# AFF ANSWERS

## 2AC

### Perm

#### Perm do both – US pursues unilateral actions while working jointly with NATO on the multilateral level

#### Perm do the CP – just a different way to do the aff

#### These two perms are very generic – you should write perms that are specific to your aff. You could also say “Perm do the CP then the aff, US works unilaterally and then works on the international level”

### Solvency Deficits

#### You should write solvency deficits specific to your own affirmative – tailor it to something that your aff does at the international level

### 2AC---NATO Good – Cyber/AI

#### Alliance wide integration is key to stop Russia and China’s AI and cyber operations

Helen Warrell, 21, (Helen Warrell, 6-7-2021, Financial Times, Nato allies need to speed up AI defence co-operation, https://www.ft.com/content/61c1945c-d153-4d58-b9c5-dffd99a6919e, 6-27-2022) SCade

As Russia intensifies cyber hostilities and China weaponises artificial intelligence, joining forces in the field of high-tech warfare will feature high on the list of topics discussed by Nato allies at a summit next week. But the transatlantic alliance’s 30 members will need to move fast if they aim to make up lost ground. Nato is proposing a new tech innovation centre bringing together military personnel with industry to foster digital defence start-ups. Some of these might be financed by a separate initiative, also set to be debated: a venture capital fund for innovation which member states could choose to opt in to. The efforts are belated, as Nato secretary-general Jens Stoltenberg himself acknowledged. “For decades, Nato allies have been leading when it comes to technology, but that’s not obvious any more,” he told the Financial Times in an interview last week. “We see China especially investing heavily in new, disruptive technologies like artificial intelligence, autonomous systems, big data, and they implement them into new advanced weapon systems, drones, submarines, aircraft and so on.” He is not the first to sound the alarm. Eric Schmidt, the former Google chief executive who now chairs the US’s National Security Commission on AI, warned earlier this year that Beijing was planning to undermine conventional military forces by “leapfrogging” to new technologies. The commission’s report, published in March, raised concerns that China would use AI for “reconnaissance, electromagnetic countermeasures and co-ordinated firepower strikes”. Part of the problem is that western defence institutions have been slow to recognise the potential of innovation beyond their own industry. “For decades, a lot of technological development would happen within the defence sector — the internet, nuclear, GPS, all of that was developed by the defence industry and then shared with the civilian sector,” Stoltenberg said. “Now, it goes the other way around. It’s a civilian sector which is leading in the development of artificial intelligence, quantum computing, and many of the new disruptive technologies.” Some Nato members are ahead of others. The US and France have published military AI strategies, while the UK announced this year that it is to establish a centre for defence AI. For the first time, Britain’s intelligence agency, MI6, is recruiting from the private sector for a new head of its “Q” branch — the technical lab made famous in the James Bond films. Establishing a new Nato hub — known as an “accelerator” — in which tech companies and members of the armed forces can experiment with new ideas has advantages, according to Professor Fiona Murray, co-director of MIT’s innovation initiative. Start-ups and investors do not always have the time to tackle defence challenges when solutions are “hard to test, markets are fragmented and procurement is slow”, Murray said. Working together would create a wider market for new products and enhance collective security, she noted. It was “not enough” for countries to be handling this individually, she said. The US has started marshalling allies on the policy implications of using new technology. The Pentagon’s “AI Partnership for Defense”, comprising 13 countries (including Nato members Canada, Denmark, Estonia, the UK, France and Norway) met virtually for the first time last year to agree joint military standards on AI. Schmidt’s commission has called on the Five Eyes intelligence-sharing alliance (the US, UK, Canada, Australia and New Zealand) to work more closely on developing AI systems. Ulrike Franke, an expert in military technology at the European Council on Foreign Relations, argues that Nato’s tech centre will be most effective if it prioritises systems designed to facilitate joint military operations. The alliance should look at areas such as AI-enabled command and control, she said, which could give members a unified picture of the battlefield across multiple regions, using intelligent data analysis to sift information. Franke said that in the vast arena spanning drones to quantum computing, there was a temptation to cover too much. “It makes massive sense for Nato to look more at this [technology]”, she said. “The question is, what exactly are they focusing on? There’s a danger of Nato spreading itself too thin.”

### 2AC---US-NATO Cyber Good

#### US-NATO can improve cyber awareness, defense, and sharing---leadership is key

Lieutenant Colonel Charles L. Matallana 17, (Lieutenant Colonel Charles L. Matallana 17, United States Army War College Class of 2017. “Maintaining NATO’s Relevance in the 21st Century”. , https://publications.armywarcollege.edu/pubs/3465.pdf, 6-26-2022) SCade

The NATO alliance has taken positive steps in addressing the dilemma faced from cyber-attack. Recently, a December 2016 Joint Declaration signed by the President of the European Council, the President of the European Commission, and the Secretary General of NATO highlights progress towards finding collaborative ways to improve cyber awareness and defense capabilities. The European Union and NATO will exchange concepts on the integration of cyber defense and conduct respective missions and operations to foster interoperability in cyber defense requirements and standards. 54 These declarations will help mature the ability to defend the networks and provide a cohesive response to further attacks. The challenge will be to provide the commitment of resources to realize these goals. The U.S. must continue to take the lead in expanding cooperation within the cyber domain. The advancements made within its own capacity and capability through the development of U.S. Cyber Command have allowed the U.S. to be a lead proponent of cyber defense. As a recent Heritage Foundation study noted, more can be done “through sharing experience, expanding contingency planning, increasing training and exercises.” 55 This is especially urgent with regards to the U.S. and Baltic countries cooperation given the adverse focus Russia puts on these nations as a cyber battleground with NATO.

### 2AC---NATO solves Climate Change

#### NATO cooperation and cohesion solves pandemics, bioD loss and climate change

Sherri Goodman and Katarina Kertysova, 22, (Sherri Goodman, Katarina Kertysova, 2-1-2022, NATO Review, NATO Review, https://www.nato.int/docu/review/articles/2022/02/01/nato-an-unexpected-driver-of-climate-action/index.html, 6-27-2022) SCade

NATO’s climate security agenda

Climate change has long been known as a threat multiplier and is increasingly recognised as a “shaping threat” that dramatically alters the environments in which Allied militaries will have to operate in the coming decades. From higher frequency and intensity of storms, through extreme heat and cold, to reduced supplies of drinking water and faster wear and tear of military equipment, climate change has significant implications for NATO on the tactical, operational and strategic levels. In addition to climate-related risks to military infrastructure and force readiness, more extreme weather events can also increase conflict and migration potential in and beyond NATO’s immediate neighbourhood. Born of the Cold War and designed to defend its members against any external aggression, NATO is evolving to reflect the new security reality of actorless threats, such as pandemics, biodiversity loss and climate change. As a security organisation, NATO cannot be indifferent to these challenges. For NATO to be able to fulfil its core mission of keeping the Euro-Atlantic space safe, building resilience to the impacts of a changing climate and integrating sustainable practices into military planning and capability development is a necessity, not a choice. Evolving consensus The good news is that the Alliance is not starting from scratch. For over 50 years now, NATO has been paying attention to environmental challenges, mostly through a wide range of scientific research activities. NATO has also developed six environmental protection standards (STANAGs) that concern military camps, management of waste, and sustainability of military training areas. Climate change was written into the 2010 Strategic Concept and has been factored into summit declarations since then. In 2014, NATO adopted a Green Defence Framework and integrated energy efficiency and other environmental considerations into the design of the current NATO headquarters, which was completed in 2018. The building blocks for a more ambitious and visible role with respect to climate security are already there. However, NATO as an alliance of 30 countries works by consensus, which is always evolving. As a former UN Special Envoy on Climate Change, Jens Stoltenberg began advocating for NATO to take greater climate-related action many years ago, but his efforts may have been stymied during the previous U.S. administration. The growing number of climate and weather related disasters, which continue to impact lives and livelihoods both within and outside of NATO’s borders, has marked an evident shift in awareness and acceptance of climate change as an issue of national security across the Alliance. In view of increasing societal pressure and the current political momentum, which includes the renewed U.S. leadership on climate change, NATO is now poised to push a more ambitious climate agenda.

### 2AC---US Vaccine Leadership Fails

#### The United States has had a widespread failure in expediting COVID vaccines – CP doesn’t even do enough

* Highlighted parts are how the US has failed, underlined but not highlighted are examples of things the US could do but the CP probably doesn’t do

Editorial Board of NYT, 21, (Editorial Board, The editorial board is a group of opinion journalists whose views are informed by expertise, research, debate and certain longstanding values, 5-14-2021, NYT Opinion, https://www.nytimes.com/2021/05/14/opinion/biden-covid-vaccines-world-india.html, 6-27-2022) SCade

The United States is well on its way to protecting Americans from the coronavirus. It’s time to help the rest of the world. By marshaling this nation’s vast resources to produce and distribute enough vaccines to meet global demand, the United States would act in keeping with the nation’s best traditions and highest aspirations while advancing its geopolitical and economic interests. It is a moment of both obligation and opportunity. Unfortunately, instead of a bold, comprehensive strategy to vaccinate the world as quickly as possible, the Biden administration has thus far made a string of tactical decisions: donating millions of doses to countries in need, signaling its support for patent waivers that might expedite vaccine production efforts and nudging two companies — Merck and Johnson & Johnson — to collaborate on increasing supply. These are good steps, but they are not nearly sufficient to meet the moment. The United States and the rest of the world’s wealthiest nations are facing a great moral challenge. Covax, the World Health Organization’s initiative to pool vaccine resources, remains profoundly underfunded and has failed to meet even its modest target of vaccinating one-fifth of the population in the Global South. Without a major course correction, the rest of the world will have to wait until 2023 or later for large-scale vaccination initiatives like the one underway in the United States. The consequences of this disparity are expected to be severe. Hundreds of thousands more people will get sick and die from a disease that is now preventable with a vaccine. The global economy will contract by trillions of dollars, according to the International Chamber of Commerce, and tens of millions of people will plummet into extreme poverty as the virus continues to fester and evolve in the world’s more vulnerable reaches. As global hunger rises and global life expectancy falls, instability will prevail. Already, Colombia is mired in deadly protests over the pandemic’s economic fallout. India is facing its gravest humanitarian catastrophe in a generation. As the United Nations has warned, a similar crisis in Syria would be catastrophic. President Biden can start by announcing that the United States intends to help and by appointing a vaccine czar to oversee the expansion of vaccine production. The federal government has ample legal power to compel the participation of the pharmaceutical companies, including the sharing of critical information and technologies. Congress has appropriated $16 billion to scale up production, most of which remains unspent. Increasing manufacturing capacity has proved tricky. The global demand for vaccines may be high now, but once the coronavirus pandemic recedes, it will plummet back to normal levels. Increased public ownership, for its part, would ensure that vaccine-production capacity is ready for future pandemics, which are inevitable — potentially including new coronavirus variants for which routine boosters may be required.

### 2AC---NATO Action Key – Montenegro

#### Other NATO states – like Montenegro – require US cyber help – the CP leaves NATO members defenseless

Pierluigi Paganini, 20, (Pierluigi Paganini, Pierluigi Paganini is member of the ENISA (European Union Agency for Network and Information Security) Threat Landscape Stakeholder Group and Cyber G7 Group, he is also a Security Evangelist, Security Analyst and Freelance Writer. Editor-in-Chief at "Cyber Defense Magazine", Pierluigi is a cyber security expert with over 20 years experience in the field, he is Certified Ethical Hacker at EC Council in London. The passion for writing and a strong belief that security is founded on sharing and awareness led Pierluigi to find the security blog "Security Affairs" recently named a Top National Security Resource for US. Pierluigi is a member of the "The Hacker News" team and he is a writer for some major publications in the field such as Cyber War Zone, ICTTF, Infosec Island, Infosec Institute, The Hacker News Magazine and for many other Security magazines. Author of the Books "The Deep Dark Web" and “Digital Virtual Currency and Bitcoin”., 1-20-2020, Security Affairs, Nato has sent an anti-hybrid war team to Montenegro, https://securityaffairs.co/wordpress/96627/cyber-warfare-2/montenegro-nato-hybrid-attacks.html, 6-27-2022) SCade

The Chairman of the NATO Military Committee announced that the alliance has sent a counter-hybrid team to Montenegro to face Russian hybrid attacks. Last week in Brussels, the Chairman of the NATO Military Committee (MC), Marshal Sir Stuart Peach, announced the effort of the Alliance in facing Russian hybrid attacks. The term “Hybrid warfare” refers to a military strategy which employs political warfare and blends conventional warfare, irregular warfare and cyberwarfare with other influencing methods, such as fake news, diplomacy, lawfare and foreign electoral intervention. Peach said that the NATO alliance had set up the first NATO counter-hybrid team in Montenegro. “The first NATO counter-hybrid team has been deployed to our ally state, Montenegro, with the aim of helping to strengthen Montenegro’s capacities and deterring hybrid challenges”, Peach said. Several countries, especially Russia, continue their aggressive operations against foreign states, and cyber warfare is becoming the main concern for almost any government. The official explained that since 2014 the defence spending to face hybrid threats has continued to increase, it has been estimated that by 2024 that amount will reach $ 400 billion. “NATO data shows a 4,6% increase in 2019. That is the fifth consecutive year of growth. By the end of this year, allies will have invested over $130 billion”, added Marshal Peach United States Army General Mark Milley, the highest military officer and military adviser to the President, Minister of Defence and U.S. National Security Council, accused the Russian Government of attempting to destabilize the members of the alliance and divide it. “it is evident that Russia has been trying to divide NATO and make it weaker”. General Milley said. “It would be their benefit. It would be detrimental to Europe and the US if NATO just collapsed and disintegrated.” Representatives of Montenegro’s Defence Ministry confirmed that NATO counter-hybrid team visited Montenegro in November. Experts fear that Russia could attempt to influence the forthcoming parliamentary elections that will take place in October 2020. “This visit was the first such engagement in one of the allies, and it was an important experience for Montenegro. Montenegro wants to enhance its capacities and the focus of NATO’s team was on strengthening legislative framework in this domain and its implementation”, said Ivica Ivanović, director general for defence policy. On June 5, 2017 Montenegro officially joined NATO alliance despite the strong opposition from the Russian Government that threatened to retaliate. Cybersecurity experts believe that a new wave of attacks from the cyberspace will hit the state. In February 2017, for the second time in a few months, Montenegro suffered massive and prolonged cyberattacks against government and media websites. Researchers at security firm FireEye who analyzed the attacks observed malware and exploits associated with the notorious Russia-linked APT group known as APT28 (aka Fancy Bear, Pawn Storm, Strontium, Sofacy, Sednit, and Tsar Team). Another massive attack hit the country’s institutions during October 2016 elections, amid speculation that the Russian Government was involved. Hackers targeted Montenegro with spear-phishing attacks, the malicious messages used weaponized documents pertaining to a NATO secretary meeting and a visit by a European army unit to Montenegro. At the time, the cyberspies delivered the GAMEFISH backdoor (aka Sednit, Seduploader, JHUHUGIT, and Sofacy), a malware that was used only by the APT28 group in past attacks.

### 2AC---US Failing at AI

#### The US is no longer demolishing China in the race – need full NATO cooperation to outpace China

Graham Allison and Eric Schmidt, 20, (Graham Allison Eric Schmidt, 8-1-2020, Belfer Center for Science and International Affairs, Is China Beating the U.S. to AI Supremacy?, https://www.belfercenter.org/publication/china-beating-us-ai-supremacy, 6-27-2022) SCade

The US-China Race for Artificial Intelligence Combining decades of experience advancing frontier technologies, on the one hand, and analyzing national security decisionmaking, on the other, we have been collaborating over the past year in an effort to understand the national security implications of China’s great leap forward in artificial intelligence (AI). Our purpose in this essay is to sound an alarm over China’s rapid progress and the current prospect of it overtaking the United States in applying AI in the decade ahead; to explain why AI is for the autocracy led by the Chinese Communist Party (hereafter, the “Party”) an existential priority; to identify key unanswered questions about the dangers of an unconstrained AI arms race between the two digital superpowers; and to point to the reasons why we believe that this is a race the United States can and must win. We begin with four key points. First, most Americans believe that U.S. leadership in advanced technologies is so entrenched that it is unassailable. Likewise, many in the American national security community insist that in the AI arena China can never be more than a “near-peer competitor.” Both are wrong. In fact, China stands today as a full-spectrum peer competitor of the United States in commercial and national security applications of AI. Beijing is not just trying to master AI—it is succeeding. Because AI will have as transformative an impact on commerce and national security over the next two decades as semiconductors, computers and the web have had over the past quarter century, this should be recognized as a matter of grave national concern.1,2,3 Second, China’s zeal to master AI goes far beyond its recognition that this suite of technologies promises to be the biggest driver of economic advances in the next quarter century. For the Party, AI is mission critical. The command of 1.4 billion citizens by a Party-controlled authoritarian government is a herculean challenge. Since the fall of the Soviet Union, Americans have been confident that authoritarian governments are doomed to fail—eventually. But AI offers a realistic possibility of upending this proposition. AI could give the Party not just an escape hatch from the “end of history,”4 but a claim to advance a model of governance—a national operating system—superior to today’s dysfunctional democracies. As one former Democratic presidential candidate put it: “China is using technology to perfect dictatorship.”5 It’s a value proposition that resonates with many leaders around the world. As former Google ceo Eric Schmidt has argued: “if the Soviet Union had been able to leverage the kind of sophisticated data observation, collection and analytics employed by the leaders of Amazon today, it might well have won the Cold War.” Third, while we share the general enthusiasm about AI’s potential to make huge improvements in human wellbeing, the development of machines with intelligence vastly superior to humans will pose special, perhaps even unique risks. In 1946, Albert Einstein warned, “the unleashed power of the atom has changed everything save our modes of thinking, and thus we drift towards unparalleled catastrophe.” We believe the same could be said of AI. Henry Kissinger has identified these risks in what we call “Kissinger’s Specter.” In his words, AI threatens an unpredictable revolution in our consciousness and our thinking, and an “inevitable evolution in our understanding of truth and reality.”6 In response to Einstein’s insight, the technologists and strategists who had built and used the bomb to end World War II joined forces to find ways to prevent a nuclear World War III. Meeting the challenges posed by AI will require nothing less. Fourth, China’s advantages in size, data collection and national determination have allowed it over the past decade to close the gap with American leaders of this industry. It is currently on a trajectory to overtake the United States in the decade ahead. Nonetheless, if the United States will awake to the challenge and mobilize a national effort, we believe that it can develop and execute a winning strategy.

### A2: NATO fails at AI

#### NATO initiatives prove they are successful at AI management

Colin Demarest, 22, (Colin Demarest, Colin Demarest is a reporter at C4ISRNET, where he covers military networks, cyber and IT. Colin previously covered the Department of Energy and its NNSA — namely Cold War cleanup and nuclear weapons development — for a daily newspaper in South Carolina. Colin is also an award-winning photographer!, 5-18-2022, Defense News, NATO launches AI initiative to ensure tech advantage, https://www.defensenews.com/artificial-intelligence/2022/05/18/nato-launches-ai-initiative-to-ensure-tech-advantage/, 6-24-2022) SCade

WASHINGTON — Two NATO agencies recently kicked off an artificial intelligence initiative to better understand the technology and its potential warfare applications. More than 80 AI experts, researchers and academics from the U.S. and other member countries are involved with the venture, known as a strategic “horizon scanning,” put together by the NATO Science and Technology Organization and the NATO Communications and Information Agency. An inaugural meeting and workshop was held this month in The Hague, Netherlands, where the NCI Agency’s data science and AI facilities are located. “AI is one of the key emerging and disruptive technologies identified by NATO as vital for the maintenance of its technological edge,” NATO Chief Scientist Bryan Wells said in a statement. “By working together, the STO and the NCI Agency are able to bring together global experts to ensure the very best scientific expertise is available to advise NATO and its allies and partners on the latest scientific trends in this area.” The NATO guarantee of a collective defense and the advantage of numbers, both on the battlefield and in the lab, has been much discussed amid Russia’s latest invasion of Ukraine and the subsequent membership applications made by Finland and Sweden. NATO ministers in October adopted the alliance’s first-ever AI strategy, which describes the capability as “changing the global defense and security environment” and offering “an unprecedented opportunity to strengthen our technological edge but will also escalate the speed of the threats we face.” The strategy emphasizes responsible use of AI for defense across six tenets: lawfulness; responsibility and accountability; explainability and traceability; reliability; governability; and bias mitigation. AI frameworks and other guidance drafted by the U.S. and its defense community take a similar approach. NATO allies in 2019 agreed to focus on seven emerging and disruptive technologies, data, computing and AI among them. Making sure there are shared standards, and that systems will work with systems, will be critical to success, officials said. “One of the big challenges when we go into this new phase of disruptive technologies is how do you keep all allies on the same hymn sheet when it comes down to communicating with each other, using the same technology, being interoperable,” David van Weel, NATO assistant secretary general for emerging security challenges, told Defense News in March 2021. “So that’s a big part [of the strategy] and a big role for NATO to play.”

#### Standardization and new rules solves for any of NATO shortcomings – gets NATO back to innovating

Ben Wodecki, 22, (Ben Wodecki, 5-4-2022, AI Business, NATO at risk of losing AI innovation race to Russia, China, https://aibusiness.com/document.asp?doc\_id=777260, 6-24-2022) SCade

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.

### A2: AI Timeframe too slow

* Make sure this does not conflict with parts of the aff

#### Russia autonomous weapons are hype – too many technical difficulties

Gregory C. Allen, 22, (Gregory C. Allen, Gregory C. Allen is the director of the Artificial Intelligence (AI) Governance Project and a senior fellow in the Strategic Technologies Program at the Center for Strategic and International Studies in Washington, D.C. Director, AI Governance Project and Senior Fellow, Strategic Technologies Program, 5-26-2022, No Publication, Russia Probably Has Not Used AI-Enabled Weapons in Ukraine, but That Could Change, https://www.csis.org/analysis/russia-probably-has-not-used-ai-enabled-weapons-ukraine-could-change, 6-27-2022) SCade

In March, WIRED ran a story with the headline “Russia's Killer Drone in Ukraine Raises Fears About AI in Warfare,” with the subtitle, “The maker of the lethal drone claims that it can identify targets using artificial intelligence.” The story focused on the KUB-BLA, a small kamikaze drone aircraft that smashes itself into enemy targets and detonates an onboard explosive. The KUB-BLA is made by ZALA Aero, a subsidiary of the Russian weapons manufacturer Kalashnikov (best known as the maker of the AK-47), which itself is partly owned by Rostec, a part of Russia’s government-owned defense-industrial complex. The WIRED story understandably attracted a lot of attention, but those who only read the sensational headline missed the article’s critical caveat: “It is unclear if the drone may have been operated in this [an AI-enabled autonomous] way in Ukraine.” Other outlets re-reported the WIRED story, but irresponsibly did so without the caveat. WIRED’s assessment that Kalashnikov claims the KUB-BLA “boasts the ability to identify targets using artificial intelligence” is based on two main pieces of evidence: a Kalashnikov press release about ZALA Aero’s “Artificial Intelligence Visual Identification (AIVI)” capabilities for its unmanned aircraft, and the original Kalashnikov press release announcing the KUB-BLA in 2019. However, these two pieces of evidence are less than they seem. The Russian-language AIVI press release never mentions the KUB-BLA or military applications. Instead, it describes a ZALA Aero machine-learning AI drone product line that is marketed to industrial and agricultural sectors. Incorporating modern machine-learning AI into military applications is significantly more difficult than in industrial or agricultural applications. Modern machine-learning AI using deep neural networks offers the opportunity for incredible gains in performance, but that performance depends on having lots of training data during development. Moreover, that training data needs to closely resemble operational conditions. In general, it is much easier to get such training data from commercial customers than from an enemy military, especially if friendly weapons systems and sensors do not often come within range of enemy ones. The most mature military AI applications are ones like satellite reconnaissance: even in peacetime, satellites get to take a lot of pictures of Russian and Chinese military forces, and those pictures can be digitally labeled by human experts to turn them into training data. Training data is what machine learning AI systems learn from. The combination of a learning algorithm and training data is how AI systems learn to recognize what is in the image. But training data is generally application-specific. Satellite image recognition training data only helps build satellite image recognition AI. One cannot magically use labeled satellite image data to train an AI for a robotic drone’s targeting computer (at least not with today’s technology). Getting enough of the right sort of training data to incorporate modern AI into, say, a robotic tank’s targeting computer, is a much tougher technical challenge. It is not impossible in principle, but in practice, there are far fewer opportunities to collect the right sort of training data.

#### Too many issues to create unilateral AI – multilateral offers numerous benefits

* Shared training data sets
* Increased R&D
* Increased experts to train AI
* More ways to test AI

Paul Maxwell, 20, (Paul Maxwell, Lt. Col (Ret) Paul Maxwell is the Cyber Fellow of Computer Engineering at the Army Cyber Institute at the United States Military Academy. He was a cyber and armor branch officer during his twenty-four years of service. He holds a PhD in electrical engineering from Colorado State University., 4-20-2020, Modern War Institute, Artificial Intelligence is the Future of Warfare (Just Not in the Way You Think), https://mwi.usma.edu/artificial-intelligence-future-warfare-just-not-way-think/, 6-27-2022) SCade

AI’s Shortfalls for Military Applications As the military looks to incorporate AI’s success in these tasks into its systems, some challenges must be acknowledged. The first is that developers need access to data. Many AI systems are trained using data that has been labeled by some expert system (e.g., labeling scenes that include an air defense battery), usually a human. Large datasets are often labeled by companies who employ manual methods. Obtaining this data and sharing it is a challenge, especially for an organization that prefers to classify data and restrict access to it. An example military dataset may be one with images produced by thermal-imaging systems and labeled by experts to describe the weapon systems found in the image, if any. Without sharing this with preprocessors and developers, an AI that uses that set effectively cannot be created. AI systems are also vulnerable to becoming very large (and thus slow), and consequently susceptible to “dimensionality issues.” For example, training a system to recognize images of every possible weapon system in existence would involve thousands of categories. Such systems will require an enormous amount of computing power and lots of dedicated time on those resources. And because we are training a model, the best model requires an infinite amount of these images to be completely accurate. That is something we cannot achieve. Furthermore, as we train these AI systems, we often attempt to force them to follow “human” rules such as the rules of grammar. However, humans often ignore these rules, which makes developing successful AI systems for things like sentiment analysis and speech recognition challenging. Finally, AI systems can work well in uncontested, controlled domains. However, research is demonstrating that under adversarial conditions, AI systems can easily be fooled, resulting in errors. Certainly, many DoD AI applications will operate in contested spaces, like the cyber domain, and thus, we should be wary of their results. Ignoring the enemy’s efforts to defeat the AI systems that we may employ, there are limitations to these seemingly super-human models. An AI’s image-processing capability is not very robust when given images that are different from its training set—for example, images where lighting conditions are poor, that are at an obtuse angle, or that are partially obscured. Unless these types of images were in the training set, the model may struggle (or fail) to accurately identify the content. Chat bots that might aid our information-operations missions are limited to hundreds of words and thus cannot completely replace a human who can write pages at a time. Prediction systems, such as IBM’s Watson weather-prediction tool, struggle with dimensionality issues and the availability of input data due to the complexity of the systems they are trying to model. Research may solve some of these problems but few of them will be solved as quickly as predicted or desired. Another simple weakness with AI systems is their inability to multi-task. A human is capable of identifying an enemy vehicle, deciding a weapon system to employ against it, predicting its path, and then engaging the target. This fairly simple set of tasks is currently impossible for an AI system to accomplish. At best, a combination of AIs could be constructed where individual tasks are given to separate models. That type of solution, even if feasible, would entail a huge cost in sensing and computing power not to mention the training and testing of the system. Many AI systems are not even capable of transferring their learning within the same domain. For example, a system trained to identify a T-90 tank would most likely be unable to identify a Chinese Type 99 tank, despite the fact that they are both tanks and both tasks are image recognition. Many researchers are working to enable systems to transfer their learning, but such systems are years away from production. Artificial-intelligence systems are also very poor at understanding inputs and context within the inputs. AI recognition systems don’t understand what the image is, they simply learn textures and gradients of the image’s pixels. Given scenes with those same gradients, AIs readily identify portions of the picture incorrectly. This lack of understanding can result in misclassifications that humans would not make, such as identifying a boat on a lake as a BMP.

### A2: LAWS Norms

#### Only a multilateral framework can create positive norms on LAWS

Jay Ettinger, 20, (Jay Ettinger, Jay is JD & Legal Intern, UN High Commissioner for Human Rights, Fall 2020, “Overcoming International Inertia: The Creation of War Manual for Lethal Autonomous Weapons Systems,” Minnesota Journal Of International Law, https://minnjil.org/wp-content/uploads/2021/09/Ettinger-MACRO.pdf, 6-27-2022) SCade

\*IHL = International Humanitarian Law

B. Challenges Facing the Existing Approach to Building a Legal Framework for LAWS Development and Use. With many nations aggressively pursuing LAWS technology, there is an urgent need to develop standards to influence and regulate the testing and deployment of this new technology.162 The current UN-focused approach is not progressing quickly enough to provide meaningful guidance to States.163 As stated by one observer, “the pace of diplomacy [is] falling behind the speed of technological advancement.”164 Historically, the development of IHL has been heavily dependent on state practice and consequently takes a significant amount of time for custom to ripen.165 Additionally, given the high stakes of creating a body of law that grants the use of deadly force in the name of national security, the codification of state practice into multilateral treaties is a highly sensitive and contested process.166 The process is also highly pluralistic, which while valuable for accounting for diverse interests, can make progress challenging.167 As described by Michael Schmitt, “[c]onfronted with a cacophony of inputs—private and public, military and civilian, domestic and international—the IHL lawyer frequently finds clarity and consensus elusive.”168

### NATO solves Climate

#### NATO cooperation and cohesion solves pandemics, bioD loss and climate change

Sherri Goodman and Katarina Kertysova, 22, (Sherri Goodman, Katarina Kertysova, 2-1-2022, NATO Review, NATO Review, https://www.nato.int/docu/review/articles/2022/02/01/nato-an-unexpected-driver-of-climate-action/index.html, 6-27-2022) SCade

NATO’s climate security agenda

Climate change has long been known as a threat multiplier and is increasingly recognised as a “shaping threat” that dramatically alters the environments in which Allied militaries will have to operate in the coming decades. From higher frequency and intensity of storms, through extreme heat and cold, to reduced supplies of drinking water and faster wear and tear of military equipment, climate change has significant implications for NATO on the tactical, operational and strategic levels. In addition to climate-related risks to military infrastructure and force readiness, more extreme weather events can also increase conflict and migration potential in and beyond NATO’s immediate neighbourhood. Born of the Cold War and designed to defend its members against any external aggression, NATO is evolving to reflect the new security reality of actorless threats, such as pandemics, biodiversity loss and climate change. As a security organisation, NATO cannot be indifferent to these challenges. For NATO to be able to fulfil its core mission of keeping the Euro-Atlantic space safe, building resilience to the impacts of a changing climate and integrating sustainable practices into military planning and capability development is a necessity, not a choice. Evolving consensus The good news is that the Alliance is not starting from scratch. For over 50 years now, NATO has been paying attention to environmental challenges, mostly through a wide range of scientific research activities. NATO has also developed six environmental protection standards (STANAGs) that concern military camps, management of waste, and sustainability of military training areas. Climate change was written into the 2010 Strategic Concept and has been factored into summit declarations since then. In 2014, NATO adopted a Green Defence Framework and integrated energy efficiency and other environmental considerations into the design of the current NATO headquarters, which was completed in 2018. The building blocks for a more ambitious and visible role with respect to climate security are already there. However, NATO as an alliance of 30 countries works by consensus, which is always evolving. As a former UN Special Envoy on Climate Change, Jens Stoltenberg began advocating for NATO to take greater climate-related action many years ago, but his efforts may have been stymied during the previous U.S. administration. The growing number of climate and weather related disasters, which continue to impact lives and livelihoods both within and outside of NATO’s borders, has marked an evident shift in awareness and acceptance of climate change as an issue of national security across the Alliance. In view of increasing societal pressure and the current political momentum, which includes the renewed U.S. leadership on climate change, NATO is now poised to push a more ambitious climate agenda.