation. Perhaps few see these actions as “war,” in the traditional sense. And yet, many would feel differently if Russian spies entered the United States to tamper with election result or if Chinese marines had boarded an American warship. These examples, however, only begin to introduce the complexity of robotics and cyberwarfare, because they involve powerful and identifiable state actors. When nonstate groups adopt these measures, understanding “war” seems less and less feasible.

The technology that has created aerial drones will produce unmanned versions of many other weapon systems, from tanks to submarines to sentries. Criticism of this advance misses the mark. Rather than an unknown to be feared, new weapons technology will bring a greater precision in the use of force that will reduce casualties and destruction. Allowing the use of robotic weapons against a broader range of targets promises to contain the harm of international disputes and help lead to peaceful settlements. Concerns about autonomous weapons are equally mistaken. Such systems promise to increase the precision and decrease the harms of attack. In a world beset by fresh challenges to international security, reducing the costs and increasing the accuracy of force may reduce the obstacles to action to stop weapons of mass destruction proliferation, terrorist groups, humanitarian disasters, or revanchist powers.

### Yes impact

#### Causes extinction through uncontrolled risks from emerging tech.

Jain ’20 [Ash; 2020; Senior fellow with the Scowcroft Center for Strategy and Security; Strategic Studies Quarterly; “Present at the Re-Creation: A Global Strategy for Revitalizing, Adapting, and Defending a Rules-Based International System,” <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.

## Aff

### +Uniqueness

#### We’re losing the ai race now – cooperation is key

Wodecki 22

(Ben, “NATO at risk of losing AI innovation race to Russia, China”, <https://aibusiness.com/document.asp?doc_id=777260>) DB

The North Atlantic Treaty Organization (NATO) should standardize and regulate AI to keep up with rivals, according to findings published by the U.S. think tank, Center for European Policy Analysis (CEPA).

CEPA’s comments came as it published a series of AI-related recommendations for NATO amid growing geopolitical tensions with the likes of Russia, China and North Korea.

Its recommendations include AI standardization, encouraging and improving AI literacy and spurring private sector innovation.

Such undertakings would allow NATO allies to better scale and deploy AI – and keep pace with rivals.

“These new capabilities will revolutionize NATO’s military and strategic affairs, thus strengthening NATO’s ability to fulfill its essential core tasks of collective defense, crisis management and cooperative security,” CEPA’s Nicholas Nelson and Nico Luzum wrote.

The pair cited AI projects being undertaken by adversaries, including China’s attempts to develop purported mind-controllable drones and AI assistants for fighter pilots.

But NATO allies have their own capabilities – including U.S.-developed autonomous tanks and British-made systems that provide ground troops with information on the surrounding terrain.

The think tank’s study suggests that at present, NATO is leading the AI race – but risks losing its competitive advantage to peer competitors “competitors if allies fail to leverage the private sector, coordinate implementation and engage with the public.”

CEPA suggests that NATO allies should accelerate AI adoption and actively encourage private sector innovation.

“Ultimately, we hope that these recommendations enable NATO allies to better innovate, scale, deploy, and integrate AI and autonomy-based technologies to form agile, system-wide solutions.

### turn

#### AI cooperation is key to Nato’s threat response – turns the da

van der Merwe 21

(Joanna, “NATO Leadership on Ethical AI is Key to Future Interoperability”, <https://cepa.org/nato-leadership-on-ethical-ai-is-key-to-future-interoperability/>) DB

In October 2020, Deputy Secretary General of NATO Mircea Geoană highlighted the benefits of establishing a “transatlantic community cooperating on Artificial Intelligence (AI).” The Deputy Head of NATO’s Innovation Unit followed with a commitment to its responsible use. The US Department of Defense (DoD) adopted Ethical Principles for AI in 2020 and has committed to bringing together NATO member and partners to operationalize these principles. Despite these statements and developments, more work is required to tackle the very real challenge that ethical AI 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, 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 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 and policing algorithms, 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 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 in the private defense industry. This, along with a lack of regulation, feeds into the power imbalance 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 do not lead to an interoperability barrier in the future. If developments surrounding the General Data Protection Regulation (GDPR) and the challenges it brought for U.S.-based, data-driven companies 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.

### No link

#### AI coop doesn’t undermine US innovation

Lawrence and Cordey 20

(Christie and Sean, “The Case for Increased Transatlantic Cooperation on Artificial Intelligence”, <https://www.belfercenter.org/publication/case-increased-transatlantic-cooperation-artificial-intelligence>) DB

The Case for Transatlantic Cooperation

There are three critical, interconnected arguments for transatlantic cooperation to ensure AI innovation protects the security, values, and economic interests of the United States and the European Union.

1.Global Good: Transatlantic AI partnerships and cooperation encourages innovation and applications that enhance human welfare, strengthen the economies of the US and the EU, and advance global security.

2.Great Power Competition: US-EU leadership of like-minded nations is needed in this age of great power competition to tip the scales against efforts by authoritarian governments—particularly, China and Russia—to undermine democracies.

3.Shared Values: The US and the EU share fundamental values and would benefit from joint efforts to establish AI norms that would more effectively advance their common vision of AI and ripple throughout the global AI ecosystem.

Although the US consistently sounds the alarm bells around China’s AI aspirations and the EU urges international efforts against AI that violates fundamental rights, increasingly noting China’s actions with concern,8 little concrete international action has taken place. The United States and the European Union’s ongoing reassessment of their respective AI strategies and legislation9 provides a window of opportunity to align and collaborate. Transatlantic AI cooperation is at a critical juncture and the United States and the European Union should seize this opportunity to take concrete actions.

The Current State

The United States and the European Union are separately assessing and updating their AI strategies. However, it is a myth to assume they are not collaborating at all to advance their AI-related goals. Transatlantic cooperation on AI norms, standards, research and development, and data sharing should increase, but the United States and the European Union can build upon an existing foundation for a stronger alliance.

United States:The United States views American leadership in AI as necessary to safeguard American values and maintain defense and economic superiority. Recognizing the need to develop a national AI approach and reclaim the AI R&D global leadership position from China, which had already surpassed the US in several research output metrics by 2016,10 the Obama Administration developed an AI R&D prioritization in October 2016.11 Building on this urgency, the Trump Administration has prioritized AI and established the American AI Initiative in February 2019.12 This Initiative identified the need for a whole-of-government approach to prioritize AI R&D and deployment throughout the entire federal government. The Initiative also identifies the need to grow the US AI workforce, set national and global norms and standards, and work with industry and allies to promote an AI environment favorable to the United States.13

The United States’ federal government has made key strategic and tactical changes to achieve these goals. Federal AI R&D and the American AI Initiative are coordinated by several committees and subcommittees within the Executive Office. President Trump pledged to more than double non-defense AI R&D to $2 billion by 2022.14 Federal AI R&D, guided by the National AI R&D Strategic Plan, must now be reported annually for each federal entity.15 The United States has taken a “light-touch” approach to regulation, fearing overly burdensome laws will stifle innovation. However, guidance is not completely absent. The Office of Management and Budget released a memo to guide Federal agencies as they develop regulatory and non-regulatory approaches to non-government applications of AI and the Department of Defense published five AI principles to guide AI design, deployment, and adoptions in defense.16

Obstacles to the US realizing its goal of global AI leadership exist, despite the government’s prioritization of it. Key obstacles include the need to bolster its private sector AI landscape; address regulatory or standards gaps to safeguard American values; repair the breakdown of funding and information sharing relationships between academia, industry, and government; grow its AI workforce; and further increase its federal AI R&D funding.

European Union: The European Union, like the United States, intends to leverage AI’s potential as a strategic and transformative technology.17 However, the EU has positioned itself as a leader in trustworthy, human-centric, ethical, and values-based AI,18 in comparison to the US government’s emphasis on the need for AI innovation to protect American values, civil liberties, and privacy. The EU recognizes that it trails behind the US and China in terms of volume of investment and maturity of its tech industry.19 Nonetheless, the EU believes it can capitalize on its underlying structural strengths (e.g., academic and innovation record) and on its values to compete globally and reaffirm its digital and technological sovereignty.20 Starting with its 2018 Communication: Artificial Intelligence for Europe,21, 22 the European Commission (EC) has launched a coordinated effort promoting AI.23 Policies include increasing public and private investments from $5.6 billion to $22 billion annually;24 coordinating research and innovation across Europe; devising ethical guidelines; fostering digital skills in its workforce; and promoting public and private sector adoption of AI.25 To support and counsel these efforts, the EC has established the High-Level Expert Group on AI (AI HLEG) comprising 52 experts who advise the Commission on policy and regulatory changes.

The European Union’s Juncker26 Commission (2014-2019) actively avoided regulating AI, causing the European Parliament to increase their efforts as a proactive voice in favor of stronger AI regulation. However, since the beginning of Ursula von der Leyen’s tenure, the Commission has initiated efforts to adopt stronger regulation for AI applications (i.e., differentiating regulation of AI based on defined “high-risk” and “low-risk” sectors”) and associated data spaces.27,28 These legislative proposals and their associated discussions are planned to be completed by the end of 2020. During the strategic planning and budgeting process of its R&D programs, the EU committed to providing at least EUR10.7 billion29 for AI-related research conducted between 2021 and 2027.30 Despite these financial and political efforts, the EU still remains technologically dependent on the US and China and suffers from a lack of capital and private funding, decentralized and uncoordinated AI expertise, severe brain drain (including to the US), and slow adoption of AI programming in its education and public sectors.

Transatlantic Cooperation: Despite over 40 years of scientific relationships and projects between the United States and the European Union, AI-specific collaboration has been fraught with varying degrees of political and academic skepticism on both side of the Atlantic, notably within the European Commission and the governments of some Member States (e.g., France and Germany).31 Such a dynamic is aggravated, in part, by the ever-deteriorating transatlantic relationship spurred by policy and trade disagreements, public spats, and increasing American isolationism. Despite such explicit omissions and stand-offs at the highest levels, transatlantic collaboration for AI does happen, most notably in various multilateral forums working on standards (e.g., ISO, IEC, IEEE, G7, G20) or on ethics and norms (e.g., OECD, GPAI32).33 In recent months, however, interests and political support for greater transatlantic coordination on AI seems to be increasing. This trend was notably demonstrated by a visit from Lt. Gen. Jack Shanahan—then Director of the US Department of Defense’s Joint Artificial Intelligence Center (JAIC)—to Brussels in January 2020 and a visit by the European Parliament’s delegation to Washington D.C in February 2020. Both visits included discussions on AI with a variety of key stakeholders, such as NATO, representatives from the US Congress, State Department, Federal Transit Administration (FTA), Federal Bureau of Investigation (FBI), and Privacy and Civil Liberties Oversight Board (PCLOB).34

Transatlantic collaboration for AI-related research is taking place at varying levels although these projects are relatively ad hoc and materialize within existing scientific and technological research agreements and roadmaps. For instance, the current Roadmap for US-EU Science & Technology prioritizes four areas for transatlantic cooperation, most of which leverage AI (e.g., health, transportation, bioeconomy, marine and arctic research) or promote institutions that do (e.g., European Organization for Nuclear Research or CERN).35, 36 These collaborative links are supported and promoted through a variety of arrangements and initiatives, such as BILAT 4.0, EURAXES37 or the European Network of Research and Innovation Centers and Hubs (ENRICH). In general, and despite challenges to systematically integrating US entities into European research programs, the US remains the leading non-EU (“third country”) participant in Horizon 2020,38 with over 60 participations and 1,200 partnerships.39 US funding contributions to Horizon 2020 and participation in AI-related projects, however, is meager than its broader research involvement in Horizon 2020. For instance, US collaborative links with Horizon 2020 projects can only be found in 2% of AI-related projects, 12% of deep learning projects, and 4% of machine learning-related projects.40 Accordingly, there is still plenty of room for improvement.41

### No impact

#### No emerging tech impact.

Sechser et al. 19, \*Todd S., Pamela Feinour Edmonds and Franklin S. Edmonds, Jr. Discovery Professor of Politics and Public Policy at the University of Virginia and Senior Fellow at the Miller Center of Public Affairs, \*\*Neil Narang, Associate Professor of Political Science at the University of California, Santa Barbara, \*\*\*Caitlin Talmadge, Associate Professor of Security Studies in the School of Foreign at Georgetown University. ( “Emerging technologies and strategic stability in peacetime, crisis, and war”, *Journal of Strategic Studies*, 42:6, pg. 728-729)

Yet the history of technological revolutions counsels against alarmism. Extrapolating from current technological trends is problematic, both because technologies often do not live up to their promise, and because technologies often have countervailing or conditional effects that can temper their negative consequences. Thus, the fear that emerging technologies will necessarily cause sudden and spectacular changes to international politics should be treated with caution. There are at least two reasons to be circumspect. First, very few technologies fundamentally reshape the dynamics of international conflict. Historically, most technological innovations have amounted to incremental advancements, and some have disappeared into irrelevance despite widespread hype about their promise. For example, the introduction of chemical weapons was widely expected to immediately change the nature of warfare and deterrence after the British army first used poison gas on the battlefield during World War I. Yet chemical weapons quickly turned out to be less practical, easier to counter, and less effective than conventional high-explosives in inflicting damage and disrupting enemy operations.6 Other technologies have become important only after advancements in other areas allowed them to reach their full potential: until armies developed tactics for effectively employing firearms, for instance, these weapons had little effect on the balance of power. And even when technologies do have significant strategic consequences, they often take decades to emerge, as the invention of airplanes and tanks illustrates. In short, it is easy to exaggerate the strategic effects of nascent technologies.7 Second, even if today’s emerging technologies are poised to drive important changes in the international system, they are likely to have variegated and even contradictory effects. Technologies may be destabilising under some conditions, but stabilising in others. Furthermore, other factors are likely to mediate the effects of new technologies on the international system, including geography, the distribution of material power, military strategy, domestic and organisational politics, and social and cultural variables, to name only a few.8 Consequently, the strategic effects of new technologies often defy simple classification. Indeed, more than 70 years after nuclear weapons emerged as a new technology, their consequences for stability continue to be debated.9

#### AI won’t undermine nuclear stability

Sankaran 19

(Jaganath, assistant professor at the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin, “A DIFFERENT USE FOR ARTIFICIAL INTELLIGENCE IN NUCLEAR WEAPONS COMMAND AND CONTROL”, War on the Rocks, 4/25, <https://warontherocks.com/2019/04/a-different-use-for-artificial-intelligence-in-nuclear-weapons-command-and-control/>) DB

Decision-makers who stand guard at the various levels of the nuclear weapons chain of command face two different forms of stress. The first form of stress is information overload, shortage of time, and chaos in the moment of a crisis. The second is more general, emerging from moral tradeoffs and the fear of causing loss of life on an immense scale. AI and big data analysis techniques have already been applied to address the first kind of stress. The current U.S. nuclear early warning system employs a “dual phenomenology” mechanism designed to ensure speed in detecting a threat and in streamlining information involved in the decision-making process. The early warning system employs advanced satellites and radars to confirm and track an enemy missile almost immediately after launch. In an actual nuclear attack, the various military and political personnel in the chain of command would be informed progressively as the threat is analyzed, until finally the president is notified. This structure substantially reduces information overload and chaos for decision-makers in a crisis. However, as Richard Garwin writes, the system also reduces the role of the decision-maker “simply to endorse the claim of the sensors and the communication systems that a massive raid is indeed in progress.” While the advanced technologies and data processing techniques used in the early warning system reduces the occurrence of false alerts, it does not completely eliminate the chances of one occurring. In order to address decision-makers’ fear of inadvertently starting a nuclear war, future applications of AI to nuclear command and control should aspire to create an algorithm that could argue in the face of overwhelming fear of an impending attack that a nuclear launch isn’t happening. Such an algorithm could verify the authenticity of an alert from other diverse perspectives, in addition to a purely technological analysis. Incorporating this element into the nuclear warning process could help to address the second form of stress, reassuring decision-makers that they are sanctioning a valid and justified course of action. Command and Control During the Cold War: The Importance of Big Data In the world of nuclear command and control, the pursuit of speed and analysis of big data is old news. In the early 1950s, before the advent of nuclear intercontinental ballistic missiles (ICBMs), the United States began developing the SAGE supercomputer. SAGE, which was built at approximately three times the cost of the Manhattan Project, was the quintessential big data processing machine. It used the fastest and most expensive computers at the time – the Whirlwind II (AN/FSQ-7) IBM mainframe computers – at each of 24 command centers to receive, sort, and process data from the many radars and sensors dedicated to identifying incoming Soviet bombers. The SAGE supercomputer then coordinated U.S. and Canadian aircraft and missiles to intercept those bombers. Its goal was to supplement “the fallible, comparatively slow-reacting mind and hand of man” in anticipating and defending against a nuclear bomber campaign. The proliferation of ICBMs in the 1960s, however, made the SAGE command centers “extraordinarily vulnerable.” The U.S. Air Force concluded that Soviet ICBMs could destroy “the SAGE system long before the first of their bombers crossed the Arctic Circle.” In 1966, speaking at a congressional hearing, Secretary of Defense Robert McNamara argued that “the elaborate defenses which we erected during the 1960s no longer retain their original importance. Today with no defense against the major threat, Soviet ICBMs, our anti-bomber defense alone would contribute very little…” The SAGE command centers were shut down. McNamara formed a National Command and Control Task Force, informally referred to as the Partridge Commission, to study the problem of nuclear command and control in the early days of the ICBM era. The commission concluded “that the capabilities of US [nuclear] weapon systems had outstripped the ability to command and control them” using a decentralized military command and control structure. The commission recommended streamlining and centralizing command and control with much stronger civilian oversight. The commission also advocated the formation of the modern-day North American Aerospace Defense Command, better known as NORAD, with its advanced computer and communication systems, early warning satellites, and forward-placed radars designed to track any missile launch on the planet before it could reach the continental United States. NORAD and its computer and communication systems were designed to resolve the stress from information overload by compartmentalizing and automating the process of evaluating a threat. Depending on its particular trajectory, an enemy nuclear missile may take anywhere between 35 minutes to just eight minutes to reach its target. When the launch of an enemy missile occurs, it is first picked up by early warning satellite sensors within seconds. The satellites track these missiles while the engines are still ignited. Once the missile comes over the horizon, forward-deployed radars independently track them. The data from the two systems is then assessed in the context of the prevailing geostrategic intelligence by NORAD. NORAD would then pass the assessment up the military and political chain of command. This sequence of steps ensures that senior decision-makers are not overwhelmed with information. By the time decision-makers are notified, the decision to retaliate to an apparent attack “must be made in minutes.” Future advances in AI might only add incremental improvements to the speed and quality of information processing to this already advanced nuclear early warning system. Using AI to Prevent Inadvertent Nuclear War These advances in nuclear command and control still do not directly address the second form of stress, one that emerges from the fear of a nuclear war and the accompanying moral tradeoffs. How can AI mitigate this problem? History reminds us that technological sophistication cannot be relied upon to avert accidental nuclear confrontations. Rather, these confrontations have been prevented by individuals who, despite having state-of-the-art technology at their disposal, proffered alternate explanations for a nuclear warning alert. Operating under the most demanding conditions, they insisted on a “gut feeling” that evidence of an impending nuclear war alert was misleading. They chose to disregard established protocol, fearing that a wrong choice would lead to accidental nuclear war. Consider for example a declassified President’s Foreign Intelligence Advisory Board report investigating the decision by Leonard Perroots, a U.S. Air Force lieutenant general, not to respond to incoming nuclear alerts. The incident occurred in 1983 when NATO was conducting a large simulated nuclear war exercise code-named Able Archer. The report notes that Perroots’ “recommendation, made in ignorance, not to raise US readiness in response” was “a fortuitous, if ill-informed, decision given the changed political environment at the time.” The report also states: the military officers in charge of the Able Archer exercise minimized this risk by doing nothing in the face of evidence that parts of the Soviet armed forces were moving to an unusual level of [nuclear] alert. But these officers acted correctly out of instinct, not informed guidance. Perroots later complained in 1989, just before retiring as head of the U.S. Defense Intelligence Agency, “that the U.S. intelligence community did not give adequate credence to the possibility that the United States and Soviet Union came unacceptably close to [accidental] nuclear war.” In the same year, Stanislav Petrov, a commanding officer involved in Soviet nuclear operations, also dismissed a nuclear alert from his country’s early warning system. In the face of data and analysis that confirmed an incoming American missile salvo, Petrov decided the system was wrong. Petrov later said, “that day the satellites told us with the highest degree of certainty these rockets were on the way.” Still, he decided to report the warning as a false alert. His decision was informed by fears that he “didn’t want to be the one responsible for starting a third world war.” Later recalling the incident, he said: “I had a funny feeling in my gut. I didn’t want to make a mistake. I made a decision, and that was it. When people start a war, they don’t start it with only five missiles.” Both, Perroots and Petrov feared the moral consequences of a nuclear war, particularly one initiated accidentally. They distrusted the data and challenged protocol. Conclusion Fred Iklé once remarked, “if any witness should come here and tell you that a totally reliable and safe launch on warning posture can be designed and implemented that man is a fool.” If that is true, how close can AI get us to reliable and safe nuclear command and control? AI-enabled systems may aspire to reduce some of the mechanical and human errors that have occurred in nuclear command and control. Prior instances of false alerts and failures in early warning systems should be used as a training dataset for an AI algorithm to develop benchmarks to quickly test the accuracy of an early warning alert. The goal of integrating AI into military systems should not be speed and accuracy alone. It should also be to help decision-makers exercise judgment and prudence to prevent inadvertent catastrophes.