**AI Ethics Case Neg**

**Inherency Resps**

**1. No Inherency – the Status Quo system solves best – DOD policy ensures ethical standards and responsible use, but retains flexibility to address future contingencies**

**Allen, 2022 - Director, AI Governance Project, Strategic Technologies Program at CSIS** [Gregory C. June 6 “DOD Is Updating Its Decade-Old Autonomous Weapons Policy, but Confusion Remains Widespread” [https://www.csis.org/analysis/dod-updating-its-decade-old-autonomous-weapons-policy-confusion-remains-widespread Acc 6/6/22](https://www.csis.org/analysis/dod-updating-its-decade-old-autonomous-weapons-policy-confusion-remains-widespread%20Acc%206/6/22) TA]

The DOD recently announced that it is planning to update DODD 3000.09 this year. Michael Horowitz, director of the DOD’s Emerging Capabilities Policy Office and the Pentagon official with responsibility for shepherding the policy, praised DODD 3000.09 in a recent interview, stating that “the fundamental approach in the directive remains sound, that the directive laid out a very responsible approach to the incorporation of autonomy and weapons systems.” While not making any firm predictions, Horowitz suggested that major revisions to DODD 3000.09 were unlikely. In general, this is good news. The DOD’s existing policy recognizes that some categories of autonomous weapons, such as cyber weapons and missile defense systems, are already in widespread and broadly accepted use by dozens of militaries worldwide. It also allows for the possibility that future technological progress and changes in the global security landscape, such as Russia’s potential deployment of artificial intelligence (AI)-enabled lethal autonomous weapons in Ukraine, might make new types of autonomous weapons desirable. This requires proposals for such weapons to clear a high procedural and technical bar. In addition to demonstrating compliance with U.S. obligations under domestic and international law, DOD system safety standards, and DOD AI-ethics principles, proposed autonomous weapons systems must clear an additional senior review process where the chairman of the Joint Chiefs of Staff, under secretary of defense for policy; and the under secretary of defense for acquisition, technology, and logistics certify that the proposed system meets 11 additional requirements, each of which require presenting considerable evidence.

**2. The JAIC solves now – it promotes cooperation on interoperability and ethical norms for responsible AI use through the Partnership for Defense.**

**Stanley-Lockman, 2021 - Center for Security and Emerging Technology** [Zoe CSET Issue Brief August “Responsible and Ethical Military AI Allies and Allied Perspectives” https://cset.georgetown.edu/publication/responsible-and-ethical-military-ai/ Acc. 4/21/22 TA]

Since DOD adopted these five principles, the JAIC has led their implementation both in staffing and in processes. Further, implementation has also included efforts related to “procurement guidance, technological safeguards, organizational controls, risk mitigation strategies and training measures.”24 On training measures in particular, the JAIC organized a RAI Champions Pilot to educate multidisciplinary military AI stakeholders on AI ethics and implementation.25 The eventual development and implementation of “governance standards” that encompass these measures, as included in the responsibilities of the JAIC Head of AI Ethics Policy, are namely geared toward internal use.26 Further, such governance standards can also guide alignment efforts with allies and partners—as then-JAIC Director Lieutenant General Jack Shanahan mentioned with regards to using ethical principles to “[forge] a path to increase dialogue and cooperation abroad to include the goal of advancing interoperability.”27 These priorities are also seen in the JAIC’s international engagement. The JAIC is focused on “shaping norms around democratic values” as one if its three pillars of international engagement.28 The other pillars of international military AI policy— “ensuring data interoperability and working to create pipelines to enable the secure transfer of technology”—also partially depend on ethics, safety, principles, and possibly even regulations.29 Importantly, some technical aspects of this engagement concerns adoption issues that are not discussed at length here.

**3. No inherency – NATO is solving now – they are setting ethical guidelines now.**

**Heikkilä, 2021 - Politico’s AI Correspondent in London** [Melissa, Politico March 31 “AI Decoded: NATO on AI warfare — AI treaty consultation — Unions call for more AI protections” https://www.politico.eu/newsletter/ai-decoded/politico-ai-decoded-nato-on-ai-warfare-ai-treaty-consultation-unions-call-for-more-ai-protections/ Acc 4/9/22 TA]

THE AI WARS: NATO is working on an AI strategy it hopes to unveil before the summer as part of its bid to maintain an edge over increasingly assertive rivals. “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, told me in an interview. What to expect: The strategy will identify ways to operate AI systems responsibly, name different uses for the technology in the military sector and provide a “platform for allies to test their AI to see whether it’s up to NATO standards,” David van Weel, NATO’s assistant secretary-general for emerging security challenges, told me. The strategy will also set ethical guidelines to govern AI systems, for example by ensuring systems can be shut down by a human at all times, and make them accountable by ensuring a human is responsible for the actions of AI systems.

**4. No inherency – The EU and the US established the Global Partnership for AI to increase collaboration and create norms for use.**

**Lawrence and Cordey, 2020 – researchers for The Cyber Project at the Belfer Center for Science and International Affairs** [Christie and Sean, August, The Cyber Project Paper “The Case for Increased Transatlantic Cooperation on Artificial Intelligence Edited by Lauren Zabierek and Julia Voo https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf Acc. 4/21/22 TA]

Another topic of de facto transatlantic collaboration and alignment is international principles for AI (i.e., norms for AI’s development, use, and governance). In that regard and as confirmed by Assistant Research Director at the Berkman Klein Center Ryan Budish, a significant conduit of collaboration has been the OECD’ Values-based Principles for the Responsible Stewardship of Trustworthy AI272 which were adopted in May 2019 by 42 countries.273 These principles—supported by the US, the EU, and most European Member States—were developed by a group of international experts from member countries, think tanks, industry, and civil society. Amongst these were staff from the NSF, Departments of Commerce and State, as well as from the European Commission and various European Member States, such as the French, Dutch and German ministries of the economy.274 Indeed, during a speech at the 2019 White House Summit on AI, Deputy Chief Technology Officer Michael Kratsios stated that the US was working with “democracies of the world that share our common values,” as illustrated by the adoption of the OECD’s AI principles.275 A more recent and promising example of and conduit for cooperation on responsible behavior is the newly founded Global Partnership for AI (GPAI). This initiative, which is grounded in the OECD AI principles was co-founded in June 2020 by the US and the EU.276 Its aims to develop AI “grounded in human rights, inclusion, diversity, innovation, and economic growth.”277 It is one of the most extensive collaborations on AI policy that exists, notably in terms of scale, diversity of experts and geographical span. As such, it is the first major coalition of likeminded states and is seen by many as an attempt to form a bulwark against China and its AI leadership ambitions. A last conduit for international norms for AI has been the G20. In June 2019, the G20 drew upon the OECD’s principles to publish its Human-Centered AI Principles.278

**5. No inherency – the military won’t build autonomous weapons because they don’t want them. We have a training advantage now.**

**Freedberg, 2019 – deputy editor for Breaking Defense** [Sydney J “The frontline of a new age in defense Artificial Intelligence” https://cdn2.hubspot.net/hubfs/2097098/MCM120\_BreakingDefense\_AI\_ebookR1%20(1).pdf Acc 5/25/22 TA]

The Real Barrier So what is stopping the Defense Department from developing AI weapons that can kill humans? The real barrier, it turns out, is not legal or technological: It’s cultural. The US military isn’t developing killer robots because it doesn’t want them. Every officer and official I’ve ever talked to on the subject, for at least eight years, has said they want AI and robotics to help the human, not replace them — and even then, they want AI primarily in non-combat functions like logistics and maintenance. In fact, Pentagon leaders seem to think taking the human out of the loop would be giving up one of American military’s most crucial advantages: the training, creativity, and, yes, ethics of its people. “The last thing I want is you to go away from this thinking this is all about technology,” then-Deputy Secretary Robert Work told us in 2015. Work, whose Third Offset Strategy first made AI a top priority for the Pentagon, has remained deeply engaged in the debate. “The number one advantage we have is the people in uniform, in our civilian work force, in our defense industrial base, and the contractors who support us.”

**6. No inherency – the DOD AI Strategy creates policies to adopt ethical AI standards and set international norms.**

**Stanley-Lockman, 2021 - Center for Security and Emerging Technology** [Zoe CSET Issue Brief August “Responsible and Ethical Military AI Allies and Allied Perspectives” https://cset.georgetown.edu/publication/responsible-and-ethical-military-ai/ Acc. 4/21/22 TA]

Following the adoption of the DOD AI Strategy in 2018, the U.S. approach to AI ethics in the defense realm can be generally broken down into three phases: (1) the DIB leading the process to define AI ethics principles, (2) DOD adopting these principles for safe and ethical AI, and most recently, (3) the beginning of more visible efforts to implement RAI across the Department and armed forces. Starting in July 2018, the DIB began its 15-month process on safe and ethical AI for defense, with the mandate of recommending principles to DOD in its capacity as an independent federal advisory committee.17 This process took the form of public consultations, listening sessions, the formation of an informal DOD Principles and Ethics Working Group, expert roundtables, a classified “red team” session, and a tabletop exercise.18 As part of these consultations, government officials from “close partner nations” were also involved—including as part of the monthly meetings of the informal DOD Principles and Ethics Working Group.19 The role of allies in the resulting DIB recommendations largely focuses on the intersection between AI ethics and international norm development. More specifically, the DIB conceived of the role of allies mainly through the lens of DOD leadership, focusing on “how AI will be developed and used, and whether there ought to be any regulation on particular applications” to mitigate potential harms.20 This is seen hand-in-hand with DOD’s “duty to the American people and its allies to preserve its strategic and technological advantage over competitors and adversaries who would use AI for purposes inconsistent with the Department’s values.”21 In other words, the DIB sees aligning technological development, deployment, and intended outcomes with democratically informed values as a strategic obligation just as much as a departure point for the U.S. to lead norm development in the international community.

**--Extend – JAIC**

**The JAIC hosted the PfD Symposium – it is a starting point for a global approach to ethical AI development.**

**Trabucco, 2020 - Research Assistant at the Centre for Military Studies at the University of Copenhagen** [Lena, May 10 “AI Partnership for Defense is a Step in the Right Direction – But Will Face Challenges” http://opiniojuris.org/2020/10/05/ai-partnership-for-defense-is-a-step-in-the-right-direction-but-will-face-challenges/ Acc 4/17/22 TA]

On September 15 and 16, 2020, the Defense Department’s Joint Artificial Intelligence Center, or JAIC, held an symposium which hosted delegations from 12 nations including Australia, Canada, Denmark, Estonia, Finland, France, Israel, Japan, Norway, the Republic of Korea, Sweden, and the United Kingdom. According to the JAIC, the symposium gathered nations furthest along in their AI development to discuss “shared lessons learned and best practices in harnessing AI for their respective and shared defense missions.” The goal of the partnership, according to DoD officials, is to promote standards for responsible AI development and establish avenues and tools for data sharing, cooperative development, and enhanced interoperability. The DoD offered few details about the framework and functioning of the partnership beyond a “forum [that] seeks to provide values-based global leadership in defense for policies and approaches in adopting AI,” according to a DoD statement. Nevertheless, some benefits and challenges are clear from the outset. The AI partnership is a step in the right direction. It offers an avenue of AI innovation that will signal consensus and cooperation between the US and crucial partners. At first glance, this cooperation may seem little more than a symbolic gesture, but this partnership was a necessary step in fostering a more reasoned and global approach to military AI development. Additionally, the partnership grants accessibility to a wider network of military and defense organizations to engage in research and development and draw on global AI talent. Adding diverse voices to the complex discussion of AI as a defense technology will yield more insightful dialogue and solutions.

**The PfD shares best practices, reaches out to new allies, and creates an ongoing forum to establish norms.**

**Stanley-Lockman, 2021 - Center for Security and Emerging Technology** [Zoe CSET Issue Brief August “Responsible and Ethical Military AI Allies and Allied Perspectives” https://cset.georgetown.edu/publication/responsible-and-ethical-military-ai/ Acc. 4/21/22 TA]

AI Partnership for Defense (PfD) In September 2020, the JAIC convened the inaugural PfD meeting, featuring virtual delegations from Australia, Canada, Denmark, Estonia, Finland, France, Israel, Japan, Norway, the Republic of Korea, Sweden, the U.K., and the United States to “shape what responsible AI looks like.”162 As of May 2021, three additional countries joined for the third PfD meeting: Germany, the Netherlands, and Singapore. As the grouping of countries makes clear, the ability to include non-treaty allies in the PfD makes it a useful format to borrow from each other’s approaches to RAI, be it to establish, refine, or implement nation-level views. Just two months before joining the PfD, for instance, Singapore prepared “preliminary guiding principles to be applied to the defence establishment in Singapore, and Singapore’s contributions to the global discussion on international norms for defence AI applications” in March 2021.163 Further, there may also be the possibility of taking aspects of responsible military AI from other countries that focus more on norms of responsible state behavior on board in the PfD format. Some allies explicitly mention a focus on norms, including the U.K. in its new national security and international policy, and Germany via its focus on arms control and emerging technologies. This normative emphasis harkens back to the U.S. approach to responsible and ethical AI in defense—which saw norms as one of the primary areas of engagement with like-minded countries. This normative focus could also benefit engagement with allies that have not yet begun any public iteration of views on responsible military AI, including Japan and South Korea. As such, the PfD’s focus on responsible AI makes it an important venue to encompass technology norms that are based on democratic values and that focus on minimizing risks in the international security environment. As a final note, it is not a coincidence that all allies surveyed here participate in the PfD. It is an important forum for them to exchange views—not only on aspects covered in this report, but potentially also the impact of civilian AI ethics frameworks and developments, as well as questions about autonomy-related aspects of human-machine teaming.

**The JAIC establishes US leadership on responsible AI use.**

**Trabucco, 2020 - Research Assistant at the Centre for Military Studies at the University of Copenhagen** [Lena, May 10 “AI Partnership for Defense is a Step in the Right Direction – But Will Face Challenges” http://opiniojuris.org/2020/10/05/ai-partnership-for-defense-is-a-step-in-the-right-direction-but-will-face-challenges/ Acc 4/17/22 TA]

On September 16, 2020, the US Defense Department (DoD) announced the launch of the AI Partnership for Defense – a multi-national partnership which will “engage military and defense organizations from more than 10 nations with a focus on incorporating ethical principles into the AI delivery pipeline,” according to Secretary Esper. Secretary Esper noted in his announcement: In February, we became the first military in the world to adopt ethical principles for the use of AI, based on core values of transparency, reliability, and governability. These principles make clear to the American people – and the world – that the United States will once again lead the way in the responsible development and application of emerging technologies, reinforcing our role as the global security partner of choice.

**AT Cohesion**

**Ethics principles cannot create cohesion – there are many other issues that must be resolved for the US to coordinate NATO**

**Trabucco, 2020 - Research Assistant at the Centre for Military Studies at the University of Copenhagen** [Lena, May 10 “AI Partnership for Defense is a Step in the Right Direction – But Will Face Challenges” http://opiniojuris.org/2020/10/05/ai-partnership-for-defense-is-a-step-in-the-right-direction-but-will-face-challenges/ Acc 4/17/22 TA]

Which brings me to the third challenge. The AI partnership symposium did not offer a coherent strategy for the partnership beyond advancing core values the participating nations find important to the AI pipeline. Peter Singer, New America Foundation fellow and strategist, noted that the US has not yet offered a coherent strategy to contrast its “near peers.” In one article, Singer said, “China has a fairly clear and robust vision of this [AI and its applications] and it is actively exporting that vision. There is absolutely no way the US can compete without offering a different and compelling vision and one that involves our friends and allies.” On the one hand, the absence of an overarching strategy gives the DoD and the AI partnership latitude to address inevitable issues that will arise. Secretary Esper noted in his address that this kind of partnership is the first of its kind and needs time to operate in the face of unforeseen challenges. But to accomplish the goal as the preferred security partner in AI, the partnership will need to substantiate its agreement with a vision more concrete than just ethical values. The AI partnership accomplishes getting some allies on board, but does not clarify what vision is driving the newfound partnership. At some point, this will need to change. In essence, the AI partnership is a necessary and welcome development in the US AI strategy, but significant legal and policy challenges are on the horizon. The three outlined here – legal interoperability, trans-Atlantic cooperation, and an uncertain coherent strategy – are certainly not exhaustive. But they represent a span of legal and policy issues the partnership are sure to encounter as it moves forward.

**No solvency –alternate causalities - adversarial disinformation will undermine cohesion by sowing discord.**

**Lin-Greenberg, 2020 - member of the MIT Security Studies Program** [Erik Vol 3, Iss 2 Spring, Texas National Security Review “Allies and Artificial Intelligence: Obstacles to Operations and Decision-Making” http://dx.doi.org/10.26153/tsw/8866 Acc 4/22/22 TA]

Adversary Manipulation and Interference Even if states were to trust their own AI technologies, rivals and malicious actors can use AI to sow discord that can hamper decision-making. Trust and close relationships are crucial when multiple states coordinate security-related decisions since policymakers must be confident that allies will not renege on commitments. Leaders have long held fears of being abandoned by allies or of being drawn into unwanted conflicts.105 These fears are magnified when leaders suggest they might not follow through with their alliance commitments or engage in provocative actions.106 Trump, for instance, raised questions about Washington’s commitment to its allies when he publicly questioned the value of defending certain NATO member states.107 An adversary could use AI to drive misinformation campaigns that latch onto these concerns in an effort to strain ties or deepen cleavages between allies. Just as adversaries can use deepfakes to interfere with operational-level coordination, they can also use AI technologies to breed confusion and mistrust that hamper strategic decision-making. Actors seeking to disrupt alliance cohesion might create deepfakes depicting leaders of alliance member states questioning the value of an alliance, criticizing other leaders, or threatening to take actions that could draw an alliance into an unwanted conflict. These falsified videos or recordings could boost uncertainty of an ally’s commitments or induce panic over fears of abandonment during a crisis. The decision-making process may be slowed as policymakers try to understand their allies’ true intentions and preferences, or convince domestic publics that an ally’s “statements” are in fact AI-produced misinformation.

**France blocks cohesion – French commitment to digital sovereignty prevents collaboration.**

**Stanley-Lockman, 2021 - Center for Security and Emerging Technology** [Zoe CSET Issue Brief August “Responsible and Ethical Military AI Allies and Allied Perspectives” https://cset.georgetown.edu/publication/responsible-and-ethical-military-ai/ Acc. 4/21/22 TA]

On this note, the French conception of controlled AI goes a step further and ties auditability to the core value of sovereignty in French strategic culture.54 This is because the relationship between auditability and control stems from geopolitical concerns. The strategy states, “France cannot resign itself to being dependent on technologies over which it has no control. […] Preserving digital sovereignty therefore also involves controlling the algorithms and their configuration, and the governance of data.”55 This need for control comes from a desire to exert independence from the “stranglehold on AI exerted by China and the United States,” including by strengthening European cooperation.56 While the geopolitical aspects and prospects of France to assert this independence are beyond the scope of this study, it is notable that they trickle into the French approach to trace the provenance of models and data. In particular, weapons are “critical applications” that will need to be auditable.57 If enforced, this means that questions about data rights and legal authorities to transfer data (including from foreign suppliers) could render AI “uncontrolled” per the French definition. Here, protectionism straddles the line of ethics and adoption, with digital sovereignty as a potential factor that determines acceptability of both. This can also be seen in the imperative to maintain “freedom of action.”58

**Domestic politics prevent alliance cohesion and interoperability – many nations cannot commit to AI**

**Lin-Greenberg, 2020 - member of the MIT Security Studies Program** [Erik Vol 3, Iss 2 Spring, Texas National Security Review “Allies and Artificial Intelligence: Obstacles to Operations and Decision-Making” http://dx.doi.org/10.26153/tsw/8866 Acc 4/22/22 TA]

Although alliances and multilateral coalitions can bolster the security of member states and the efficiency of their military operations, membership can create complications for decision-making and the coordination of military operations. First, alliances and coalitions must overcome operational challenges surrounding the integration and coordination of military forces. Modern military operations require the close coordination of participating forces, shared intelligence to guide planning and mission execution, and weapon systems capable of communicating with and operating alongside each other. The military of each alliance or coalition member state brings with it different equipment, policies, and tactics, meaning that a state’s forces may not fully integrate with the forces of its allies.42 Moreover, partners are often reluctant to share sensitive operational and intelligence information.43 Beyond these institutional issues, more commonplace matters — such as the different languages and military cultures of each member state — can hinder interoperability during contingency operations.44 Second, alliance and coalition leaders may have trouble deciding what policies their coalition should pursue. Although allies typically face a common threat and share many policy objectives, each state still maintains its own priorities and goals. State leaders therefore respond to domestic constituencies and pursue their own national interests, which, at times, may be at odds with alliance goals.45 At best, these divergent interests result in coordination problems that draw out decision-making timelines.46 At worst, they generate mistrust between partners and raise concerns of being abandoned during a crisis or “chain-ganged” into unwanted wars.47

**France is committed to digital sovereignty**

**Stanley-Lockman, 2021 - Center for Security and Emerging Technology** [Zoe CSET Issue Brief August “Responsible and Ethical Military AI Allies and Allied Perspectives” https://cset.georgetown.edu/publication/responsible-and-ethical-military-ai/ Acc. 4/21/22 TA]

54 The French imperative to maintain technological independence is stronger than any other European ally, and largely motivates French defence industrial policy as well as the political agenda of “strategic autonomy” and “digital sovereignty” at the national and European levels. Other documents that reinforce this include those referenced in footnotes 47 and 49, as well as the 2019 Defence Innovation Orientation Document (2019) and the Ministry of Armed Forces Digital Transformation: Key Concepts (2020). 55 AI Task Force, Artificial Intelligence in Support of Defence, 10. 56 This strong language intends to set the political tone for adoption, and is not purely about ethics. Further, while the “stranglehold” motivates sovereignty, there are few specifics in the strategy about hardware components or cloud capabilities, beyond the recognition that these are not French or European strengths. Auditability is only tied, here, to models and data. AI Task Force, Artificial Intelligence in Support of Defence, 10, 24.

**AT Crisis Instability**

**AI doesn’t lower the threshold for war – it is a Political, not Technological issue – banning weapons won’t solve it.**

**Del Re, 2017 – US Army Major** [Amanda “Lethal Autonomous Weapons: Take the Human Out of the Loop A paper submitted to the Faculty of the US Naval War College in partial satisfaction of the requirements for the Ethics of Emerging Military Technology Graduate Certificate. 16 June 2017 https://apps.dtic.mil/sti/citations/AD1041804 Acc 12/27/20 TA]

The above arguments against employing LAW are valid reasons to be hesitant. However, there are a few points to consider in juxtaposition with them. The “tacticization of strategy” is a problem at the higher levels of government. However, this issue has been a problem long before the idea of LAWs has been considered. The “tacticization of strategy” or the idea that technology could lower the bar to entry into war is not the problem, it is only the symptom of the problem. The problem is the misconception that technology wins wars. LAWs may contribute to that way of thinking but banning them will not make it go away.

**Turn – Banning LAWs increases the risk of hacking because it undermines research that helps cyber Defense against hacking.**

**Messinger 2015 - Research Associate at the Center on Law and Security** [Eric January 15, Just Security “Is it Possible to Ban Autonomous Weapons in Cyberwar?” https://www.justsecurity.org/19119/ban-autonomous-weapons-cyberwar/ Acc 12/27/20 TA]

Of course, those familiar with the debate over AWS in kinetic warfare have already heard arguments about potential upsides for efficacy. Yet the nature of the cyber battleground, and especially cyber defense, will provide strong incentives to employ autonomous offensive cyber systems. The cyber theater consists in whole or in part of computerized systems, where the speed of movement is not constrained by the physical limitations of feet and engines and rockets, and where the scope and scale of combat may proceed beyond the ability of human observers to comprehend in real-time. As Dorothy Denning argues, “[a]t the speed of cyber, placing humans in the loop at every step is neither practical nor desirable.” As a result, in direct analogy to defense systems such as anti-missile systems, [m]ost anti-malware and intrusion prevention systems have both manual and automated components. Humans determine what goes into the signature database, and they install and configure the security software. The processes of signature distribution, malicious code and packet detection, and initial response are automated, but humans may be involved in determining the final response. Effective cyber defenses, in short, will have to rely upon automatic routines. Further, to date, the technological development and practical adoption of autonomous weapons systems for defense has progressed further than that of autonomous offensive systems.

**Speed is non-unique – adversaries with autonomous weapons will still compress time for decision making.**

**Lin-Greenberg, 2020 - member of the MIT Security Studies Program** [Erik Vol 3, Iss 2 Spring, Texas National Security Review “Allies and Artificial Intelligence: Obstacles to Operations and Decision-Making” http://dx.doi.org/10.26153/tsw/8866 Acc 4/22/22 TA]

An adversary’s use of AI-enabled systems can also compress timelines and complicate alliance decision-making. Just as AI can boost the tempo of allied operations, it can increase the frequency and speed of a rival’s military actions. AI-enabled autonomous weapon systems that allow states to launch military operations without putting personnel in harm’s way may lead rival leaders to launch operations that they might not otherwise carry out.93 China, for instance, has developed and exported autonomous drones capable of identifying targets and carrying out lethal strikes with little or no human oversight.94 Further, a rival’s integration of AI into its command-and-control networks may speed its decision-making process. Indeed, China’s military has expressed an interest in leveraging AI for military decision-making.95 A publication from the Central Military Commission Joint Operations Command Center, for example, described how the use of AI to play the complex board game Go “demonstrated the enormous potential of artificial intelligence in combat command, program deduction, and decisionmaking.”96 These systems could be employed against the United States and its allies in the Indo-Pacific region, forcing allied commanders to respond more quickly to these threats.

**No solvency – even if the plan eliminates the risk of crisis instability from NATO weapons, Russia and China will still use Their AI.**

**Allen, 2022 - director of the AI Governance Project at the CSIS** [Gregory, May 20, “One Key Challenge for Diplomacy on AI: China’s Military Does Not Want to Talk” [https://www.csis.org/analysis/one-key-challenge-diplomacy-ai-chinas-military-does-not-want-talk Acc 6/6/22](https://www.csis.org/analysis/one-key-challenge-diplomacy-ai-chinas-military-does-not-want-talk%20Acc%206/6/22) TA]

Over the past 10 years, artificial intelligence (AI) technology has become increasingly critical to scientific breakthroughs and technology innovation across an ever-widening set of fields, and warfare is no exception. In pursuit of new sources of competitive advantage, militaries around the world are working to accelerate the integration of AI technology into their capabilities and operations. However, the rise of military AI has brought with it fears of a new AI arms race and a potential new source of unintended conflict escalation. In the May/June 2022 issue of Foreign Affairs, Michael C. Horowitz, Lauren Kahn, and Laura Resnick Samotin write: “The United States, then, faces dueling risks from AI. If it moves too slowly, Washington could be overtaken by its competitors, jeopardizing national security. But if it moves too fast, it may compromise on safety and build AI systems that breed deadly accidents. Although the former is a larger risk than the latter, it is critical that the United States take safety concerns seriously.” Such fears are not entirely unfounded. Machine learning, the technology paradigm at the heart of the modern AI revolution, brings with it not only opportunities for radically improved performance, but also new failure modes. When it comes to traditional software, the U.S. military has decades of institutional muscle memory related to preventing technical accidents, but building machine learning systems that are reliable enough to be trusted in safety-critical or use-of-force applications is a newer challenge. To its credit, the Department of Defense (DOD) has devoted significant resources and attention to the problem: partnering with industry to make commercial AI test and evaluation capabilities more widely available, announcing AI ethics principles and releasing new guidelines and governance processes to ensure their robust implementation, updating longstanding DOD system safety standards to pay extra attention to machine learning failure modes, and funding a host of AI reliability and trustworthiness research efforts through organizations like the Defense Advanced Research Projects Agency (DARPA). However, even if the United States were somehow to successfully eliminate the risk of AI accidents in its own military systems—a bold and incredibly challenging goal, to be sure—it still would not have solved risks to the United States from technical failures in Russian and Chinese military AI systems. What if a Chinese AI-enabled early warning system erroneously announces that U.S. forces are launching a surprise attack? The resulting Chinese strike—wrongly believed to be a counterattack—could be the opening salvo of a new war.

**Defense planners face uncertainty even without AI weapons.**

**Lin-Greenberg, 2020 - member of the MIT Security Studies Program** [Erik Vol 3, Iss 2 Spring, Texas National Security Review “Allies and Artificial Intelligence: Obstacles to Operations and Decision-Making” http://dx.doi.org/10.26153/tsw/8866 Acc 4/22/22 TA]

Allied decision-makers will also face uncertainty when confronting a rival’s use of AI-enabled technologies. Leaders will be forced to wrestle with whether to respond to actions carried out by AI-enabled systems — like autonomous aircraft or ships — in the same way as actions carried out by traditionally manned assets. Existing doctrine and law are generally silent on these issues, providing no guidance on the appropriate response. States have drafted domestic policies to govern their own use of autonomous weapon systems, but these regulations and international law make no distinction between how states should react to a rival’s AI-enabled military actions versus “traditional” military actions.103 Yet, decision-makers may believe that a rival’s use of AI technologies demands different responses than those involving manned platforms.104 What happens if a rival claims that an attack carried out by an AI-enabled system was the result of a flawed algorithm? Should air defense forces respond differently to an adversary’s autonomous drones that penetrate friendly airspace than to a manned aircraft that does the same? Decision-makers may find themselves with little time to consider these complicated issues, particularly as AI technology accelerates the speed of a rival’s military operations.

**AT Nuclear Instability**

**While countries will adopt autonomous systems, most countries will avoid using Destabilizing AI. Nations are Cautious about Nuclear Systems, and will only utilize autonomous AI if they enhance stability.**

**Horowitz, 2019 – prof of Political Science at Univ of Pennsylvania** [Michael with Paul Scharre, and Alexander Velez-Green “A Stable Nuclear Future? The Impact of Autonomous Systems and Artificial Intelligence” December arXiv:1912.05291 https://arxiv.org/abs/1912.05291 Acc 12/27/20 TA]

What might lead to variation in how countries make choices about the relative utility of autonomous systems? The answer could depend on how secure they feel about their non-autonomous nuclear systems. States that feel extremely secure in their second strike capabilities at present may see fewer advantages to automation. In that case, the advantages greater speed and precision but might not appear worth the potential risk of accidents. Instead, states like the United States would likely prefer to use existing non-autonomous systems for nuclear command and control and delivery. In contrast, countries whose nuclear arsenals are more insecure may be more accepting of risk and may find the perceived advantages of automation more valuable. If a country thinks that its nuclear command and control might be at risk of severe degradation or destruction, it might be more likely to automate early warning to increase its response speed, deploy autonomous nuclear delivery platforms with higher endurance, automate new aspects of target selection for nuclear delivery vehicles, or shift towards more automated nuclear launch postures. All may not happen in unison, of course, but as a general relationship, countries whose arsenals are more insecure may be more willing to take risks to better enhance their arsenal’s survivability.

**AI enhances nuclear deterrence because they provide the Speed necessary to handle the information overload in a crisis, and the Resilience to enhance deterrence.**

**Horowitz, 2019 – prof of Political Science at Univ of Pennsylvania** [Michael with Paul Scharre, and Alexander Velez-Green “A Stable Nuclear Future? The Impact of Autonomous Systems and Artificial Intelligence” December arXiv:1912.05291 https://arxiv.org/abs/1912.05291 Acc 12/27/20 TA]

A critical question is thus how militaries will employ advances in AI to influence their early warning and NC2 systems. There may be many places where militaries could employ new forms of autonomous systems to bolster the reliability and effectiveness of early warning and NC2. Human-machine teaming could help offset automation bias and thus enable the use of more autonomous systems. More advanced automation in nuclear early warning systems could allow greater situational awareness, reducing the risk of false alarms. It could also play a valuable role in helping human decision-makers process large amounts of information quickly. In this regard, automated data processing may play a critical role in helping human nuclear early warning operators to identify threats – and false cues – in an increasingly data-saturated and complex strategic environment. Increased automation in NC2 could also help to reduce the risk of accidents or unauthorized use. And an expanded role for automation in communications could help ensure that command-and-control signals reach their targets quickly and uncorrupted in highly contested electromagnetic environments. Automation could also be used to enhance defenses – physical or cyber – against attacks on nuclear early warning, command-and-control, delivery, and support systems, thereby enhancing deterrence and fortifying stability. It could also be used to bolster the resilience of vulnerable NC2 networks. For instance, long-endurance uninhabited aircraft that act as pseudo-satellites (“pseudo-lites”) to create an airborne communications network could increase NC2 resilience by providing additional redundant communications pathways in the event of satellite disruption. Automation could even enable autonomously self-healing networks – in physical or cyberspace – in response to jamming or kinetic attacks against command-and-control nodes, thereby sustaining situational awareness and command and control and enhancing deterrence.

**Autonomous AI systems are essential to Counter cyberwarfare – only Defensive LAWs can react to hacking and accidents.**

**Messinger 2015 - Research Associate at the Center on Law and Security** [Eric January 15, Just Security “Is it Possible to Ban Autonomous Weapons in Cyberwar?” https://www.justsecurity.org/19119/ban-autonomous-weapons-cyberwar/ Acc 12/27/20 TA]

Of course, those familiar with the debate over AWS in kinetic warfare have already heard arguments about potential upsides for efficacy. Yet the nature of the cyber battleground, and especially cyber defense, will provide strong incentives to employ autonomous offensive cyber systems. The cyber theater consists in whole or in part of computerized systems, where the speed of movement is not constrained by the physical limitations of feet and engines and rockets, and where the scope and scale of combat may proceed beyond the ability of human observers to comprehend in real-time. As Dorothy Denning argues, “[a]t the speed of cyber, placing humans in the loop at every step is neither practical nor desirable.” As a result, in direct analogy to defense systems such as anti-missile systems, [m]ost anti-malware and intrusion prevention systems have both manual and automated components. Humans determine what goes into the signature database, and they install and configure the security software. The processes of signature distribution, malicious code and packet detection, and initial response are automated, but humans may be involved in determining the final response. Effective cyber defenses, in short, will have to rely upon automatic routines. Further, to date, the technological development and practical adoption of autonomous weapons systems for defense has progressed further than that of autonomous offensive systems.

**AI enhances the security of a stable second strike, which is key to deterrence.**

**Horowitz, 2019 – prof of Political Science at Univ of Pennsylvania** [Michael with Paul Scharre, and Alexander Velez-Green “A Stable Nuclear Future? The Impact of Autonomous Systems and Artificial Intelligence” December arXiv:1912.05291 https://arxiv.org/abs/1912.05291 Acc 12/27/20 TA]

Uninhabited nuclear launch platforms may be seen to offer some strategic benefits to nuclear-armed states. Nuclear-armed UAVs, for instance, could be kept aloft for far longer than is possible with human pilots, decreasing fear of a disarming first strike. B-2 bomber pilots, for instance, have flown a maximum of 40-hour missions.88 By contrast, refuelable UAVs could stay aloft for several days, limited only by engine lubricants and other reliability factors. Uninhabited aircraft have already conducted 80-hour flights.89 The maximum endurance record for a refuelable aircraft is 64 days.90 The ability to keep nuclear bombers in the air for longer periods of time might offer policymakers new tools for managing escalation. Long-endurance nuclear-armed UAVs could provide policymakers with additional options for nuclear signaling, since they could be kept on-station longer than would otherwise be possible. Likewise, if they are sufficiently survivable against adversary countermeasures, nuclear-armed UAVs might improve a state’s ability to deliver nuclear weapons in a timely manner since they could be kept aloft closer to potential targets longer than their manned counterparts. For some less powerful nuclear-armed states, UAVs may also be seen as a lower-cost, longer-range alternative to human-inhabited nuclear bombers. Lower-cost systems are unlikely to be as survivable as their more expensive counterparts, however, thus limiting their utility. Nuclear delivery vehicles that leverage AI for certain functions may also be seen to provide strategic benefits. For instance, the Status-6’s notional AI-enabled counter-ASW capabilities may help to improve Russian leaders’ confidence in their secure second strike regardless of advances in U.S. missile defenses by convincing them that their nuclear-armed torpedoes will always be able to reach their targets. This might constitute an improvement to U.S.-Russian nuclear stability.91 But any such reassurance will be limited by the fact that, while torpedoes may pose a threat to coastal targets, they cannot strike inland strategic targets, such as enemy leadership redoubts, command centers, strategic forces, critical infrastructure, or population centers.92 As a result, even if automation does improve Status-6 survivability, it would constitute only a marginal improvement to the overall viability of Russia’s nuclear deterrent, since from Moscow’s perspective, U.S. missile defenses and strike capabilities could still prevent it from using missiles to hold the full range of necessary targets at risk.93

**Specifically, a fear of accidents will limit nuclear LAWs to only positive ones.**

**Horowitz, 2019 – prof of Political Science at Univ of Pennsylvania** [Michael with Paul Scharre, and Alexander Velez-Green “A Stable Nuclear Future? The Impact of Autonomous Systems and Artificial Intelligence” December arXiv:1912.05291 https://arxiv.org/abs/1912.05291 Acc 12/27/20 TA]

Many of these ways that autonomous systems could increase the resiliency and accuracy of NC2 are speculative, however. Existing automation, as the Petrov incident shows, already creates the risk of automation bias. Knowledge of this will probably make most nuclear-armed states unlikely to further automate the early warning or command-and-control processes, with two exceptions: first, in situations where human-machine teaming might be further integrated to mitigate potential false alarms; second, in situations where a state fears for its secure second strike, and believes that further automation would reinforce deterrence of a potential aggressor. It is also possible, though less likely, that more automation could occur via a highly risk-tolerant nuclear-armed state that believes automated NC2 protocols would improve its ability to manage escalation.

**AT Human Dignity**

**Autonomous Weapons will be more ethical than humans because human errors cause poor decisions**

**Arkin, 2008 – the Mobile Robot Laboratory at Georgia Institute of Technology** [Ronald “Technical Report GIT-GVU-07-11 Governing Lethal Behavior: Embedding Ethics in a Hybrid Deliberative/Reactive Robot Architecture” <https://dl.acm.org/doi/abs/10.1145/1349822.1349839> Acc 12/27/20 TA]

It is not my belief that an unmanned system will be able to be perfectly ethical in the battlefield, but I am convinced that they can perform more ethically than human soldiers are capable of. Unfortunately the trends in human behavior in the battlefield regarding adhering to legal and ethical requirements are questionable at best. A recent report from the Surgeon General’s Office [Surgeon General 06] assessing the battlefield ethics of soldiers and marines deployed in Operation Iraqi Freedom is disconcerting. The following findings are taken directly from that report: 1. Approximately 10% of Soldiers and Marines report mistreating noncombatants (damaged/destroyed Iraqi property when not necessary or hit/kicked a noncombatant when not necessary). Soldiers that have high levels of anger, experience high levels of combat or those who screened positive for a mental health problem were nearly twice as likely to mistreat non-combatants as those who had low levels of anger or combat or screened negative for a mental health problem. 2. Only 47% of Soldiers and 38% of Marines agreed that noncombatants should be treated with dignity and respect. 3. Well over a third of Soldiers and Marines reported torture should be allowed, whether to save the life of a fellow Soldier or Marine or to obtain important information about insurgents. 4. 17% of Soldiers and Marines agreed or strongly agreed that all noncombatants should be treated as insurgents. 5. Just under 10% of soldiers and marines reported that their unit modifies the ROE to accomplish the mission. 6. 45% of Soldiers and 60% of Marines did not agree that they would report a fellow soldier/marine if he had injured or killed an innocent noncombatant. 7. Only 43% of Soldiers and 30% of Marines agreed they would report a unit member for unnecessarily damaging or destroying private property. 8. Less than half of Soldiers and Marines would report a team member for an unethical behavior. 9. A third of Marines and over a quarter of Soldiers did not agree that their NCOs and Officers made it clear not to mistreat noncombatants. 10. Although they reported receiving ethical training, 28% of Soldiers and 31% of Marines reported facing ethical situations in which they did not know how to respond. 11. Soldiers and Marines are more likely to report engaging in the mistreatment of Iraqi noncombatants when they are angry, and are twice as likely to engage in unethical behavior in the battlefield than when they have low levels of anger. 12. Combat experience, particularly losing a team member, was related to an increase in ethical violations.

**Even if AI is not Perfect, it is Better than human soldiers**

**Arkin, 2008 – the Mobile Robot Laboratory at Georgia Institute of Technology** [Ronald “Technical Report GIT-GVU-07-11 Governing Lethal Behavior: Embedding Ethics in a Hybrid Deliberative/Reactive Robot Architecture” <https://dl.acm.org/doi/abs/10.1145/1349822.1349839> Acc 12/27/20 TA]

Along other lines [Sparrow 07], points out several clear challenges to the roboticist attempting to create a moral sense for a battlefield robot: • “Controversy about right and wrong is endemic to ethics”. o Response: While that is true, we have reasonable guidance by the agreed upon and negotiated Laws of War as well as the Rules of Engagement as a means to constrain behavior when compared to ungoverned solutions for autonomous robots. • “I suspect that any decision structure that a robot is capable of instantiating is still likely to leave open the possibility that robots will act unethically.” o Response: Agreed – It is the goal of this work to create systems that can perform better ethically than human soldiers do in the battlefield, albeit they will still be imperfect. This challenge seems achievable. Reaching perfection in almost anything in the real world, including human behavior, seems beyond our grasp.

**No Solvency – ALL weapons violate human dignity – not just AI**

**Pop, 2018 – diplomat for the Swiss Federal Department of Foreign Affairs** [Ariadna April 10 “Autonomous weapon systems: A threat to human dignity?” <https://blogs.icrc.org/law-and-policy/2018/04/10/autonomous-weapon-systems-a-threat-to-human-dignity/> Acc 12/27/20 TA]

Human dignity in anti-AWS arguments As we have seen above, anti-AWS arguments frequently employ Kantian terminology when invoking the concept of human dignity. Unfortunately, however, in none of these arguments do we get an account of how exactly human dignity is violated by the employment of AWS. This is not satisfactory. Unless it can be shown why the concept of human dignity mandates the prohibition of AWS, such a prohibition is not justified. Let us therefore assume that human dignity stands for unconditional, intrinsic value. Let us assume further that this intrinsic value has its source in our autonomy, understood as our ability to make self-determined choices. What can plausibly follow from such an understanding regarding the use of AWS? To be sure, if we are hurt or killed against our will, it severely impacts our ability to make our own choices. Hence, to allow AWS to deliver force is certainly incompatible with the moral value of autonomy. But how are AWS different in this regard from regular weapons? After all, any type of weapon or method of warfare, be it a remote-controlled long-distance missile, a drone, an air strike or conventional ballistic weapon, is designed to seriously harm human beings. What is it about AWS that renders them particularly reprehensible from the point of view of human dignity? I fail to see what the relevant argument could look like and have also not found any satisfactory explanation in the literature. Note that I am not saying that there are no morally questionable aspects in the employment AWS, there certainly are. My point is simply that if the morally significant dimension is taken to be human dignity, and if human dignity is understood as a value that has its source in our capacity for self-determination, then the relevant incompatibility is not restricted to a specific weapon system, but is shared by any type of force that harms our agency.

**Human dignity arguments enforce anthropocentrism – they assign humans a higher position of hierarchy than weapons based on speciesism.**

**Pop, 2018 – diplomat for the Swiss Federal Department of Foreign Affairs** [Ariadna April 10 “Autonomous weapon systems: A threat to human dignity?” <https://blogs.icrc.org/law-and-policy/2018/04/10/autonomous-weapon-systems-a-threat-to-human-dignity/> Acc 12/27/20 TA]

Anti-AWS arguments are therefore either obscure by drawing unjustified inferences or, if the inferences can be justified, they must be based on a different conception of human dignity than the one that seems to be endorsed. Finally, note that endorsing a Waldron-style account of human dignity to make sense of anti-AWS arguments is also not without its difficulties. To begin with, it would imply that it is also a violation of human dignity to be killed by other entities that occupy a lower status in the hierarch of beings, such as animals, bacteria, or even viruses. This strikes me as counter-intuitive. Moreover, it would have to be clarified why AWS that are endowed with artificial intelligence would necessarily occupy a lower status than human beings. It is problematic to simply stipulate that it is a matter of respect for the high-ranking status of human beings that they do not get hurt or killed by non-humans. This gives rise to the suspicion that ultimately, it all boils down to a form of speciesism: that in the hierarchy of being we simply consider ourselves to be the most valuable form of existence and demand to be treated accordingly, without bothering to explain why this is supposed to be the case.

**“Human Dignity” is not theoretically coherent – the aff manipulates it for political reasons**

**Pop, 2018 – diplomat for the Swiss Federal Department of Foreign Affairs** [Ariadna April 10 “Autonomous weapon systems: A threat to human dignity?” <https://blogs.icrc.org/law-and-policy/2018/04/10/autonomous-weapon-systems-a-threat-to-human-dignity/> Acc 12/27/20 TA]

It might well be that proponents of a pre-emptive ban of AWS presuppose a very different understanding of human dignity which would make it much more evident why such a ban would follow. But if that is the case, they must make the relevant argument and spell out the specific understanding of human dignity they presuppose. Otherwise, the use of human dignity is reduced to a rhetoric maneuver, an empty shell, which, depending on the context and purpose of its use, has a very different theoretical underpinning. As I see it, this renders the employment of human dignity not only extremely unattractive in trying to make a specific legal or political argument. It also renders the concept vulnerable to manipulation and thereby undermines the credibility of the debate in question. Given the importance of a serious legal and political engagement with the possibilities and limitations of AWS, such an outcome should be avoided at all cost. In order to advance the AWS debate it is therefore preferable to refrain from using the concept of human dignity altogether, at least as long as no consensus regarding its proper meaning has emerged and the relevant assumptions remain unarticulated.

**Solvency Resps**

**1. A focus on Ethics distracts attention from other aspects of Responsible Use, and leaves us vulnerable to Unethical states.**

**Stanley-Lockman, 2021 - Center for Security and Emerging Technology** [Zoe CSET Issue Brief August “Responsible and Ethical Military AI Allies and Allied Perspectives” https://cset.georgetown.edu/publication/responsible-and-ethical-military-ai/ Acc. 4/21/22 TA]

Allies with articulated views also translate their obligation to protect into language on military AI. This can be seen in arguments for the moral imperative to pursue AI-enabled capability development to maintain freedom of action and protect from adversaries whose uses of AI do not respect legal and ethical obligations.190 In these views, maintaining freedom of action can also mean maintaining interoperability, or even developing AI systems that help protect friendly forces, as most allies depend on cooperation to fill capability gaps.191 Beyond operational risks, responsibility also means incorporating ways to minimize risks in the international security environment. DOD has a role to play off the battlefield in this regard as well, including by developing norms around arms control. Allied concerns about diffusion and access, as embedded in the German international security and AI governance agenda, as well as risks that the Dutch identify, make this a compelling area for responsible AI cooperation between defense ministries. In doing so, the United States could find complementary areas of interest with allies that see responsible military AI as encompassing norms in the international environment. In fact, this may be a palatable way to move debates beyond questions exclusive to autonomous weapon systems. While autonomy in weapon systems undoubtedly introduces important questions for ethics, legality, and responsibility, the dominant attention it receives tends to overshadow other aspects of military AI. This not only includes responsible AI implementation, but potentially even the responsibility states have to defend against AI-enabled threats from less ethical adversaries. The fact that most allies are still transitioning from ethical questions wrapped up in autonomy in weapons means that DOD can facilitate and complement their views on ethical and technical dimensions of AI in non-lethal or non-autonomous systems. In doing so, it could help steward the conversation toward other, underrated aspects of ethical design, development, and deployment of military technology.

**2. NATO cooperation on ethical principles ignore incoherence in national viewpoints on AI – principles will fail in implementation**

**Trabucco and Stanley-Lockman, 2022 – prof of Political Science, University of Copenhagen and prof of Defense and Strategic Studies, Nanyang Technological University** [Lena and Zoe, The Oxford Handbook of AI Governance, March, “NATO’s Role in Responsible AI Governance in Military Affairs” https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780197579329.001.0001/oxfordhb-9780197579329-e-69 Acc 4/16/22 TA]

Externally, as AI-enabled autonomous systems enter the arsenals of more technologically advanced countries, uncoordinated ethical frameworks between Allies could pose operational risks. Without wider alignment, AI systems will have “varying technical specifications based on the legal and policy decisions made by individual governments when answering the key questions.”64 Further, although one motivation of autonomous systems is the increased safety of military personnel by removing them from dangerous situations, the lack of alignment could lead some Allies to perceive other capitals’ deployments of unmanned forces as a lack of commitment to put lives on the line, therein posing credibility risks for Allies to assure one another.65 These credibility risks can be mitigated by accountability and verification standards and procedures that NATO can implement for multinational operations, and efforts to institutionalize these procedures for AI are underway.66 While the NATO AI Strategy is expected to create a common foundation for the Alliance’s pursuit of AI, it is the implementation of principles for safe, ethical, legal, and interoperable AI that will reveal how coherent different national perspectives are. As of August 2021, only the United States and France have publicly issued their military AI strategies.67 Other allies, including Canada and the United Kingdom, have emerging views on responsible military AI, but little official information about how they implement their ethical risk assessments is publicly available.68 NATO’s influence in the functioning of joint operations and multinational military operations situates the Alliance to coordinate between how Allies implement ethical principles in their own national AI development. Specifically, NATO is well-situated to advocate for transparency, accountability, and data governance, which are also adoption factors that can translate into operational benefits, among other values.69 For example, these factors can promote coordination among Allies on ethical guidelines on the development and use of AI, as this will be a necessary foundation in any future joint operation that uses this technology. “The transatlantic partnership must focus on coordinating these core principles and systematic governance to ensure AI systems development aligns with the rule of law and democracy. In particular, this must ensure answering questions about human dignity, human control, and accountability … NATO remains the organization that can bring these two (U.S. and EU) together and establishes the ethical bottom line.”70 The issues of transparency and accountability will define the scope of future implementation. Many remaining questions and uncertainty will be addressed in NATO’s forthcoming AI ethical principles guidelines. But the guidelines adopted in 2021 do not address every ethical dilemma. Regarding accountability, especially, likely major questions will continue to affect the Alliance. As Assistant Secretary-General for Emerging Security Challenges David van Weel recently clarified, NATO will offer a framework of responsible use for the Allies—but the question of accountability for member states, as opposed to civilian technology manufacturers for example, is one principle that will not have an easy solution.71

**3. No solvency - Human control is vague which prevents it from establishing a norm.**

**Bode, 2021 - Professor of International Relations at the University of Southern Denmark** [Ingvild June 25, AutoNorms “Reflecting on the Future Norms of Warfare” https://www.autonorms.eu/reflecting-on-the-future-norms-of-warfare-2/ Acc. 5/27/22 TA]

We may therefore continue to have two parallel processes shaping the norms of war and conflict that do not necessarily overlap. Further, even if states agree on setting a legal norm defining a necessary quality of human control, that legal norm is likely going to be ambiguous in character, providing states with a significant amount of leeway. States may therefore continue to engage in use of force practices with AWS in much the same way as before the legal norm was in place. Norms that have emerged as part of practices of designing and using AWS therefore run the risk of undercutting deliberative legal efforts. To counter these dynamics, it is vital that such silent norm-making processes are closely examined closely and publicly expressed. Autonomous weapon systems and an emerging norm of human control The debate about autonomous weapons systems poses fundamental questions to the extent to which the use of force in conflict and warfare, as well as the very application of international law, remains in human hands. At first glance, practically all states parties addressing the Group of Governmental Experts (GGE) on emerging technologies in the area of LAWS highlight the importance of maintaining human control over the use of (lethal) force. The most substantial outcome of the GGE yet, the Guiding Principles on LAWS, includes a principle on human-machine interaction. We can therefore observe the potential making of a new legal norm, if states proceed towards a negotiation stage. This option has arguably gathered steam after the ICRC’s clear positioning in favour of new international law around LAWS in May 2021. But any consensus on what quality of human control is appropriate is yet to emerge. Many states favour a long-term view on human control as something that should be present throughout the entire life cycle of a weapon system from design to operation. Further, the US and Australia have argued that autonomous features can enhance human control in specific use of force situations by “effectuating the intent of commanders”. This perspective treats AI as a straightforward extension of human agency. Such thinking downplays the complexity of human-machine interaction and how this challenges the decision-making capacity of humans operating (or working in teams) with AI-driven weapon systems. Indeed, we must consider the extent to which the technology itself, having been designed and conceptualised in a certain way, can itself become a change agent for shaping (new) legal norms.

**4. Russia and China take out solvency – they will not model plan.**

**Thornton, 2019 - Senior Lecturer in the Centre for Defence Education Research and Analysis, King’s College** [Rod, “One to ponder: the UK’s ethical stance on the use of Artificial Intelligence in weapons systems https://defenceindepth.co/2019/06/17/one-to-ponder-the-uks-ethical-stance-on-the-use-of-artificial-intelligence-in-weapons-systems/ Acc 4/16/22 TA]

With such sentiments abroad, it is no surprise then that the official UK line is that none of its offensive weapons systems will be capable of attacking targets without some degree of human control. As one Ministry of Defence spokesperson put it: ‘The United Kingdom does not possess fully autonomous weapon systems and has no intention of developing them’. This is a laudable but debateable statement. Surely, the UK will be developing purely defensive AI system that are fully autonomous – anti-missile missile systems, for instance – where speed of reaction cannot be left to dithering humans. In a broader sense, though, this is a declared restriction that could put UK forces at a serious disadvantage on future battlefields when it comes to the employment of LAWS. It cannot really be imagined that the likes of China and Russia, as they develop their AI systems, will feel limited by ethical sentiment. Their view will be that they cannot afford to be. They both see themselves as weaker militarily than the combined forces of NATO and its partner countries and, as such, have doctrinally declared that they will be seeking out any asymmetric advantage they can. If these Western powers – including the UK – want to self-restrict their use of LAWS, for instance, then this will be seen by Beijing and Moscow as a weakness to be exploited in an asymmetric sense. There may then come a future scenario where UK force elements, facing adversaries with different ethical standards and free to deploy their ‘killer robots’, would be unable to reciprocate with their own. They could be left exposed; fighting with one arm behind their back.

**5. No solvency - The US cannot lead AI collaboration – we are not the AI leader, we lack the AI workforce, and funding is insufficient**

**Lawrence and Cordey, 2020 – researchers for The Cyber Project at the Belfer Center for Science and International Affairs** [Christie and Sean, August, The Cyber Project Paper “The Case for Increased Transatlantic Cooperation on Artificial Intelligence Edited by Lauren Zabierek and Julia Voo https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf Acc. 4/21/22 TA]

Despite the momentum within the US federal government to prioritize AI and align efforts across the interagency to maintain America’s AI leadership, there are three key challenges that imperil the ability of the US to achieve its strategic goals. Private Sector Landscape: The US leads in many metrics of AI innovation. Notably, the US has the greatest number of AI-related startups and the largest amount of venture capital and private equity funding for AI.151 However, as already described in The Case for Transatlantic Cooperation, China’s AI-related private industry and private funding, combined with government funding, a lack of regulation, and widespread economic espionage constitute threats to America’s edge.152 The decentralized US approach, uncertainty across the US private sector on how to balance sometimes competing economic and ethical considerations, and the weak funding and information sharing links between government, academia, and industry could also hinder US efforts at AI leadership.153 Workforce & AI Talent: As already mentioned, since 2016 the US government has recognized that it needs to build up its domestic workforce of AI talent as the demand exceeds the supply. According to Acting Director of the JAIC Nand Mulchandani, a significant amount of AI talent chooses to work in the private sector. As a result, the US Government’s focus is on leveraging commercial AI offerings instead of only focusing on building internal AI talent.154 Recognizing the growing lucrative nature of the private tech industry, students at American universities are increasingly demanding classwork focused on AI-related fields like computer science. However, universities are unable to match this demand with an appropriate expansion of tenure-track faculty in the same areas.155 US immigration policy also threatens America’s AI edge. Countries like Canada, the UK, and China have reformed their visa processes to attract foreign talent focused on AI research.156 The US may lose its attractiveness to foreign researchers and AI experts if it does not similarly ease immigration procedures including vis-à-vis China, whose nationals have historically been part of America’s science and technology innovation workforce.157 AI Funding: Although the Administration has pledged to increase (non-defense and defense) AI-related spending and absolute AI R&D budget numbers have increased, there are concerns that these numbers may not accurately reflect development. First, as AI-related expenditures have increased, the budget for all government R&D has decreased.158 For example, the President’s budget request for cuts in R&D at NSF, NIH, DOE, and other agencies, would force these government entities to prioritize AI R&D to the detriment of other, potentially equally useful R&D.159 Second, without full transparency about the procedures undertaken to re-classify projects as AI-related, it is not possible to fully credit the supposed increase in AI-related R&D to new AI projects. One analysis by Bloomberg Government of the Pentagon’s FY2020 budget found that approximately 27% of the legacy AI-related activities had not included any AI components or descriptors in the previous year budget.160,161 Observers have suggested that the DoD was partaking in “AI-washing,” or exaggerating the increase in its AI-related R&D to meet government imposed objectives. 162 The US government will need to be careful that initiatives to enhance AI innovation do not foster a zero-sum competition between AI and other S&T research but instead foster genuine innovation.

**6. No solvency – most AI technology is available from private companies – this guarantees circumvention.**

**Horowitz, 2018 – prof of political science at the Univ of Pennsylvania** [Michael C., May, Texas National Security Review, The Scholar “Artificial Intelligence, International Competition, and the Balance of Power” <https://tnsr.org/2018/05/artificial-intelligence-international-competition-and-the-balance-of-power/> Acc 5/14/22 TA]

What countries benefit from AI will depend in part on where militarily-relevant innovations come from. Non-military institutions, such as private companies and academic departments, are pushing the boundaries of what is possible in the realm of artificial intelligence. While some AI and robotics companies, such as Boston Dynamics, receive military research and development funding, others, such as DeepMind, do not, and actively reject engaging with military organizations.12 Unlike stealth technology, which has a fundamentally military purpose, artificial intelligence has uses as varied as shopping, agriculture, and stock trading. If commercially-driven AI continues to fuel innovation, and the types of algorithms militaries might one day use are closely related to civilian applications, advances in AI are likely to diffuse more rapidly to militaries around the world. AI competition could feature actors across the globe developing AI capabilities, much like late- 19th-century competition in steel and chemicals. The potential for diffusion would make it more difficult to maintain “first-mover advantages” in applications of narrow AI. This could change the balance of power, narrowing the gap in military capabilities not only between the United States and China but between others as well.

**7. It is impossible to ban autonomous AI systems – there is no agreed upon definition of lethal autonomy.**

**Horowitz, 2019 - Professor of Political Science, University of Pennsylvania** [Michael C. May 2“When Speed Kills: Autonomous Weapon Systems, Deterrence, and Stability” https://ssrn.com/abstract=3348356 Acc 12/27/20 TA]

The arms control dilemma, in this case, is that the more the possession of LAWS improves the ability of a military to fight and win the nation’s wars, the harder it will become for the international community to effectively regulate them. That does not make regulation impossible, to be clear. But the dynamic described above whereby the dual-use character of AI means some types of LAWS could be accessible to many militaries, not just major powers, means a broader set of states would have something to lose, from a capabilities perspective, through regulation. It also gives a broader number of states potential interest in regulation. Uncertainty surrounding the definition of a lethal autonomous weapon system, though not a central focus of this paper, could also make traditional arms control more difficult. From nuclear treaties like the Limited Test Ban Treaty to the Ottawa Convention, successful arms control agreements have generally tackled discrete technologies. The breadth of the category of AI and difficulties in defining what constitutes a lethal autonomous weapon system at the margins are making reaching agreement on a definition of lethal autonomous weapon system challenging at the international level.

**8. Technological Determinism takes out solvency – NATO is too committed to competition for innovation.**

**Trabucco and Stanley-Lockman, 2022 – prof of Political Science, University of Copenhagen and prof of Defense and Strategic Studies, Nanyang Technological University** [Lena and Zoe, The Oxford Handbook of AI Governance, March, “NATO’s Role in Responsible AI Governance in Military Affairs” https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780197579329.001.0001/oxfordhb-9780197579329-e-69 Acc 4/16/22 TA]

A number of NATO entities carry out strategic and policy planning, recognizing the importance of policy alignment to sustain political strength and military effectiveness. As relates to S&T, allies’ representations to NATO, defense ministries, and policy entrepreneurs from the relevant entities summarized in Table 69.1 support and negotiate how the Alliance approaches EDTs. NATO’s strategic documentation and forward-looking policy analysis incorporates hints of technological determinism, including noting how technological change inevitably shapes the future strategic and operating environment. Further, the connections between technology and competitive advantage over adversaries and competitors are embodied in the Alliance’s desire to maintain its “technological edge” as the “foundation upon which NATO’s ability to deter and defend against potential threats ultimately rests.”50 This places technology squarely within NATO’s core purpose of deterrence and defense—and while this signals NATO’s express commitment to technology through these channels, this reliance on technology also obscures whether NATO’s governance capacity will be adaptive, anticipatory, or participatory. This position of technological determinism may result in more limitations for AI governance.

**9. No solvency – it is easy to circumvent Human Control Norm – weapons can shift easily from autonomous to non-autonomous.**

**Kania 2018 - fellow with the Technology and National Security Program at the Center for a New American Security** [Elsa B. “China’s Strategic Ambiguity and Shifting Approach to Lethal Autonomous Weapons Systems” April 17, 2018 <https://www.lawfareblog.com/chinas-strategic-ambiguity-and-shifting-approach-lethal-autonomous-weapons-systems> Acc 12/27/20 TA]

China argues that lethal autonomous weapons are characterized by: lethality; autonomy, “which means absence of human intervention and control during the entire process of executing a task” “impossibility for termination” such that “once started there is no way to terminate the device”; “indiscriminate effect,” in that it will “execute the task of killing and maiming regardless of conditions, scenarios and targets”; and “evolution,” “through interaction with the environment the device can learn autonomously, expand its functions and capabilities in a way exceeding human expectations” (emphasis added throughout). Banning weapons systems with those characteristics could be a symbol, while implicitly legitimizing the development of semi-autonomous or even fully autonomous systems that do not possess such qualities. By such a standard, a weapons system that operates with a high degree of autonomy but involves even limited human involvement, with the capability for distinction between legitimate and illegitimate targets, would not technically be a LAWS, nor would a system with a failsafe to allow for shutdown in case of malfunction. Interestingly, this particular definition is much more stringent than the Chinese military’s own definition of the concept of “artificial intelligence weapon.” According to the dictionary of People’s Liberation Army Military Terminology, an artificially intelligent weapon is “a weapon that utilizes AI to automatically [] pursue, distinguish, and destroy enemy targets; often composed of information collection and management systems, knowledge base systems, assistance to decision systems, mission implementation systems, etc.,” such as military robotics. Because this definition dates back to 2011, the Chinese military’s thinking has evolved as technology has advanced. It is important, therefore, to consider that there may be daylight between China’s diplomatic efforts on autonomous weapons and the military’s approach.

**10. No solvency – it is impossible to Verify human control**

**Horowitz, 2019 - Professor of Political Science, University of Pennsylvania** [Michael C. May 2“When Speed Kills: Autonomous Weapon Systems, Deterrence, and Stability” <https://ssrn.com/abstract=3348356> Acc 12/27/20 TA]

Jervis argues that arms races occur due to a security dilemma when states have the ability to measure each other’s capabilities, but not their intentions.57 LAWS could be especially risky in this regard because of potential opacity about capabilities, in addition to the “normal” opacity that exists about intentions. First, it will be extremely difficult for states to credibly demonstrate autonomous weapon capabilities. The difference between a remotely-piloted system and an autonomous system is software, not hardware, meaning verification that a given country is operating an autonomous system at all would be difficult. Second, uncertainty about the technological trajectory of machine learning and specific military applications means that countries might have significant uncertainty about other countries’ capabilities. Thus, countries might invest a lot in artificial intelligence applications to military systems due to fear of what others are developing.

**--Extend - Trade Off**

**Focusing on autonomy in AI weapons trades off with other AI Issues like cyber security and reliability**

**Stanley-Lockman, 2021 - Center for Security and Emerging Technology** [Zoe CSET Issue Brief August “Responsible and Ethical Military AI Allies and Allied Perspectives” https://cset.georgetown.edu/publication/responsible-and-ethical-military-ai/ Acc. 4/21/22 TA]

Overall, the absence of concrete German, European, or transatlantic military AI frameworks means that industry has a different starting point when determining the most appropriate framework for responsible military AI. There is no immediately available information on government-guided implementation and requirements validation. With the government more focused on arms control, the German interest in a whole-of-lifecycle approach to AI governance may turn into a delegation of labor—with government looking at responsible use and diffusion and industry focusing on development. The mix here of both self-regulation and waiting for multilateral guidance indicates a clear German interest in military AI governance and ethics—even if more narrow questions around autonomy in weapon systems continues to monopolize public debate. This focus on autonomy in weapons is an important factor in assessing the degree of coherence between U.S. and German approaches to military AI, as it risks overwhelming less controversial issues. Beyond FCAS, the limited bandwidth for AI ethics beyond the tip of the spear could also mean the countries have different bases for how they develop and procure defensive systems and countermeasures. Further, it is not yet clear how the German military government is looking at AI ethics that are separate from autonomy in weapons. Without this separation, it could be more difficult to coalesce on views like the importance of cybersecurity and operator training to building trustworthy, reliable AI for defense.

**--Extend - Political Obstacles**

**Political obstacles block NATO cooperation and leadership on Responsible AI use.**

**Trabucco and Stanley-Lockman, 2022 – prof of Political Science, University of Copenhagen and prof of Defense and Strategic Studies, Nanyang Technological University** [Lena and Zoe, The Oxford Handbook of AI Governance, March, “NATO’s Role in Responsible AI Governance in Military Affairs” https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780197579329.001.0001/oxfordhb-9780197579329-e-69 Acc 4/16/22 TA]

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

**--Extend - Russia and China**

**The plan will not solve Chinese AI – they are not concerned about ethical issues.**

**Heikkilä, 2021 - Politico’s AI Correspondent in London** [Melissa, Politico March 31 “AI Decoded: NATO on AI warfare — AI treaty consultation — Unions call for more AI protections” https://www.politico.eu/newsletter/ai-decoded/politico-ai-decoded-nato-on-ai-warfare-ai-treaty-consultation-unions-call-for-more-ai-protections/ Acc 4/9/22 TA]

The China question: Beijing supports banning the use of these weapons, but not their development or production. The U.S. and NATO have argued that they need to keep autonomous lethal weapons in their arsenals as deterrence and defense against “malign” actors — all very reminiscent of the Cold War and nuclear politics. Van Weel, the assistant secretary-general, said: “China has a seamless flow of these new technologies from the private sector into the defense realm. 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.” Coyle doesn’t trust Beijing either, calling it an “insincere partner in many of their multilateral agreements.”

**Chinese motives on ethics in AI are unknown due to secrecy.**

**Allen, 2022 - director of the AI Governance Project at the CSIS** [Gregory, May 20, “One Key Challenge for Diplomacy on AI: China’s Military Does Not Want to Talk” [https://www.csis.org/analysis/one-key-challenge-diplomacy-ai-chinas-military-does-not-want-talk Acc 6/6/22](https://www.csis.org/analysis/one-key-challenge-diplomacy-ai-chinas-military-does-not-want-talk%20Acc%206/6/22) TA]

The truth, unfortunately, is that—despite the United States’ efforts at transparency and requests for dialogue—the United States knows very little about how seriously the Chinese military considers ethics in its use of AI, how robust Chinese test and evaluation processes are, and what governance structures and procedures exist to reduce the risk of military AI accidents. That secrecy in and of itself is a source of risk to international peace and security. But, then again, what incentive does China have to substantively engage? The United States is already providing a great deal of transparency around its own risk reduction efforts, and China is already garnering many reputational benefits from calling for dialogue without any of the costs of substantively participating. Perhaps neither the U.S. government nor the Chinese scholarly community can succeed in persuading the PLA that it is in everyone’s best interest for this dialogue to occur. At the very least, however, it should be clear to the international community that China is the one refusing to talk.

**--Extend - No Definition**

**States the utilize Autonomous Weapons have an incentive to disagree over definitions**

**Thornton, 2019 - Senior Lecturer in the Centre for Defence Education Research and Analysis, King’s College** [Rod, “One to ponder: the UK’s ethical stance on the use of Artificial Intelligence in weapons systems https://defenceindepth.co/2019/06/17/one-to-ponder-the-uks-ethical-stance-on-the-use-of-artificial-intelligence-in-weapons-systems/ Acc 4/16/22 TA]

Given its declared position, it might seem logical for the UK to push for an international ban on the use of LAWS. Trying to level the playing field so that no other state possessed them would seemingly work to the UK’s advantage. A ban is also the favoured UN option. UN Secretary General António Guterres has, for instance, described LAWS as ‘morally repugnant’. Within the UN, however, the UK is part of a group of states (alongside Australia, Israel, Russia and US) that has collectively stated that currently they do not want to see any regulation that forbids the use of LAWS. To explain the UK’s position, an MOD spokesperson said that, ‘We believe a pre-emptive ban is premature as there is still no international agreement on the characteristics of lethal autonomous weapons systems’. We are thus back to the thorny problem of definitions. If we do not know what something is then how can it be banned? The question here, though, is why is the UK trying to prevent a ban on a weapon it has ‘no intention’ of developing itself? This does not look very ethical or, indeed, sensible. It seems to be giving licence to potential adversaries to continue with their own development of LAWS while the UK sits on its AI hands. Whatever the UK’s position, it seems that LAWS will prove impossible to ban anyway. Firstly, because the world’s major states will be seeing the benefits of LAWS there will probably (and maybe conveniently?) never be an internationally agreed definition on them, which would then allow any ban to accrue. Secondly, the technology that underpins any ‘killer robot’ will come to be developed anyway in the civilian sector – with systems designed, for instance, to deliver parcels or to tackle forest fires. Any military organisation could simply buy such systems off the shelf and convert them readily into LAWS. The genie will thus be out of the bottle on LAWS fairly soon anyway and can never be put back in. It will therefore, and unfortunately, be very hard for the UK to maintain a credible stance as a ‘pioneer in ethical AI’.

**No solvency – it is impossible to ban LAWs because there is no solid definition of LAWs.**

**Lewis, 2020 - Research Director of the Harvard Law School Program on International Law and Armed Conflict** [Dustin September 28, “An Enduring Impasse on Autonomous Weapons” <https://www.justsecurity.org/72610/an-enduring-impasse-on-autonomous-weapons/> Acc 12/27/20 TA]

The Current Impasse The current impasse on autonomous weapons might be traced to at least two factors. The first concerns definitions. There are widely differing conceptions of autonomous weapons and their technical characteristics (at least for purposes of the GGE). And there is also a divergence on sequencing, especially whether States must first agree on minimal definitional elements before taking more concrete steps or, alternatively, whether countries can develop a political declaration (or even a legal instrument) without first establishing agreement on what specific technologies are of concern. The second factor is a significant difference of views on what international law already permits, mandates, and prohibits in practice and corresponding positions on whether or not the law is satisfactory.

**1NC - Military Technology DA**

**NATO’s current AI policy focuses on competition, innovation and speed, not ethics regulations**

**Lanata, 2020 - General, French Air Force Supreme Allied Commander Transformation** [Andre, NDC Research Paper No.15 – December forward to ““NATO-Mation”: Strategies for Leading in the Age of Artificial Intelligence” by Andrea Gilli https://www.ndc.nato.int/news/news.php?icode=1514 Acc 4/21/22 TA]

Many of its proposals closely match Allied Command Transformation (ACT) efforts to lead the transformation of NATO’s military instrument of power, and principally ACT’s own contribution to the establishment of a NATO AI strategy. This strategy should aim at: leveraging AI to out-think, out-perform, and out-pace our potential adversaries; improving decision making at every NATO echelon; optimizing performance of priority NATO capabilities; and driving agility and continuous improvement. Such a strategy requires efforts in various directions. We should start by sourcing commercially mature AI applications to demonstrate value and create early momentum for the adoption of AI. We must also improve our ability to pro-actively shape the AI technology investment landscape and development of the defence specificities. Moreover, NATO has to rethink its operating model and organization with a prime focus on speed. Finally, NATO will need to scale AI with a technology and talent foundation, meaning we need to establish a NATO Infostructure. A key condition to implement successfully these lines of effort is truly embracing innovation and agility. ACT, as one of the leading agents for innovation at NATO, has taken bold steps in this direction in the last two years. We established an Innovation Branch, a place where our innovators are “protected and nurtured”, to use the words of the “NATO-mation” study. As part of it, our Innovation Hub has been equipped with an “Open Innovation Lab” capability, implementing state-of-the-art agile methodologies (“DevSecOps”4). Our Innovation motto, “Start Small, Think Big, and Scale Up towards Full Scale Continuous Innovation”, is a concrete way to phrase the “3S” strategy approach proposed by the “NATO-mation” study. The Lab is notably exploring currently the potential of AI to mine and analyze open source datasets to provide Intelligence communities easily-accessible, supplementary data facilitating target area risk assessment during mission planning and real time operations. We need to build upon these successful experimentations and adopt the agile approach at the NATO Enterprise level. This is the intent of the proposals put forward with our sister command, Allied Command Operations, and of the partnership we established this summer with the NATO Communications and Information Agency (NCIA) to work towards the adoption of DevSecOps in NATO at scale. Scaling up is also about appropriately funding innovation, an imperative that we have raised on numerous occasions and that I will continue to advocate with passion. On another note, ACT strives to cultivate an innovative workforce through our regular “i3” (initiate, innovate, imagine) events, and bring fresh perspective to NATO through our young disruptor forum, Hackatons and Innovation Challenges. We also explore the potential of emerging technologies through Disruptive Technology Assessment Games in order to help build concretely common understanding among the Allies, and address the interoperability issues upstream via our TIDE Sprint events. We have established a pool of expertise on data within ACT, notably missioned to advocate for NATO to become a Data Driven Organisation. Last but not least, we support NATO HQ to progress on the key ethical questions raised by the adoption of AI for military purposes. On this topic, I am convinced that we will identify these issues as we progress – we are just at the beginning of our journey. My message to our political leaders is that the ethical reflections are essential but must not slow us down in the exploration of the potential of this technology and in our R&D efforts. This study comes in handy to make our case on the necessity to continue these efforts!

**Ethical limits undermine military readiness and deterrence – they will give a strategic edge to other nations.**

**Wilner, 2018 - Professor of International Affairs, Carleton University** [Alex “Artificial Intelligence and Deterrence: Science, Theory and Practice” <https://www.sto.nato.int/publications/STO%20Meeting%20Proceedings/STO-MP-SAS-141/MP-SAS-141-14.pdf> Acc 6/4/22 TA]

And finally, ethical and legal limitations on how AI is used in battle may dictate how some countries behave and others respond. While some states, notably the United States and several European allies, are openly against providing AI with the right or the means to kill individuals without human intervention – French President Emanuel Macron explained, for instance, while promoting his country’s new AI innovation strategy in 2018, that he was “dead against” the idea48 – other countries appear far less concerned. China, Russia, Israel, and others, for example, may be more willing to delegate decisions – including those that result in human death – to Artificial Intelligence. Under certain conditions, doing so may provide these countries with a tactical, strategic, or coercive advantage over those inclined to keep humans in or on the loop. It may likewise provide these countries with a means to counter-coerce, influence, or otherwise manipulate countries that are more constrained and refrained in the way they use their AI in battle.

**Human control undermines military AI development – autonomy is the key to improving speed and communications.**

**Sauer, 2021 - Senior Research Fellow at Bundeswehr University** [Frank serves on the International Panel on the Regulation of Autonomous Weapons IRRC No. 913 March “Stepping back from the brink: Why multilateral regulation of autonomy in weapons systems is difficult, yet imperative and feasible” https://international-review.icrc.org/articles/stepping-back-from-brink-regulation-of-autonomous-weapons-systems-913 Acc 4/5/22 TA]

The second reason why regulating autonomy in weapons systems is difficult is the enormous military significance ascribed to it. This pertains to the five permanent members of the UN Security Council, but also to other countries with technologically advanced militaries such as, to give but two examples, Israel and Australia. The hurdle itself is not new, of course. It is observable in other regulatory processes of the recent past, such as the ones on landmines, cluster munitions and blinding laser weapons, with the latter being achieved within the CCW framework.30 However, blinding lasers always represented an exotic niche capability that States could forego without great perceived military costs. Landmines and cluster munitions, too, had specific fields of use and were at least partly substitutable. This is not the case with weapon autonomy. Its impact is perceived to be game-changing for militaries in at least two domains of major significance. First, weapon autonomy promises a whole range of operational and strategic advantages by rendering constant control and communication links obsolete. The militarily beneficial effects of this innovation, proponents argue, are manifold. It allows for a new level of force multiplication (with a single human operating several, dozens or hundreds of systems at once), creates the possibility of “swarming” (opening up new possibilities for overwhelming the enemy and evading counter-fire),31 reduces personnel costs and increases a system's stealth in the electromagnetic spectrum (offering insurance against communications disruption or hijacking). Most importantly, however, it removes the inevitable delay between a remote human operator's command and the system's response. Swifter reaction times generate a key tactical advantage over a remotely controlled and thus slower-reacting adversarial system. In fact, the promise of gaining the upper hand by allowing for the completion of the targeting cycle at machine speed is arguably the main motivation behind increasing weapon autonomy.32 Second, weapon autonomy promises to help prevent some of the atrocities of war and render warfare more humane. Since machines know no fear, stress or fatigue and are devoid of negative human emotions, they never panic, overreact or seek revenge, it is argued. Since they lack a self-preservation instinct, they can always delay returning fire. They supposedly allow not only for greater restraint but also – eventually, when technology permits – for better discrimination between civilians and combatants, thus resulting in the potential to apply military force in stricter accordance with the rules of international humanitarian law (IHL). This would add up to an overall ethical benefit – in a utilitarian sense.33 In sum, the perceived transformative potential of weapon autonomy and the quantity and quality of military benefits ascribed to it render it more significant when compared to specific weapon categories, such as landmines or cluster munitions, that have been subject to humanitarian disarmament in the recent past.

**Technological superiority is the key internal link to military success – AI enables every level of the battlefield. Without AI superiority, we cannot deter or defeat adversaries.**

**Schmidt and Work, 2021 – Chairs of The National Security Commission on Artificial Intelligence** [Eric and Robert, “National Security Commission on Artificial Intelligence Final Report Executive Summary” <https://www.nscai.gov/2021-final-report/> Acc 6/7/22 TA]

Technology so ubiquitous in other facets of society will have an equivalent impact on international competition and conflict.4 We must adopt AI to change the way we defend America, deter adversaries, use intelligence to make sense of the world, and fight and win wars. The men and women who protect the United States must be able to leverage the AI and associated technologies that can help them accomplish their missions as quickly and safely as possible. AI is the quintessential “dual use” technology—it can be used for civilian and military purposes. The AI promise—that a machine can perceive, decide, and act more quickly, in a more complex environment, with more accuracy than a human—represents a competitive advantage in any field. It will be employed for military ends, by governments and non-state groups. We can expect the large-scale proliferation of AI-enabled capabilities. Many national security applications of AI will require only modest resources and good, but not great, expertise to use. AI algorithms are often accessible. The hardware is “off-the-shelf” and in most cases generally available to consumers (as with graphics processing units, for example). “Deepfake” capabilities can be easily downloaded and used by anyone.5 AI enabled tools and mutating malware are in the hands of hackers.6 Cheap, lethal drones will be common. Azerbaijan’s use of Turkish drones and Israeli loitering munitions in combat against Armenia in October 2020 confirmed that autonomous military capabilities are spreading.7 Many states are watching and learning from these experiences. The likelihood of reckless or unethical uses of AI-enabled technologies by rogue states, criminals, or terrorists is increasing. AI-enabled capabilities will be tools of first resort in a new era of conflict. State and non-state actors determined to challenge the United States, but avoid direct military confrontation, will use AI to amplify existing tools and develop new ones. Adversaries are exploiting our digital openness through AI-accelerated information operations and cyber attacks. Adtech will become natsec-tech as adversaries recognize what advertising and technology firms have recognized for years: that machine learning is a powerful tool for harvesting and analyzing data and targeting activities. Using espionage and publicly available data, adversaries will gather information and use AI to identify vulnerabilities in individuals, society, and critical infrastructure. They will model how best to manipulate behavior, and then act. AI will transform all aspects of military affairs. AI applications will help militaries prepare, sense and understand, decide, and execute faster and more efficiently. Numerous weapon systems will leverage one or more AI technologies. AI systems will generate options for commanders and create battle networks connecting systems across all domains. It will transform logistics, procurement, training, and the design and development of new hardware. Adopting AI will demand the development of new tactics and operational concepts. In the future, warfare will pit algorithm against algorithm. The sources of battlefield advantage will shift from traditional factors like force size and levels of armaments to factors like superior data collection and assimilation, connectivity, computing power, algorithms, and system security. Competitors are actively developing AI concepts and technologies for military use. Russia has plans to automate a substantial portion of its military systems.8 It has irresponsibly deployed autonomous systems in Syria for testing on the battlefield.9 China sees AI as the path to offset U.S. conventional military superiority by “leapfrogging” to a new generation of technology. Its military has embraced “intelligentized war”––investing, for example, in swarming drones to contest U.S. naval supremacy.10 China’s military leaders talk openly about using AI systems for “reconnaissance, electromagnetic countermeasures and coordinated firepower strikes.”11 China is testing and training AI algorithms in military games designed around real-world scenarios. As these authoritarian states field new AI enabled military systems, we are concerned that they will not be constrained by the same rigorous testing and ethical code that guide the U.S. military. AI will revolutionize the practice of intelligence. There may be no national security function better suited for AI adoption than intelligence tradecraft and analysis. Machines will sift troves of data amassed from all sources, locate critical information, translate languages, fuse data sets from different domains, identify correlations and connections, redirect assets, and inform analysts and decision-makers. To protect the American people, perhaps the most urgent and compelling reason to accelerate the use of AI for national security is the possibility that more advanced machine analysis could find and connect the dots before the next attack, when human analysis alone may not see the full picture as clearly. Defending against AI-capable adversaries without employing AI is an invitation to disaster. AI will compress decision time frames from minutes to seconds, expand the scale of attacks, and demand responses that will tax the limits of human cognition. Human operators will not be able to defend against AI-enabled cyber or disinformation attacks, drone swarms, or missile attacks without the assistance of AI-enabled machines. The best human operator cannot defend against multiple machines making thousands of maneuvers per second potentially moving at hypersonic speeds and orchestrated by AI across domains. Humans cannot be everywhere at once, but software can.

**Declining military readiness invites aggression and causes war. Revisionist powers will exploit rapid technological change.**

**O’Hanlon and Miller 2019 - director of research in Foreign Policy at the Brookings** **and former Under Secretary of Defense for Policy** [Michael and James, Dec 2 "Why we need a more modern and ready military, not a larger one," [https://www.brookings.edu/blog/order-from-chaos/2019/10/04/why-we-need-a-more-modern-and-ready-military-not-a-larger-one/](https://www.brookings.edu/blog/order-from-chaos/2019/10/04/why-we-need-a-more-modern-and-ready-military-not-a-larger-one/%5d//GJ) Acc. 2/2/21 TA]

Better management of existing forces by the military services would help a great deal, too. The Army is overworked partly because it maintains deployments of several thousand soldiers in South Korea and Poland through frequent rotations of multiple units, rather than the more efficient approach of permanently stationing individual brigades in these locations. The Air Force could consider similar changes in how it maintains key units in parts of the Middle East. Several fighter squadrons could, for example, be based in Gulf states rather than rotated in and out. The Navy still focuses too rigidly on maintaining permanent presence in the broader Persian Gulf and Western Pacific regions. More flexible and unpredictable deployments can ease strain on the force without giving adversaries any solace. The Navy can also consider crew swaps while ships remain at sea, rather than bringing crews and ships home from deployment together every six to eight months as is now the norm. With these kinds of adaptations, and improved readiness resulting from more consistent budgets, the size of today’s force can prove adequate to the tasks at hand. By contrast, quality must improve, and modernization must intensify. That is not because the U.S. military is obsolescent. Rather, the pace of innovation in key areas of military technology, and the way in which vulnerabilities in our existing military could be exploited by Russia or China, require it. If we fail to make the U.S. military more modern, resilient, lethal, and survivable, the perception could grow that relative American combat power was fading — or that the American military had developed systemic vulnerabilities that an enemy could exploit to produce catastrophic failure. Deterrence could weaken. War could result. And we could quite possibly even lose such a war. The years 2020-40 seem likely to see even more change in the technologies, and the character, of warfare than have recent decades. For the years 2000-20, revolutionary technological change occurred mainly in various aspects of computers and robotics. For the next two decades, those areas will remain fast-moving, and they will be joined by various breakthroughs in artificial intelligence (AI) including the use of big data. The battlefield implications in domains such as swarms of robotic systems usable as both sensors and weapons may truly come of age. In addition, progress in laser weapons, reusable rockets, hypersonic missiles, unmanned submarines, biological pathogens, and nanomaterials may occur rapidly. The sum total may or may not add up to a revolution. But the potential cannot be dismissed. The rise of China and the return of Russia supercharge the competition and raise the strategic stakes. The marriage of rapid technological progress with hegemonic change could prove especially potent. The return of great-power competition during an era of rapid progress in science and technology could reward innovators and expose vulnerabilities, much more than has been the case in the 21st century to date. Not every existing Department of Defense weapons program is equally defensible, of course. Some programs should be reassessed, or delayed, in order to make room for more survivable and effective systems — for example, reducing procurement of surface ships in favor of attack submarines and unmanned undersea vehicles for the Navy, and emphasizing longer-range aircraft more than fighters for the Air Force as well as the Navy. On balance, however, in broad strokes and in overall resource requirements, the Pentagon agenda for modernization makes sense. It is important to prioritize, and preserve, it. Today’s already-excellent American military is big enough to meet the reasonable requirements of ongoing commitments and great power competition — provided, that is, that it improves further. It needs to repair readiness. Most of all, it must be modernized for greater lethality, and made more resilient and survivable against the kinds of precision-strike, cyber, anti-satellite, and other asymmetric attacks future adversaries would be sure to employ. We need to keep our eye focused clearly on the ball, and our resource allocations focused clearly on the strategy. We need a more modern and ready force, not a larger one.

**Maintaining technological superiority deters Russia and China aggression – rapid great power shifts and revisionist powers eliminate bargaining, escalating conflicts to nuclear war.**

**Kroenig and Gopalaswamy, 2018 - Prof of Government and Foreign Service at Georgetown and director of the South Asia Center at the Atlantic Council** [Matthew and Bharath “Will disruptive technology cause nuclear war?” November 12. <https://thebulletin.org/2018/11/will-disruptive-technology-cause-nuclear-war> //pipk]

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.

**--Extend Uniqueness**

**The US has increased funding for AI development and minimized regulations to promote innovation**

**Lawrence and Cordey, 2020 – researchers for The Cyber Project at the Belfer Center for Science and International Affairs** [Christie and Sean, August, The Cyber Project Paper “The Case for Increased Transatlantic Cooperation on Artificial Intelligence Edited by Lauren Zabierek and Julia Voo https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf Acc. 4/21/22 TA]

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

**The DOD is accelerating programs to develop AI and autonomy**

**Nurkin and Konaev, 2022 - senior fellows at the Center for Strategy and Security at the Atlantic Council** [Tate and Margarita, May 25, “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/> Acc 6/12/22 TA]

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. In September 2021, the Air Force’s first chief software officer, Nicolas Chaillan, resigned in protest of the bureaucratic and cultural challenges that have slowed technology adoption and hindered the DoD from moving fast enough to effectively compete with China. In Chaillan’s view, in twenty years, the United States and its allies “will have no chance competing in a world where China has the drastic advantage in population.”41 Later, he added that China has essentially already won, saying, “Right now, it’s already a done deal.”42 Chaillan’s assessment of the United States engaged in a futile competition with China is certainly not shared across the DoD, but it reflects what many see as a lack of urgency within the risk-averse and ponderous culture of the department. Lt. General Michael Groen, the head of the JAIC, agreed that “inside the department, there is a cultural change that has to occur.”43 However, he also touted the innovative capacity of the United States and highlighted the establishment of an AI accelerator and the finalization of a Joint Common Foundation (JCF) for AI development, testing, and sharing of AI tools across DoD entities.44 The cloud-enabled JCF is an important step forward that will allow for AI development based on common standards and architectures. This should help encourage sharing between the military services and DoD components and, according to the JAIC, ensure that “progress by one DoD AI initiative will build momentum across the entire DoD enterprise.”45

**--Extend Links**

**Ethical limits that prevent the US from Using autonomous AI weapons gives China a technological edge.**

**Horowitz, 2018 – prof of political science at the Univ of Pennsylvania** [Michael C., May, Texas National Security Review, The Scholar “Artificial Intelligence, International Competition, and the Balance of Power” <https://tnsr.org/2018/05/artificial-intelligence-international-competition-and-the-balance-of-power/> Acc 5/14/22 TA]

From a balance-of-power perspective, this scenario would be more likely to feature disruption among emerging and great powers but not a broader leveling of the military playing field. The ability to exclude many countries from advances in AI would concentrate military competition among current leading militaries, such as the United States, China, and Russia. There could be significant disruption within those categories, though. A Chinese military that more rapidly developed critical algorithms for broader battle management, or that was more willing to use them than the United States, might gain advantages that shifted power in the Asia- Pacific. This assumes that these algorithms operate as they are designed to operate. All militarily-useful AI will have to be hardened against hacking and spoofing. Operators will use narrow AI applications only if they are as or more effective or reliable as existing inhabited or remotely-piloted options.111

**Autonomy is key to develop AI systems that enable all levels of military innovation**

**Vestner, 2021 - Head of Security and Law Programme at Geneva Centre for Security Policy** [Tobias, July 8 “Warfare and Artificial Intelligence” in Robin Geiß and Henning Lahmann (eds), Research Handbook on Warfare and Artificial Intelligence -forthcoming https://www.gcsp.ch/publications/military-operations-and-artificial-intelligenceGCSP Acc 5/27/22 TA]

Military operations are the essence of warfare. The introduction of military applications of artificial intelligence (AI) will most likely transform the preparation and conduct of military operations. AI can increasingly support and replace humans for military tasks as they are becoming faster and more accurate as well as able to consider more information and higher levels of complexity. This may lead to an increased speed of military operations and better military decision-making, ultimately offering armed forces with performant AI significant advantages. The military use of AI may indeed lead to another revolution in military affairs.1 AI can be used for various military purposes. In multi-dimensional battlefields, AI technologies can be utilized as sensors, planners, and fighters, or a combination thereof.2 More concretely, military applications of AI can range from systems supporting intelligence, surveillance, and reconnaissance (ISR) to autonomous navigation and target recognition systems.3 This can lead to diverse forms of interaction between military staff and AI systems as well as various levels of delegation of military tasks to AI systems. AI systems may assist commanders and soldiers in decision-making processes, unmanned AI systems may operate together with manned systems, and AI systems may operate autonomously under minimal human supervision, for instance.4 While currently only narrow and task-specific AI exist,5 significant efforts for the development of artificial general intelligence (AGI) – systems with an ability to reason across a wide range of domains akin to that of the human mind - are underway.6 This is in line with the continuous trend towards increased autonomy of AI systems.

**Regulations stifle AI innovation that is necessary to win the military competition**

**Schmidt and Work, 2021 – Chairs of The National Security Commission on Artificial Intelligence** [Eric and Robert, “National Security Commission on Artificial Intelligence Final Report Executive Summary” <https://www.nscai.gov/2021-final-report/> Acc 6/7/22 TA]

AI systems will also be used in the pursuit of power. We fear AI tools will be weapons of first resort in future conflicts. AI will not stay in the domain of superpowers or the realm of science fiction. AI is dual-use, often open-source, and diffusing rapidly. State adversaries are already using AI-enabled disinformation attacks to sow division in democracies and jar our sense of reality. States, criminals, and terrorists will conduct AI-powered cyber attacks and pair AI software with commercially available drones to create “smart weapons.” It is no secret that America’s military rivals are integrating AI concepts and platforms to challenge the United States’ decades-long technology advantage. We will not be able to defend against AI-enabled threats without ubiquitous AI capabilities and new warfighting paradigms. We want the men and women in national security departments and agencies to have access to the best technology in the world to defend themselves and us, and to protect our interests and those of our allies and partners. Despite exciting experimentation and a few small AI programs, the U.S. government is a long way from being “AI-ready.” The Commission’s business leaders are most frustrated by slow government progress because they know it’s possible for large institutions to adopt AI. AI integration is hard in any sector—and the national security arena poses some unique challenges. Nevertheless, committed leaders can drive change. We need those leaders in the Pentagon and across the Federal Government to build the technical infrastructure and connect ideas and experimentation to new concepts and operations. By 2025, the Department of Defense and the Intelligence Community must be AI-ready. We should embrace the AI competition. Competition already infuses the quests for data, computing power, and the holy grail: the rare talent to make AI breakthroughs. The fact that AI courses through so many adjacent technologies and is leveraged across so many fields explains its power and leads inexorably to another critical point: AI is part of a broader global technology competition. Competition will speed up innovation. We should race together with partners when AI competition is directed at the moonshots that benefit humanity like discovering vaccines. But we must win the AI competition that is intensifying strategic competition with China. China’s plans, resources, and progress should concern all Americans. It is an AI peer in many areas and an AI leader in some applications. We take seriously China’s ambition to surpass the United States as the world’s AI leader within a decade. The AI competition is also a values competition. China’s domestic use of AI is a chilling precedent for anyone around the world who cherishes individual liberty. Its employment of AI as a tool of repression and surveillance—at home and, increasingly, abroad—is a powerful counterpoint to how we believe AI should be used. The AI future can be democratic, but we have learned enough about the power of technology to strengthen authoritarianism abroad and fuel extremism at home to know that we must not take for granted that future technology trends will reinforce rather than erode democracy. We must work with fellow democracies and the private sector to build privacy-protecting standards into AI technologies and advance democratic norms to guide AI uses so that democracies can responsibly use AI tools for national security purposes. Given these convictions, the Commission concludes that the United States must act now to field AI systems and invest substantially more resources in AI innovation to protect its security, promote its prosperity, and safeguard the future of democracy. Today, the government is not organizing or investing to win the technology competition against a committed competitor, nor is it prepared to defend against AI-enabled threats and rapidly adopt AI applications for national security purposes. This is not a time for incremental toggles to federal research budgets or adding a few new positions in the Pentagon for Silicon Valley technologists. This will be expensive and require a significant change in mindset. America needs White House leadership, Cabinet-member action, and bipartisan Congressional support to win the AI era.

**Ethical limits put our allies at a technological and military disadvantage.**

**Thornton, 2019 - Senior Lecturer in the Centre for Defence Education Research and Analysis, King’s College** [Rod, “One to ponder: the UK’s ethical stance on the use of Artificial Intelligence in weapons systems https://defenceindepth.co/2019/06/17/one-to-ponder-the-uks-ethical-stance-on-the-use-of-artificial-intelligence-in-weapons-systems/ Acc 4/16/22 TA]

The potential use, thus, of AI in weapons systems has raised controversy, not least in the UK. A recent report by the House of Lords Select Committee on AI recognised that, while UK spending on AI could not match that of the US or China, the UK could still be a world leader in terms of the ethics involved. The report warned: ‘The autonomous power to hurt, destroy or deceive human beings should never be vested in artificial intelligence’. It advised that the UK should be acting to ‘lead the international community in AI’s ethical development, rather than passively accept its consequences’. It went on to urge the UK to ‘forge a distinctive role for itself as a pioneer in ethical AI’. The UK is, it seems, to be a global leader in the governance of the ethical use of AI. In light of this report, one journal article rather pointedly carried the headline: ‘The UK says it can’t lead on AI spending, so will have to lead on AI ethics instead’. With such sentiments abroad, it is no surprise then that the official UK line is that none of its offensive weapons systems will be capable of attacking targets without some degree of human control. As one Ministry of Defence spokesperson put it: ‘The United Kingdom does not possess fully autonomous weapon systems and has no intention of developing them’. This is a laudable but debateable statement. Surely, the UK will be developing purely defensive AI system that are fully autonomous – anti-missile missile systems, for instance – where speed of reaction cannot be left to dithering humans. In a broader sense, though, this is a declared restriction that could put UK forces at a serious disadvantage on future battlefields when it comes to the employment of LAWS. It cannot really be imagined that the likes of China and Russia, as they develop their AI systems, will feel limited by ethical sentiment. Their view will be that they cannot afford to be. They both see themselves as weaker militarily than the combined forces of NATO and its partner countries and, as such, have doctrinally declared that they will be seeking out any asymmetric advantage they can. If these Western powers – including the UK – want to self-restrict their use of LAWS, for instance, then this will be seen by Beijing and Moscow as a weakness to be exploited in an asymmetric sense.

**--Extend Internal Link**

**Technology is the key to military superiority – improving speed and control are necessary to deal with future military threats.**

**Schmidt and Work, 2021 – Chairs of The National Security Commission on Artificial Intelligence** [Eric and Robert, “National Security Commission on Artificial Intelligence Final Report Executive Summary” <https://www.nscai.gov/2021-final-report/> Acc 6/7/22 TA]

AI-enhanced capabilities will be the tools of first resort in a new era of conflict as strategic competitors develop AI concepts and technologies for military and other malign uses and cheap and commercially available AI applications ranging from “deepfakes” to lethal drones become available to rogue states, terrorists, and criminals. The United States must prepare to defend against these threats by quickly and responsibly adopting AI for national security and defense purposes. Defending against AI-capable adversaries operating at machine speeds without employing AI is an invitation to disaster. Human operators will not be able to keep up with or defend against AI-enabled cyber or disinformation attacks, drone swarms, or missile attacks without the assistance of AI-enabled machines. National security professionals must have access to the world’s best technology to protect themselves, perform their missions, and defend us. The Commission recommends that the government take the following actions: Defend against emerging AI-enabled threats to America’s free and open society. Digital dependence in all walks of life is transforming personal and commercial vulnerabilities into potential national security weaknesses. Adversaries are using AI systems to enhance disinformation campaigns and cyber attacks. They are harvesting data on Americans to build profiles of their beliefs, behavior, and biological makeup for tailored attempts to manipulate or coerce individuals. This gathering storm of foreign influence and interference requires organizational and policy reforms to bolster our resilience. The government needs to stand up a task force and 24/7 operations center to confront digital disinformation. It needs to better secure its own databases and prioritize data security in foreign investment screening, supply chain risk management, and national data protection legislation. The government should leverage AI-enabled cyber defenses to protect against AI-enabled cyber attacks. And biosecurity must become a top-tier priority in national security policy. Prepare for future warfare. Our armed forces’ competitive military-technical advantage could be lost within the next decade if they do not accelerate the adoption of AI across their missions. This will require marrying top-down leadership with bottom-up innovation to put operationally relevant AI applications into place. The Department of Defense (DoD) should: First, establish the foundations for widespread integration of AI by 2025. This includes building a common digital infrastructure, developing a digitally-literate workforce, and instituting more agile acquisition, budget, and oversight processes. It also requires strategically divesting from military systems that are ill-equipped for AI-enabled warfare and instead investing in next-generation capabilities.

**Technological superiority is the key internal link to America’s military advantage. China can legitimately challenge US dominance.**

**Schmidt and Work, 2021 – Chairs of The National Security Commission on Artificial Intelligence** [Eric and Robert, “National Security Commission on Artificial Intelligence Final Report Executive Summary” <https://www.nscai.gov/2021-final-report/> Acc 6/7/22 TA]

The National Security Commission on Artificial Intelligence (NSCAI) humbly acknowledges how much remains to be discovered about AI and its future applications. Nevertheless, we know enough about AI today to begin with two convictions. First, the rapidly improving ability of computer systems to solve problems and to perform tasks that would otherwise require human intelligence—and in some instances exceed human performance—is world altering. AI technologies are the most powerful tools in generations for expanding knowledge, increasing prosperity, and enriching the human experience. AI is also the quintessential “dual-use” technology. The ability of a machine to perceive, evaluate, and act more quickly and accurately than a human represents a competitive advantage in any field—civilian or military. AI technologies will be a source of enormous power for the companies and countries that harness them. Second, AI is expanding the window of vulnerability the United States has already entered. For the first time since World War II, America’s technological predominance—the backbone of its economic and military power—is under threat. China possesses the might, talent, and ambition to surpass the United States as the world’s leader in AI in the next decade if current trends do not change. Simultaneously, AI is deepening the threat posed by cyber attacks and disinformation campaigns that Russia, China, and others are using to infiltrate our society, steal our data, and interfere in our democracy. The limited uses of AI-enabled attacks to date represent the tip of the iceberg. Meanwhile, global crises exemplified by the COVID-19 pandemic and climate change highlight the need to expand our conception of national security and find innovative AI-enabled solutions.

**Losing the AI arms race encourages China to invade Taiwan.**

**Horowitz and Kahn, 2022 - Senior and Research Fellows for Defense Technology and Innovation at the Council on Foreign Relations** [Michael and Lauren, with Laura Samotin, May/June Foreign Affairs “A Force for the Future A High-Reward, Low-Risk Approach to AI Military Innovation” [https://www.foreignaffairs.com/articles/united-states/2022-04-19/force-future Acc 5/28/22](https://www.foreignaffairs.com/articles/united-states/2022-04-19/force-future%20Acc%205/28/22) TA]

Leading military powers often forgo innovation and resist change. But today, the United States risks being more like the United Kingdom—or even France. The Defense Department appears to be biased in favor of tried-and-true capabilities over new tools, and its pace of innovation has slowed: the time it takes to move new technology from the lab and to the battlefield went from roughly five years, on average, in the early 1960s to a decade or more today. Sometimes, the Pentagon has seemingly dragged its feet on AI and autonomous systems because it fears that adopting those technologies could require disruptive changes that would threaten existing, successful parts of the armed forces, as the story of the X-45, the X-47A, and the X-47B clearly illustrates. Some projects have struggled to even make it off the drawing board. Multiple experiments have shown that Loyal Wingman, an uncrewed aircraft that employs AI, can help aircraft groups better coordinate their attacks. But the U.S. military has yet to seriously implement this technology, even though it has existed for years. It’s no wonder that the National Security Commission on Artificial Intelligence concluded in 2021, in its final report, that the United States “is not prepared to defend or compete in the AI era.” If the United States fails to develop effective AI, it could find itself at the mercy of increasingly sophisticated adversaries. China, for example, is already employing AI to war-game a future conflict over Taiwan. Beijing plans to use AI in combination with cyberweapons, electronic warfare, and robotics to make an amphibious assault on Taiwan more likely to succeed. It is investing in AI-enabled systems to track undersea vehicles and U.S. Navy ships and to develop the ability to launch swarm attacks with low-cost, high-volume aircraft. If the United States lacks advanced AI capabilities, it will find itself inevitably moving at a slower pace—and would therefore be less able to help Taiwan fend off an invasion.

**--Extend Internal Links - Specific AI Missions**

**Planning**

**Autonomous AI is key to military planning – speed allows multiple iterations of battle plans.**

**Vestner, 2021 - Head of Security and Law Programme at Geneva Centre for Security Policy** [Tobias, July 8 “Warfare and Artificial Intelligence” in Robin Geiß and Henning Lahmann (eds), Research Handbook on Warfare and Artificial Intelligence -forthcoming https://www.gcsp.ch/publications/military-operations-and-artificial-intelligenceGCSP Acc 5/27/22 TA]

Such AI applications will probably have strong ramifications on planning. Planning military operations is a slow and burdensome process, which relies on estimations of ‘outcomes, attrition, consumption of supplies, and enemy reaction’.75 It involves understanding a given situation, time-space analysis, and logistics concerns. Time and labour limitations restrict how many options of plans can be explored.76 Moreover, prediction is arguably ‘one of the most vexing tasks of the operational commander’.77 Provided that sufficient quantity and quality of data can be made available, AI may excel in prediction making both in quality and speed. Data analytics further enables the processing of much more information than human computing, eventually reducing the ‘fog of war’.78 As AI programmes can deconstruct operations into specific tasks to then allocate resources accordingly, predict enemy actions, and estimate risks, this would improve the general speed and accuracy of decision-making.79 An increase in the number of COA that can be considered would further allow a qualitative improvement of planning processes.80

**Battle planning is crucial for NATO’s advantage – it improves threat assessment and analysis and improves interoperability through coordination of resources.**

**de Maizière and Mitchell, 2020 - Former German Defense Minister and former U.S. Assistant Secretary of State** [Thomas and Wess, November 25, “NATO 2030: United for a New Era Analysis and Recommendations of the Reflection Group Appointed by the NATO Secretary General” https://www.nato.int/nato\_static\_fl2014/assets/pdf/2020/12/pdf/201201-Reflection-Group-Final-Report-Uni.pdf Acc. 4/12/22 TA]

Emerging and Disruptive Technologies Maintaining a technological edge is the foundation upon which NATO’s ability to deter and defend against potential threats ultimately rests. EDTs pose a fundamental challenge but also—if harnessed correctly—an opportunity for the Alliance. Without a strategic surge in this area, allowing adversaries to gain competitive advantage would impede NATO’s ability to win on the battlefield, challenge strategic stability and change the fundamentals of deterrence, but also offer state and even non-state actors, including eventually terrorists, the potential to threaten our societies from within. They also could undermine NATO’s political cohesion, by raising questions about technology sharing within the Alliance, impairing interoperability, and potentially fuelling dependencies on rival states. At the same time, new technologies offer historic opportunities for strategic advantage, from dealing with new types of conflicts to sharing and analysing data at an unprecedented level and, more broadly, for the enrichment and betterment of society. Against that backdrop, the acquisition of, and access to, EDTs in the arenas of e.g., big data, Artificial Intelligence, autonomous capabilities, space, cloud technologies, hypersonic and new missile technologies, quantum technologies and biotechnologies, and human augmentation/enhancement, is fundamental to the future security of NATO and its Allies – and should be reflected in the capabilities NATO asks its Allies to deliver. This must begin with a common understanding and approach of the major challenges the Alliance is facing in this domain. NATO and its Allies have acknowledged the profound impact of new technologies by launching the Emerging and Disruptive Technologies Roadmap during the London Leaders Meeting in December 2019. However, NATO has to increase the pace and scale of its political focus on this area if it really wants to counter the threats and to reap the fruits resulting from new technologies. Recommendations: 1. NATO Allies should agree to, and begin to enact, NATO’s EDT Implementation Strategy as soon as possible. The development and introduction of cutting-edge capabilities is the primary responsibility of national governments. However, NATO has an important role to play in prompting the development of a common strategy, grounded in an Alliance-wide EDT threat assessment and an analysis of opportunities, whereby members can conceptualise how their national efforts fit together for purposes of common security and where the Alliance can benefit from new technologies. 2. Competing with the efforts underway by large authoritarian states to achieve dominance in key EDTs must be a strategic priority for the Alliance and its members. It should enhance its role as the key coordinating institution on security-related EDTs for its members. While key aspects of technological innovation lie at the national or EU levels, NATO has an appropriate and as-yet underdeveloped role to play in providing a forum for discussion on all aspects of EDTs that have a direct bearing on the security of the Euro-Atlantic area. 3. NATO should serve as a crucial coordinating institution for information sharing and collaboration between Allies on the security dimensions of EDTs. At present, no transatlantic coordination tool exists for this purpose. These consultations could, when NATO security requires, be extended to included non-allies that are cleared for intelligence-sharing. 4. NATO should hold a digital summit of governments and private sector with the aim of identifying gaps in collective defence cooperation in security-related AI strategies, norms and R&D, and safeguarding against the malign and aggressive use of AI, including militarily, and via the spread of digital authoritarianism. 5. NATO should anchor EDTs in the defence planning process (NDPP) to ensure that all Allies modernise their forces appropriately, and that technological adaptation is included in evaluating fair burden-sharing. Against that backdrop, the NDPP should be analysed and potentially adapted to reflect NATO’s capabilities to respond to threats from EDTs. NATO should review whether, in light of the fast-moving nature of technological change, the four-year time span allotted for incorporation of EDTs should be shortened.

**Cyberdefense**

**AI at Machine speed is essential for cyber defense, because Adversaries will be using AI for cyber attacks.**

**Flournoy and Haines, 2020 - former Under Secretary of Defense for Policy and Director of National Intelligence** [Michèle and Avril October, “Building Trust through Testing Adapting DOD’s Test & Evaluation, Validation & Verification (TEVV) Enterprise for Machine Learning Systems, including Deep Learning Systems” https://cset. georgetown.edu/wp-content/uploads/Building-Trust-Through-Testing.pdf Acc 6/7/22 TA]

The United States is at an inflection point in an age of mounting transnational threats, unprecedented global interdependence, and resurgent great power competition. This moment is taking place in the context of a technological revolution that exacerbates the challenges we face while simultaneously offering potential solutions, providing breakthroughs in climate, medicine, communications, transportation, intelligence, and many other fields. Many of these breakthroughs will come through the exploitation of artificial intelligence (AI) and its related technologies—chief among them machine learning (ML). These advances will likely shape the economic and military balance of power among nations and the future of work, wealth, and inequality within them. Innovations in ML have the potential to transform fundamentally how the U.S. military fights, and how the Department of Defense (DOD) operates. Machine learning applications can increase the speed and quality of human decision-making on the battlefield, enable human-machine teaming to maximize performance and minimize the risk to soldiers, and greatly improve the accuracy and speed of analysis that relies on very large data sets. ML can also strengthen the United States’ ability to defend its networks against cyberattacks at machine speeds and has the power to automate critical components of labor-intensive enterprise functions, such as predictive maintenance and personnel management.

**Cyber Defense is crucial to our military dominance – it is the vulnerability that enemies will exploit.**

**Schmidt and Work, 2021 – Chairs of The National Security Commission on Artificial Intelligence** [Eric and Robert, “National Security Commission on Artificial Intelligence Final Report Executive Summary” <https://www.nscai.gov/2021-final-report/> Acc 6/7/22 TA]

Second, AI is expanding the window of vulnerability the United States has already entered. For the first time since World War II, America’s technological predominance—the backbone of its economic and military power—is under threat. China possesses the might, talent, and ambition to surpass the United States as the world’s leader in AI in the next decade if current trends do not change. Simultaneously, AI is deepening the threat posed by cyber attacks and disinformation campaigns that Russia, China, and others are using to infiltrate our society, steal our data, and interfere in our democracy. The limited uses of AI-enabled attacks to date represent the tip of the iceberg. Meanwhile, global crises exemplified by the COVID-19 pandemic and climate change highlight the need to expand our conception of national security and find innovative AI-enabled solutions.

**Swarming**

**Autonomous AI is necessary to defeat autonomous drone swarms.**

**Miller, 2021 - Flight Chief, US Air Force** [Amanda, Dec 14 Air Force Magazine “UN Addresses Lethal Autonomous Weapons—aka ‘Killer Robots’—Amid Calls for a Treaty” https://www.airforcemag.com/un-addresses-lethal-autonomous-weapons-aka-killer-robots-amid-calls-for-a-treaty/ Acc. 4/5/22 TA]

Speaking during an American Enterprise Institute webinar about AI on Dec. 7, NATO’s David van Weel articulated why countries such as the U.S. might oppose a treaty on autonomous weapons. Van Weel put the issue in terms of a hypothetical attack by a swarm of drones. “How do we defend against them? Well, we can’t, frankly, because you need AI in that case in order to be able to counter AI,” he said.

**Drone swarms threaten European security.**

**van Weel, 2021 – Assistant Secretary General for Emerging Security Challenges, NATO** [David, Dec 7, “Artificial intelligence: Can we go from chaos to cooperation?” AEI Panel Discussion - Moderator: Elisabeth Braw https://www.aei.org/events/artificial-intelligence-can-we-go-fromchaos-to-cooperation/ Acc 5/11/22 TA]

And there I would agree on the EU, that they are far ahead when it comes down to thinking about regulating AI. But what they don’t take into account is the security and defense aspects and uses of AI, for example. And that is a miss from two angles. One, you don’t want the security and defense realms not to be regulated, which is what the current EU legislation proposes: is to leave an exempt category for all national security and defense cases. Second, you don’t want to overregulate if you don’t know that you can defend yourself within the regulations that you’re proposing. So you need to have this angle to those new technologies being fed into the general regulation debate. And let me give you an example on autonomy. So, at the moment, if we want to catch drones with explosives — and you know drones are very cheap and easy to buy — then the ways to catch them are quite primitive. So you either jam the signal and run the risk that your jam an airfield, which might be the objective of the attacker in any case. Or the drone might return home. Or you use a net to catch the drone. Now, that’s all fine. Now we get drone swarms. So we get hundreds of drones that collectively, powered by AI, are able to follow an intrinsic pattern of attack on, for example, our water supply or one of our cities. So how do we defend against them? Well, we can’t, frankly, because you need AI in that case in order to be able to counter AI. So it’s all these kinds of questions. That means that we need to be in that discussion and shaping it.

**1NC - Civilian Deaths DA**

**Banning autonomous AI weapons prevents the technological research that will make them more ethical and efficient.**

**Arkin, 2013 – prof at Georgia Tech** [Ronald “Lethal Autonomous Systems and the Plight of the Non-combatant” AISB Quarterly, No. 137, July https://smartech.gatech.edu/handle/1853/50079?show=full Acc 12/27/20 TA]

Limited autonomy is also present or under development in many systems as well, ranging from the Phalanx system “capable of autonomously performing its own search, detect, evaluation, track, engage and kill assessment functions”2, fire-and-forget munitions, loitering torpedoes, and intelligent antisubmarine or anti-tank mines among numerous other examples. Continued advances in autonomy will result in changes involving tactics, precision, and just perhaps, if done correctly, a reduction in atrocities as outlined in research conducted at the Georgia Tech Mobile Robot Laboratory (GT-MRL)3. This paper asserts that it may be possible to ultimately create intelligent autonomous robotic military systems that are capable of reducing civilian casualties and property damage when compared to the performance of human warfighters. Thus, it is a contention that calling for an outright ban on this technology is premature, as some groups already are doing4. Nonetheless, if this technology is to be deployed, then restricted, careful and graded introduction into the battlefield of lethal autonomous systems must be standard policy as opposed to haphazard deployments, which I believe is consistent with existing International Humanitarian Law (IHL). Multiple potential benefits of intelligent war machines have already been declared by the military, including: a reduction in friendly casualties; force multiplication; expanding the battlespace; extending the warfighter’s reach; the ability to respond faster given the pressure of an ever increasing battlefield tempo; and greater precision due to persistent stare [constant video surveillance that enables more time for decision making and more eyes on target]. This argues for the inevitability of development and deployment of lethal autonomous systems from a military efficiency and economic standpoint, unless limited by IHL.

**Researching AI is essential to both improve the military And find ways to program ethical autonomous weapons. We need to develop Artificial Intelligence into Artificial Conscience.**

**Park, 2013 - graduate of New York University School of Law** [Jiou August 22, 2013 Just Security “Book Synopsis: Governing Lethal Behavior in Autonomous Robots” https://www.justsecurity.org/books-read/book-synopsis-governing-lethal-behavior-autonomous-robots/ Acc 12/27/20 TA]

Arkin first describes two reasons why it is necessary to develop ethical military robots. First, there is an unmistakable and irreversible trend toward greater autonomy in weapon systems. Arkin points to a number of existing unmanned weapons systems, ranging from ground robots such as Packbots to air units such as the Reaper, commonly known as “drones,” and also cites military and technology experts asserting that the trend toward autonomous military robots is accelerating. According to Arkin, there is a significant possibility that robots with the capacity to identify and engage targets without human supervision will be operating side-by-side with human soldiers within the next twenty to thirty years. Second, Arkin argues that in addition to having the potential to solve many of the problems related to human soldiers, robot soldiers may also be able to perform better than human soldiers. For example, Arkin argues that soldiers are prone to behavior that results in atrocities due to emotional and psychological factors and are vulnerable to psychological injuries. Moreover, Arkin refers to studies that have found the general reluctance of human soldiers to “shoot to kill” problematic for effective battlefield performance. Thus, according to Arkin, military robots have the potential to behave not only more ethically but also more effectively on the battlefield compared to human soldiers. However, whether lethal robots with an “artificial conscience” capable of behaving “more humanely than humans” could ever actually come into existence is a separate question. Arkin devotes the second half of Governing Lethal Behavior in Autonomous Robots to proving that it would be possible to develop such “ethical robots.” Arkin focuses on how a military robot’s programming would work to ensure ethical behavior, starting from a hypothetical situation where all other necessary technologies are present. An autonomous robot decides how to act through a “behavioral mapping” which translates specific sensory inputs, such as what the robot sees or hears, into specific actions, like shooting or moving away from an object. According to Arkin, the very basic way to embed ethical behavior into robots is to impose a set of constraints on the behavioral mappings. The set of constraints, Arkin says, would be derived from laws of war (including the principles of necessity, humanity, proportionality, and discrimination), the rules of engagement, and any other applicable rules for peace enforcement missions, depending on the context. As a result, upon encountering a certain sensory input, the robot will only be able to take an action that does not violate the constraints programmed into its behavioral mappings. The ultimate goal is to ensure, through these constraints, that only actions complying with laws of war and rules of engagement will occur. Arkin presents four different architectural choices to achieve that goal. The first is the “ethical governor,” which reviews the robot’s action prior to its enactment. The second is an “ethical behavioral control,” which ensures that any action the robot can select is ethical in the first place. In other words, the “ethical governor” will act as a reviewer once the behavior is selected, while the “ethical behavioral control” will act as a constraining principle prior to the selection of behavior. The third is “the ethical adaptor,” which reviews the robot’s action after the fact and updates the robot’s ethical constraints accordingly. The fourth and final component is the “responsibility advisor,” which makes it possible to assign responsibility to a human agent when the robot acts in an unethical way. Arkin believes that by using a combination of the above architectural designs, it is possible to strike a balance between the robot’s ability to execute missions effectively and absolute compliance with laws of war. To facilitate this result, Arkin presents a basic protocol that a robot will have to follow: (i) prior to engagement, confirm that specific people have accepted responsibility for the robot’s actions; (ii) ensure that the mission at hand complies with the principle of necessity; (iii) maximize discrimination between enemy combatants and non-combatants; and (iv) use the minimum force required. According to Arkin, by following this protocol and ensuring that all other constraints derived from rules of engagement and laws of war are programmed into the robot, “ethical” military robots will be able to avoid atrocities and sustain fewer non-combatant casualties than human soldiers.

**Autonomous AI systems reduce civilian casualties – they are better able to distinguish innocent civilians, and they are less likely to commit civilian atrocities.**

**Arkin, 2008 – the Mobile Robot Laboratory at Georgia Institute of Technology** [Ronald “Technical Report GIT-GVU-07-11 Governing Lethal Behavior: Embedding Ethics in a Hybrid Deliberative/Reactive Robot Architecture” <https://dl.acm.org/doi/abs/10.1145/1349822.1349839> Acc 12/27/20 TA]

This is no simple task however. In the fog of war it is hard enough for a human to be able to effectively discriminate whether or not a target is legitimate. Fortunately for a variety of reasons, it may be anticipated, despite the current state of the art, that in the future autonomous robots may be able to perform better than humans under these conditions, for the following reasons: 1. The ability to act conservatively: i.e., they do not need to protect themselves in cases of low certainty of target identification. UxVs do not need to have self-preservation as a foremost drive, if at all. They can be used in a self-sacrificing manner if needed and appropriate without reservation by a commanding officer, 2. The eventual development and use of a broad range of robotic sensors better equipped for battlefield observations than humans’ currently possess. 3. They can be designed without emotions that cloud their judgment or result in anger and frustration with ongoing battlefield events. In addition, “Fear and hysteria are always latent in combat, often real, and they press us toward fearful measures and criminal behavior” [Walzer 77, p. 251]. Autonomous agents need not suffer similarly. 4. Avoidance of the human psychological problem of “scenario fulfillment” is possible, a factor believed partly contributing to the downing of an Iranian Airliner by the USS Vincennes in 1988 [Sagan 91]. This phenomena leads to distortion or neglect of contradictory information in stressful situations, where humans use new incoming information in ways that only fit their pre-existing belief patterns, a form of premature cognitive closure. Robots need not be vulnerable to such patterns of behavior. 5. They can integrate more information from more sources far faster before responding with lethal force than a human possibly could in real-time. This can arise from multiple remote sensors and intelligence (including human) sources, as part of the Army’s network-centric warfare concept and the concurrent development of the Global Information Grid. 6. When working in a team of combined human soldiers and autonomous systems, they have the potential capability of independently and objectively monitoring ethical behavior in the battlefield by all parties and reporting infractions that might be observed. This presence alone might possibly lead to a reduction in human ethical infractions.

**When ethical robots go to war, they place themselves in harms way, rather than human soldiers. The proliferation of autonomous AI weapons will dramatically decrease casualties of war.**

**Del Re, 2017 – US Army Major** [Amanda “Lethal Autonomous Weapons: Take the Human Out of the Loop A paper submitted to the Faculty of the US Naval War College in partial satisfaction of the requirements for the Ethics of Emerging Military Technology Graduate Certificate. 16 June 2017 https://apps.dtic.mil/sti/citations/AD1041804 Acc 12/27/20 TA]

Lethal Autonomous Weapons (LAWS) should be employed by the United States on the field of battle. LAWS will save lives because they are potentially more proficient on the battlefield than humans. There will not be as many combat-related deaths or injuries which will result in a healthier, more resilient military. It behooves the United States to employ this emerging technology because other nations already are. As a superpower, the United States bears the burden of setting the example in warfare and foreign policy. A Lethal Autonomous Weapon is a robot that is designed to select and attack military targets without direct intervention by a human operator. The idea of not having a human operator is called “human-out-of-the-loop.” Autonomous weapons also have the capability of operating with a “human-in-the-loop” (like a drone and drone operator) or a “human-on-the-loop” in which a human operator supervises the targeting process and can intervene at any time during the cycle. Currently, the US employs both human-in-the-loop and human-on-the-loop weapons in combat. Lethal autonomous Weapons are also called LAWS, LARS (lethal autonomous robots), robotic weapons, or killer robots. For these purposes, LAWS, robots, or lethal autonomous weapon will be used. This study will present a somewhat unrepresented argument, that LAWS should be developed and employed by the United States on the battlefield. There are several premises to support this conclusion. First, humans are overall inferior on the battlefield as compared to robots. Historically humans deal poorly with the traumatic effects of combat resulting in war atrocities, posttraumatic stress disorder, increased veteran suicide and homelessness; robots would not be negatively affected by combat like humans are. Additionally, human soldiers are more expensive in the long run than robots. 7 Second, the United States needs to stay on the cutting edge of technology especially in warfare. History provides examples of the United States using ethically questionable strategies in war such as unrestricted submarine warfare and strategic bombing, both in WWII, without having had the chance to fully examine the potential ramifications of those strategies prior to the heat of conflict. Moreover, other nations are already employing LAWS. The United States needs to lead the development of these weapons in terms of technological capabilities and ethical standards so that an international agreement can be achieved before they are misused by another nation.

**Advanced autonomous weapons would be More Ethical than human soldiers – human flaws make war atrocities more likely.**

**Arkin, 2008 – the Mobile Robot Laboratory at Georgia Institute of Technology** [Ronald “Technical Report GIT-GVU-07-11 Governing Lethal Behavior: Embedding Ethics in a Hybrid Deliberative/Reactive Robot Architecture” <https://dl.acm.org/doi/abs/10.1145/1349822.1349839> Acc 12/27/20 TA]

It is not my belief that an unmanned system will be able to be perfectly ethical in the battlefield, but I am convinced that they can perform more ethically than human soldiers are capable of. Unfortunately the trends in human behavior in the battlefield regarding adhering to legal and ethical requirements are questionable at best. A recent report from the Surgeon General’s Office [Surgeon General 06] assessing the battlefield ethics of soldiers and marines deployed in Operation Iraqi Freedom is disconcerting. The following findings are taken directly from that report: 1. Approximately 10% of Soldiers and Marines report mistreating noncombatants (damaged/destroyed Iraqi property when not necessary or hit/kicked a noncombatant when not necessary). Soldiers that have high levels of anger, experience high levels of combat or those who screened positive for a mental health problem were nearly twice as likely to mistreat non-combatants as those who had low levels of anger or combat or screened negative for a mental health problem. 2. Only 47% of Soldiers and 38% of Marines agreed that noncombatants should be treated with dignity and respect. 3. Well over a third of Soldiers and Marines reported torture should be allowed, whether to save the life of a fellow Soldier or Marine or to obtain important information about insurgents. 4. 17% of Soldiers and Marines agreed or strongly agreed that all noncombatants should be treated as insurgents. 5. Just under 10% of soldiers and marines reported that their unit modifies the ROE to accomplish the mission. 6. 45% of Soldiers and 60% of Marines did not agree that they would report a fellow soldier/marine if he had injured or killed an innocent noncombatant. 7. Only 43% of Soldiers and 30% of Marines agreed they would report a unit member for unnecessarily damaging or destroying private property. 8. Less than half of Soldiers and Marines would report a team member for an unethical behavior. 9. A third of Marines and over a quarter of Soldiers did not agree that their NCOs and Officers made it clear not to mistreat noncombatants. 10. Although they reported receiving ethical training, 28% of Soldiers and 31% of Marines reported facing ethical situations in which they did not know how to respond. 11. Soldiers and Marines are more likely to report engaging in the mistreatment of Iraqi noncombatants when they are angry, and are twice as likely to engage in unethical behavior in the battlefield than when they have low levels of anger. 12. Combat experience, particularly losing a team member, was related to an increase in ethical violations.

**--Extend - Civilian Links**

**The Affirmative focuses on distinguishing Autonomous from Non-autonomous weapons is counterproductive - it prevents us from focusing on how to use them effectively and responsibly.**

**Noyes, 2019 - Major, US Army Reserve** [Matthew MPP, Harvard Kennedy School 14-06-2019 “Autonomous Weapons: The Future Behind Us” https://apps.dtic.mil/sti/pdfs/AD1085435.pdf Acc 12/27/20 TA]

Militaries have long used weapons with autonomous capabilities and are likely to increasingly use autonomous weapons as their effectiveness is demonstrated. Autonomous weapons predate remotely operated weapons in most domains. The air domain is instructive in this regard, as the invention of television in the 1930s disrupted prior work on more autonomous aircraft by allowing for the remote operation of aircraft out of sight from the pilot. Remotely operated systems are likely to continue to be generally preferred by militaries, but those systems will have increasingly autonomous capabilities, particularly in targeting enemy systems that disrupt their command and control links. This suggests rather than viewing “autonomous weapons” as a distinct class of systems, instead we should consider the autonomous capabilities of a weapon and how it is controlled by its user. Correctly considering autonomy in weapons begins with recognizing weapons are tools, and like all tools have a user. “Full autonomy,” in the sense of absolute independence, is not a desirable property of a tool. Rather, users will maintain some control over their tools to ensure they are accomplishing their desired purpose. Instead of trying to distinguish between what is autonomous and what is not, we should focus on the relationship between the user and the tool. To paraphrase David Mindell: “Where are the [users]? Who are they? What are they doing? When? Why does it matter?”152 Unencumbered with trying to distinguish between what is autonomous and non-autonomous allows analysis to instead focus on autonomy in executing particular functions. Recognizing militaries have long used autonomous weapons makes predicting their future use a matter of identifying the capabilities militaries have sought to achieve through autonomous weapons in the past, and how technology is changing what is possible. Considering this history, autonomous weapons have predominately been used to address at least one of four challenges: the mundane, the fast, the denied, and mass. Autonomous weapons aid militaries in addressing the mundane, or long duration, by providing greater persistence in observing and reacting to events over an extended period than is efficiently achieved with a manned system. In terms of both reaction speed and at high accelerations, autonomous weapons can operate at speeds exceeding what people are capable of. A particularly attractive feature of autonomous weapons is the ability to operate in denied environment, either due to environmental conditions or enemy action, that present unacceptable risk to manned systems or to the control channels for remotely operated systems. Finally, autonomous weapons provide increased mass, like most any military technology, by increasing the military power of a state relative to its available population for military service.

**Banning autonomous weapons prevents us from focusing on ways to use them to Counter uncontrolled human deaths.**

**Noyes, 2019 - Major, US Army Reserve** [Matthew MPP, Harvard Kennedy School 14-06-2019 “Autonomous Weapons: The Future Behind Us” https://apps.dtic.mil/sti/pdfs/AD1085435.pdf Acc 12/27/20 TA]

The normative and ethical considerations related to autonomous weapons are an area that needs further research. Existing literature on the ethics of autonomous weapons tends to describe them as a potential future capability not an existing capability, which may create a status quo bias in arguing against autonomous weapons. It also appears a substantial element in some moral arguments against autonomous weapons is a reaction to a challenge in what it means to be human. There seems to be a deeply held moral intuition that humans ought to have control over killing other humans. Autonomous weapons may be a key means for providing for that control, for example by targeting systems to disrupt command and control channels. If autonomous weapons are seen not as a means to kill humans, but as a means to target adversarial military systems that undermine control over who is killed, I suspect it fundamentally alters normative perspectives. It also suggests rather than seeking to ban autonomous weapons, to seek banning electronic warfare and other systems that erode control over the use of force.

**--Extend – Soldier Links**

**Even when human soldiers are not killed in combat, they live with the trauma of war for the rest of their lives, fueling an epidemic of suicide.**

**Del Re, 2017 – US Army Major** [Amanda “Lethal Autonomous Weapons: Take the Human Out of the Loop A paper submitted to the Faculty of the US Naval War College in partial satisfaction of the requirements for the Ethics of Emerging Military Technology Graduate Certificate. 16 June 2017 https://apps.dtic.mil/sti/citations/AD1041804 Acc 12/27/20 TA]

The economic costs of losing soldiers and wounded soldiers pales in comparison to the societal costs. The psychological consequences of war are often costlier than the physical costs. A 2016 Veteran’s Affairs study found that 20 veterans commit suicide a day. The risk of suicide for veterans is 21 percent higher when compared to civilian adults. The civilian suicide rate rose 23.3% between 2001 and 2014 while the veteran rate rose 32%. More disturbing is the female veteran suicide rate which rose 85% during that time compared to their civilian counterparts which rose 40%.42 Suicide rates are at all an all-time high. It is an epidemic. This human cost could be alleviated by substituting robots for many of the combat roles now filled by their inherently fragile human counterparts. Posttraumatic Stress Disorder (PTSD) is also more common in the military as compared to the civilian population. According to a recent Veteran Affairs study, approximately 7-8% of the population will have PTSD at some point in their lives. The veteran rate is higher and varies by war. Approximately 30% of Vietnam veterans were diagnosed with PTSD according to the National Vietnam Veterans Readjustment Study (NVVRS).43 Approximately 20% of Operation Iraqi Freedom and Operation Enduring Freedom veterans have been diagnosed per year.44 The latter number will most likely rise as more cases are diagnosed. PTSD can and does affect a service member’s ability to do their job and can lead to a service member to be medically retired. The societal burden of warfare is costly and will continue to rise if the nation continues to rely heavily on large numbers of troops. A recent study claimed that veterans are 50% more likely to become homeless as compared to non-veterans. The study stated that the causes were due to: “poverty, lack of support networks, and dismal living conditions in overcrowded or substandard housing.”45 While those reasons are the immediate causes for homelessness they are indicative of addressing a symptom and not the actual problem. Veterans also struggle with the fact that after their uniformed service many do not have translatable skills that can be used in a non-wartime environment. Using robots would require soldiers to be able to troubleshoot and maintain the robots resulting in skills that are desired by many high-tech corporations. Additionally, it would decrease the number of soldiers needed for jobs that are not as applicable in a non-wartime environment such as route clearance, explosive ordnance disposal, and base security. In conclusion, humans are vulnerable to the detrimental effects of warfare while robots are not. The physiological effects of combat trauma may render a human physically and psychologically unable to make sound decisions. If employed in battle, robots will not be as unethical as humans have the potential to be. Humans are emotional, desire revenge, and are prone to commit atrocities as a result. Human service members are also expensive, especially when they are killed or wounded. The psychological impacts of war are unavoidable and destructive. Robots have no need for revenge, are unemotional, and are less expensive than human soldiers. Using robots on the battlefield will reduce economic and societal costs and save lives.

**--Extend - Impacts**

**Human soldiers make terrible battlefield decisions – they are overloaded with stress, trauma, and revenge.**

**Arkin, 2013 – prof at Georgia Tech** [Ronald “Lethal Autonomous Systems and the Plight of the Non-combatant” AISB Quarterly, No. 137, July https://smartech.gatech.edu/handle/1853/50079?show=full Acc 12/27/20 TA]

It must be noted that past and present trends in human behavior in the battlefield regarding adhering to legal and ethical requirements are questionable at best. Unfortunately, humanity has a rather dismal record in ethical behavior in the battlefield. Potential explanations for the persistence of war crimes include: high friendly losses leading to a tendency to seek revenge; high turnover in the chain of command leading to weakened leadership; dehumanisation of the enemy through the use of derogatory names and epithets; poorly trained or inexperienced troops; no clearly defined enemy; unclear orders where intent of the order may be interpreted incorrectly as unlawful; youth and immaturity of troops; external pressure, e.g., for a need to produce a high body count of the enemy; and pleasure from power of killing or an overwhelming sense of frustration. There is clear room for improvement and autonomous systems may help address some of these problems. Robotics technology, suitably deployed may assist with the plight of the innocent noncombatant caught in the battlefield. If used without suitable precautions, however, it could potentially exacerbate the already existing violations by human soldiers. While I have the utmost respect for our young men and women warfighters, they are placed into conditions in modern warfare under which no human being was ever designed to function. In such a context, expecting a strict adherence to the Laws of War (LOW) seems unreasonable and unattainable by a significant number of soldiers6. Battlefield atrocities have been present since the beginnings of warfare, and despite the introduction of International Humanitarian Law (IHL) over the last 150 years or so, these tendencies persist and are well documented,7 even more so in the days of CNN and the Internet. ‘Armies, armed groups, political and religious movements have been killing civilians since time immemorial.’8 ‘Atrocity. . . is the most repulsive aspect of war, and that which resides within man and permits him to perform these acts is the most repulsive aspect of mankind’.9 The dangers of abuse of unmanned robotic systems in war, such as the Predator and Reaper drones, are well documented; they occur even when a human operator is directly in charge.10 Given this, questions then arise regarding if and how these new robotic systems can conform as well as, or better than, our soldiers with respect to adherence to the existing IHL. If achievable, this would result in a reduction in collateral damage, i.e., noncombatant casualties and damage to civilian property, which translates into saving innocent lives. If achievable this could result in a moral requirement necessitating the use of these systems.

**Autonomous AI will reduce civilian deaths by reducing the impact of human error.**

**Arkin, 2013 – prof at Georgia Tech** [Ronald “Lethal Autonomous Systems and the Plight of the Non-combatant” AISB Quarterly, No. 137, July https://smartech.gatech.edu/handle/1853/50079?show=full Acc 12/27/20 TA]

Is there any cause for optimism that this form of technology can lead to a reduction in non-combatant deaths and casualties? I believe so, for the following reasons. – The ability to act conservatively: i.e., they do not need to protect themselves in cases of low certainty of target identification. Autonomous armed robotic vehicles do not need to have self-preservation as a foremost drive, if at all. They can be used in a selfsacrificing manner if needed and appropriate without reservation by a commanding officer. There is no need for a ‘shoot first, ask-questions later’ approach, but rather a ‘first-do-no-harm’ strategy can be utilized instead. They can truly assume risk on behalf of the noncombatant, something that soldiers are schooled in, but which some have difficulty achieving in practice. – The eventual development and use of a broad range of robotic sensors better equipped for battlefield observations than humans currently possess. This includes ongoing technological advances in electro-optics, synthetic aperture or wall penetrating radars, acoustics, and seismic sensing, to name but a few. There is reason to believe in the future that robotic systems will be able to pierce the fog of war more effectively than humans ever could. – Unmanned robotic systems can be designed without emotions that cloud their judgment or result in anger and frustration with ongoing battlefield events. In addition, ‘Fear and hysteria are always latent in combat, often real, and they press us toward fearful measures and criminal behavior’13. Autonomous agents need not suffer similarly. – Avoidance of the human psychological problem of ‘scenario fulfilment’ is possible. This phenomenon leads to distortion or neglect of contradictory information in stressful situations, where humans use new incoming information in ways that only fit their pre-existing belief patterns. Robots need not be vulnerable to such patterns of premature cognitive closure. Such failings are believed to have led to the downing of an Iranian airliner by the USS Vincennes in 1988.14 – Intelligent electronic systems can integrate more information from more sources far faster before responding with lethal force than a human possibly could in real-time. These data can arise from multiple remote sensors and intelligence (including human) sources, as part of the Army’s network-centric warfare concept and the concurrent development of the Global Information Grid. ‘Military systems (including weapons) now on the horizon will be too fast, too small, too numerous and will create an environment too complex for humans to direct’15. – When working in a team of combined human soldiers and autonomous systems as an organic asset, they have the potential capability of independently and objectively monitoring ethical behavior in the battlefield by all parties, providing evidence and reporting infractions that might be observed. This presence alone might possibly lead to a reduction in human ethical infractions.

**Even if LAWs don’t make Perfect choices, they are Much better than humans, who face Six obstacles to decision making in combat.**

**Arkin, 2008 – the Mobile Robot Laboratory at Georgia Institute of Technology** [Ronald “Technical Report GIT-GVU-07-11 Governing Lethal Behavior: Embedding Ethics in a Hybrid Deliberative/Reactive Robot Architecture” <https://dl.acm.org/doi/abs/10.1145/1349822.1349839> Acc 12/27/20 TA]

It is not my belief that an unmanned system will be able to be perfectly ethical in the battlefield, but I am convinced that they can perform more ethically than human soldiers are capable of. Unfortunately the trends in human behavior in the battlefield regarding adhering to legal and ethical requirements are questionable at best. A recent report from the Surgeon General’s Office [Surgeon General 06] assessing the battlefield ethics of soldiers and marines deployed in Operation Iraqi Freedom is disconcerting. The following findings are taken directly from that report: 1. Approximately 10% of Soldiers and Marines report mistreating noncombatants (damaged/destroyed Iraqi property when not necessary or hit/kicked a noncombatant when not necessary). Soldiers that have high levels of anger, experience high levels of combat or those who screened positive for a mental health problem were nearly twice as likely to mistreat non-combatants as those who had low levels of anger or combat or screened negative for a mental health problem. 2. Only 47% of Soldiers and 38% of Marines agreed that noncombatants should be treated with dignity and respect. 3. Well over a third of Soldiers and Marines reported torture should be allowed, whether to save the life of a fellow Soldier or Marine or to obtain important information about insurgents. 4. 17% of Soldiers and Marines agreed or strongly agreed that all noncombatants should be treated as insurgents. 5. Just under 10% of soldiers and marines reported that their unit modifies the ROE to accomplish the mission. 6. 45% of Soldiers and 60% of Marines did not agree that they would report a fellow soldier/marine if he had injured or killed an innocent noncombatant. 7. Only 43% of Soldiers and 30% of Marines agreed they would report a unit member for unnecessarily damaging or destroying private property. 8. Less than half of Soldiers and Marines would report a team member for an unethical behavior. 9. A third of Marines and over a quarter of Soldiers did not agree that their NCOs and Officers made it clear not to mistreat noncombatants. 10. Although they reported receiving ethical training, 28% of Soldiers and 31% of Marines reported facing ethical situations in which they did not know how to respond. 11. Soldiers and Marines are more likely to report engaging in the mistreatment of Iraqi noncombatants when they are angry, and are twice as likely to engage in unethical behavior in the battlefield than when they have low levels of anger. 12. Combat experience, particularly losing a team member, was related to an increase in ethical violations.

**--Extend - Turns Ethics**

**AI’s ability to avoid human emotions is what makes it more ethical – autonomous weapons are able to avoid the atrocities that come from human psychological reactions**

**Del Re, 2017 – US Army Major** [Amanda “Lethal Autonomous Weapons: Take the Human Out of the Loop A paper submitted to the Faculty of the US Naval War College in partial satisfaction of the requirements for the Ethics of Emerging Military Technology Graduate Certificate. 16 June 2017 https://apps.dtic.mil/sti/citations/AD1041804 Acc 12/27/20 TA]

Humans are high-maintenance, flawed, and deal poorly with the horrific effects of war. Robots can be far more proficient at warfare. Humans after all, are human. They make mistakes often and emotion clouds their judgment. Humans require a great deal of maintenance to be at peak performance. Humans fall prey to the horrors of war, often resulting in atrocities and long-term physical and psychological damage. Human troops are expensive and, in the long run, more expensive than robots. Robots are unemotional, cheaper, and not susceptible to committing an atrocity for self-preservation or revenge. This chapter examines why humans are inferior warriors and why robots may be superior and more ethical combatants. The stresses of combat affect judgment. Consider a few personal accounts of dealing with combat stress. James R. McDonough, a Platoon Leader in Vietnam, describes his uncontrollable emotions after surviving his first firefight: “My emotions were breaking through the fatigue that had numbed them, and my mood shifted dramatically from one extreme to another.”2 McDonough is describing the effects of shock after trauma. He initially felt detached or “numbed,” and in the aftermath of battle his erratic emotions are irrepressible. Napoleon had described that the most dangerous point in battle is immediately after victory because that is when the soldier is most vulnerable to counterattack.3 Although Napoleon did not realize it at the time, he was describing “parasympathetic backlash” which occurs immediately after the attack “has halted and the soldier briefly believes himself to be safe.”4 During this parasympathetic backlash, a soldier becomes “physiologically and psychologically incapacitated” or, in McDonough’s case, “numbed.”5 Karl Marlantes, also a Platoon Leader in Vietnam, echoes this theory when he describes his experience in war as “the predominant feeling when you win in battle, is numbed exhaustion.”6 Critics of autonomous weapons state that humans possess judgment, something that a robot never could. However, the concept of the parasympathetic backlash undermines reliance on human judgment since humans may be unable to control their basic functions and emotions during and even some duration after the trauma of battle.

**If AI can reduce civilian deaths, then it is the most ethical option**

**Del Re, 2017 – US Army Major** [Amanda “Lethal Autonomous Weapons: Take the Human Out of the Loop A paper submitted to the Faculty of the US Naval War College in partial satisfaction of the requirements for the Ethics of Emerging Military Technology Graduate Certificate. 16 June 2017 https://apps.dtic.mil/sti/citations/AD1041804 Acc 12/27/20 TA]

The human body, like a robot, is a complex system of systems. Yet unlike their robot counterparts, human shortcomings are magnified in combat when physiological and cognitive systems are stressed. Robots’ have no sympathetic nervous system susceptible to rapid changes in heart rate, blood pressure, and blood glucose levels during combat. Unencumbered by a sympathetic nervous system, robots are not susceptible to the “parasympathetic backlash;” they will not be “numbed” or “stunned” after battle. Rather, robots will remain consistent and calm during and after all combat engagements. Moreover, the heat of battle will not disrupt a robot’s decision-making abilities, but it will disrupt a human’s which could lead to errors in judgment and ethical mistakes. Humans have been struggling with ethical conduct throughout the long history of warfare. Robots may help solve some of the ethical problems that emerge in warfare and may be the answer to some of the ethical questions that warfare asks. Consider several examples from the history of warfare in which human emotion drove an unethical decision and had dire consequences.

**AT NATO Key**

**NATO is not key – its diversity and complexity have are not well analyzed**

**Trabucco and Stanley-Lockman, 2022 – prof of Political Science, University of Copenhagen and prof of Defense and Strategic Studies, Nanyang Technological University** [Lena and Zoe, The Oxford Handbook of AI Governance, March, “NATO’s Role in Responsible AI Governance in Military Affairs” https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780197579329.001.0001/oxfordhb-9780197579329-e-69 Acc 4/16/22 TA]

To be sure, NATO is far from the only institution that impacts military AI governance and its security implications. Indeed, international technology governance is inherently complex because it includes diverse stakeholders in a system of “organizations, regimes, and other forms of principles, norms, regulations, and decision-making procedures” with a shared interest and responsibility in a given issue-area of world politics.9 Existing discussions of the impact of AI on international security have looked to nation-states, regional institutions like the European Union (EU), or international bodies like the United Nations Convention on Certain Conventional Weapons (UN CCW) for discussions on the military governance of AI.10 Without expanding on the role of these other stakeholders, this chapter begins to explore pressing questions for NATO and international relations scholars that illustrate NATO’s role in AI governance, which has not had a comprehensive analysis.11

**NATO is not a leader in AI technology – it has to coordinate as a group, and not every nation is committed to AI**

**Tucker, 2018 - Technology Editor at Defense One** [Patrick, May 18, “How NATO’s Transformation Chief Is Pushing the Alliance to Keep Up in AI” https://www.defenseone.com/technology/2018/05/how-natos-transformation-chief-pushing-alliance-keep-ai/148301/ Acc 4/22/22 TA]

The United States, Russia, and China — in varying ways — have described artificial intelligence as central to the way they intend to develop weapons and fight. In September, Vladimir Putin famously said that the leading player in AI will rule the world. China is sprinting forward with a massive plan to become the world’s center for AI innovation by 2030. NATO is rushing to keep up, said Mercier. But as an organization of nations — as various in wealth and technological capability as they are in language and culture — the alliance can’t move as quickly as individual great powers to adopt emerging technologies and integrate them into operations. Some NATO members, such as Estonia, punch well above their weight in AI and robotics. Other NATO member states… less so.

**1NC - OSCE CP**

**CP Text - The Organization for Security and Cooperation in Europe should adopt ethical principles to ensure human control in military artificial intelligence systems.**

**Solvency – The OSCE can establish norms on AI ethics. A declaration would promote international norms due to its history of working across the East West gap and its reputation for building trust.**

**Nadibaidze, 2021 - Ph.D. Student at the University of Southern Denmark** [Anna Entry submitted for the Second OSCE-IFSH Essay Competition “Commitment to Control over Weaponised Artificial Intelligence: A Step Forward for the OSCE and European Security” https://www.osce.org/files/f/documents/8/3/507341.pdf Acc. 4/21/22 TA]

In sum, a political declaration should contain a commitment to keeping human control over existant AI-driven weapons systems. Agreeing to enshrine such a commitment in a document with a soft law nature would be a step forward not only towards addressing regional security threats, but also towards an international framework on weaponised AI. As highlighted in this section, the history and membership of the OSCE make it the organisation to built trust and take a step forward on weaponised AI, at a moment when global discussion at the UN is stalling and when operational trends continue to increase autonomy. Conclusion This essay has argued that current practices related to the use of weaponised AI already impact European stability and security. Operational trends are diminishing the level of human control over weapons with increasingly autonomous features in their critical functions, which poses significant legal, ethical and security risks. Moreover, the lack of definition of LAWS and a common conception of an appropriate level of human control among participating States creates uncertainty and potential for misinterpretation. At the same time, the trajectory of AI is not set to be an ‘arms race’, as “arms races are not inevitable, but can be managed, channeled or even stopped” (Maas 2019, 303). States can intervene in a variety of political ways to address the impacts of existing weaponised AI. Finding a common agreement is a challenging, but not impossible task. In this essay, I have argued that the OSCE is a promising platform to build upon the stalled discussions at the CCW. This institution has a history of acting as a bridge between Eastern and Western perspectives of European security. It is an inclusive organisation which brings together not only the Euro-Atlantic Community, but also the Russian Federation, one of the key developers of weaponised AI and players in European security. By debating the issue of weaponised AI at the OSCE and agreeing on a political declaration with commitment to human control, participating States will address the risks of autonomy in weapons systems, as well demonstrate as the relevance of the OSCE in tackling the impact of new technologies and their use in conventional weapons.

**The OSCE solves crisis miscalculation by sharing information and increasing confidence**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

Information about the types of AWS that states employ, the aspects of autonomy and human control in AWS, the intended uses of AWS, and demonstrations of AWS use would together provide greater information regarding the scope of AWS deployment and use in military operations. They would also strengthen confidence that AWS are being designed and deployed in ways that aim to avoid inadvertent conflict escalation. Although these CBMs would not fully eliminate the military risks posed by AWS (including the risks posed by AWS malfunctions), they could help to reduce misunderstandings and thereby moderate the responses by other states. Additionally, such CBMs could be applied to future AWS. Much of the concern over the risks posed by AWS is centred on cutting-edge and future systems of this kind. Although the exact nature of future AWS cannot be predicted, CBMs that are designed to reduce the risks posed by various elements of autonomy would be useful for reducing the risks posed by both existing and future AWS. Given the ever-increasing integration of autonomy into weapons systems, these AWS CBMs could take the form of an addendum to the Vienna Document, which covers all conventional weapons systems. The CBMs proposed here build on precedents in the Vienna Document, and thus amending the Vienna Document to address risks arising from AWS would be a logical progression that would be acceptable to states. Alternatively, AWS CBMs could be agreed as a stand-alone set of CBMs, in the style of the OSCE’s CBMs for Information and Communication Technologies. Regarding the institutional format used to discuss, negotiate and develop AWS CBMs, the OSCE Structured Dialogue (established in 2016) could provide a dedicated venue for negotiating such CBMs. An alternate approach would be for the OSCE to set up a new venue for such negotiations.

**The OSCE solves better than NATO because of its inclusive membership. Russia will only participate if NATO is not involved, due to their adversarial relationship.**

**Nadibaidze, 2021 - Ph.D. Student at the University of Southern Denmark** [Anna Entry submitted for the Second OSCE-IFSH Essay Competition “Commitment to Control over Weaponised Artificial Intelligence: A Step Forward for the OSCE and European Security” https://www.osce.org/files/f/documents/8/3/507341.pdf Acc. 4/21/22 TA]

Other international institutions have shown their ambitions in AI regulation. In April 2021, the European Commission presented its legal framework proposal, which, while not touching upon security and defence, could set a path forward towards a regional approach to governing weaponised AI (European Commission 2021).1 NATO is also due to present an AI strategy and set forward its “principles of responsible use of AI in defence” (NATO Newsroom 2021). The key difference is that these institutions have favored exclusive membership, where prospective countries need to fulfill specific conditions to join. Meanwhile, the OSCE has relatively easy accession rules, as it was initially based on the concept of geopolitical diversity (Pourchot 2011, 183). Crucially, the OSCE includes not only the Euro-Atlantic community, but also other major security actors, notably the Russian Federation. Settling the differences and misunderstandings between Russia and the US is a key step in achieving a security agreement such as a commitment to human control over weaponised AI. In recent years, the Russian discourse has shown a disappointment towards Western countries and their making NATO as the main European security organisation (Kropatcheva 2012, 386). By engaging with Russia upon the issue of weaponised AI within the OSCE framework, the US and the EU would contribute to easing the tensions, while also diminishing the chances of misunderstanding and misinterpretation which could lead to severe security risks, as outlined in the first section. The OSCE’s inclusive membership is thus a valuable advantage when it comes to building trust and mitigating the security implications of emerging technologies (Dunay 2006, 25).

**--Extend - OSCE Solves Best**

**The OSCE solves best due to its inclusive membership – that is best for building trust and cooperation with Russia.**

**Nadibaidze, 2021 - Ph.D. Student at the University of Southern Denmark** [Anna Entry submitted for the Second OSCE-IFSH Essay Competition “Commitment to Control over Weaponised Artificial Intelligence: A Step Forward for the OSCE and European Security” https://www.osce.org/files/f/documents/8/3/507341.pdf Acc. 4/21/22 TA]

Strengthening Human Control: The Role of the OSCE Arriving to a common position on weaponised AI regulation will be challenging. The current global and European political atmosphere is one of distrust. There is distrust between two major European security players: Russia and the US. In June 2021, both President Joe Biden and President Vladimir Putin said that the bilateral relationship “has deteriorated to its lowest point in recent years” (Walters 2021). There is also distrust among state leaders towards technologies such as the Internet, AI, 5G and robotics, not least because they can be weaponised and used for threatening activities such as cyberattacks. This environment makes it difficult to find a common understanding and commit to principles on the use of weaponised AI. Nevertheless, in this section I argue that the OSCE possesses some key advantages to become the platform for making a step forward in the global debate. In 2019, the GGE on LAWS adopted a set of principles to guide the work of the group in the next years, which were endorsed by the CCW High Contracting Parties. These Guiding Principles are broad and have no legally binding force. As pointed out by the Campaign to Stop Killer Robots, the “CCW principles were simply intended to guide the deliberations. They were never supposed to be an end in themselves or intended to provide the structure for or outcome to CCW work on lethal autonomous weapons systems” (2020, 1). Moreover, they do not provide further clarifications on the concept of human control, only stating that “human responsibility for decisions on the use of weapons systems must be retained since accountability cannot be transferred to machines” (Principle b). Thus, while member states accept in principle the importance of human control, they have until now not been able to agree on a common definition of this concept, which is stalling the progress of the CCW debate (Bolton et al. 2021). Just like the CCW, the OSCE operates via consensus, which requires seeking a compromise between participating States and can often hamper the decision-making process. However, this institution has been historically known for its ambition to form an inclusive security community and to build practices that “suggest a new model of international security”, described as “comprehensive”, “indivisible”, and “cooperative” (Adler 1998, 119). The former Conference on Security and Cooperation in Europe (CSCE) was a symbol of détente between the US and the Soviet Union, and a place for two rivals to find compromise on security issues, demonstrating the possibility of coexistence on the European continent (Rittberger et al. 2012, 42). The Helsinki Final Act negotiations were a cooperative process, with the goal of promoting communication, as well as increasing confidence between States (Sandole 2007, 65). The negotiations resulted in a declaration of common norms and values of the participating States. Following the Cold War, the OSCE was not only able to survive, but also to change its goals and adapt to the rising security challenges of the new world order. Its broad membership and comprehensive approach towards security make it a key, if not the most, legitimate institution for European security (Mosser 2015, 584). At a time when some experts debate whether Russia-US relations have entered a ‘new Cold War’ (Polyakova 2019), the OSCE’s inclusive approach towards security is the one that is needed to show that tensions can be dealt with in a forum, rather than in the battlefield.

**The OSCE solves best because it bridges East West tensions and builds consensus historically.**

**Nadibaidze, 2021 - Ph.D. Student at the University of Southern Denmark** [Anna Entry submitted for the Second OSCE-IFSH Essay Competition “Commitment to Control over Weaponised Artificial Intelligence: A Step Forward for the OSCE and European Security” https://www.osce.org/files/f/documents/8/3/507341.pdf Acc. 4/21/22 TA]

This essay examines the impacts of weaponised Artificial Intelligence (AI) for European security and proposes solutions to mitigate the risks caused by the lack of regulation of autonomy in weapons systems. Studying how OSCE participating States use and talk about weaponised AI, it demonstrates that the diminishing human control over the use of force and the differences in States’ discourses pose a considerable risk for regional stability. At the same time, it suggests that the trajectory of the impact of AI is not inevitable, and that States should address this issue via political means, specifically a political declaration with a commitment to human control over the use of force. Finally, it argues that due to its inclusive membership, the OSCE can become the platform which can build trust and consensus, two necessary elements to make a step forward in the global debate on weaponised AI. Introduction Recent technological and political developments in participating States of the Organization for Security and Co-operation in Europe (OSCE) suggest a strong interest to pursue, test and use weaponised Artificial Intelligence (AI), specifically weapons systems with increasingly autonomous features operating on the base of algorithms. In May 2021, Defence Minister Sergei Shoigu announced that the Russian Federation has begun producing “combat robots capable of fighting on their own” (TASS 2021). According to media reports, the French Land Army is planning to introduce robots by 2040 (Barotte 2021). The UK Government stated its objective of achieving “a leading role in critical and emerging technologies” (HM Government 2021, 38) and has established a Defence Artificial Intelligence and Autonomy Unit to better understand them (Ministry of Defence 2020, 15). In the United States, the National Security Commission on Artificial Intelligence (NSCAI) has urged the government to “not be a witness to the AI revolution in military affairs” and “deliver it with leadership from the top, new operating concepts, relentless experimentation, and a system that rewards agility and risk” (2021, 77). Nadibaidze 2 While the global discussion about autonomy in weapons systems is often framed in a futuristic way and focuses on fully lethal autonomous weapons systems (LAWS) – colloquially called ‘killer robots’ – or the ‘AI arms race’, weaponised AI is already a reality of European security. Due to its current wide-ranging impacts, this issue deserves the attention of the OSCE and especially the military-political component of its multidimensional approach to regional security. Nevertheless, so far participating States have been reluctant to benefit from the OSCE platform to address the risks caused by increasing autonomy in weapons systems. Building upon this puzzle, this essay intends to address the following questions: How does the lack of regulation of weaponised AI affect security and stability in Europe? What role can the OSCE play in mitigating the risks related to weaponised AI? In the first section, I argue that the international debate on weaponised AI should take existing weapons systems as a starting point and highlight the impacts of practices related to weaponised AI for European security and stability. By analysing how weaponised AI is used and is talked about, I point to the issues of diminishing human control over the use of force as well as the uncertainty caused by the lack of a common definition of LAWS among OSCE participating States, while examining the case studies of France, Russia and the UK. Further, I argue that the trajectory of the impact of weaponised AI for European security and stability is not set in stone and that the current framing of the debate overestimates the agency of AI and its military uses. Therefore, there is a possibility of changing the trajectory of this impact by, as a first step, agreeing on basic principles about responsible use of weaponised AI. In the second section, I argue that, given its large membership which includes the Russian perspective, as well as its historical role as a consensus-builder and a forum for bridging East-West tensions, the OSCE has a key role to play in terms of re-structuring the global debate on weaponised AI. The global political tensions between Russia and the United States make an agreement on emerging technologies such as AI more challenging, but not impossible. At a moment when the debates on LAWS at the United Nations are stalling, the OSCE can and should take a step forward by building consensus on guiding principles, issuing a political declaration with a commitment to human control over weapons systems, and demonstrating that the impact of AI depends on how states decide to use it.

**--Extend – OSCE CBM Solvency**

**OSCE declarations are a confidence building measure – OSCE CBMs are more legitimate due to their broad membership. Empirically proven.**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

CBMs are voluntary measures designed to communicate ‘credible evidence of the absence of feared threats by reducing uncertainties and by constraining opportunities for exerting pressure through military activity’. Given the OSCE’s membership and history, OSCE CBMs would make a particularly significant contribution to reducing the risks posed by AWS. The OSCE’s membership is both broad (the organisation has 57 participating States, encompassing not only all European states, but Central Asian and North American states as well) and includes seven of the top ten arms producers in the period 2015-2019. OSCE CBMs, thus, have a legitimacy based on both the breadth and number of states that subscribe to them and the involvement of key arms producers. Among international organisations (both regional and global), the OSCE is distinctive for its history of establishing strong norms for using CBMs as tools for risk reduction. AWS CBMs would build on the OSCE’s robust record of reducing military risk through CBMs. The Vienna Document - the cornerstone of OSCE CBMs - has provided a strong framework for building confidence among OSCE participating states, reducing military risks and increasing security in the OSCE region. Other OSCE instruments like the Conventional Forces in Europe Treaty and the Open Skies Treaty provide further information about states’ activities and are thus able to build trust among OSCE members (even though both treaties are currently under strain). However, these agreements are designed to address the risks posed by conventional weapons rather than risks from AWS. Still, the OSCE’s recent adoption of CBMs for Information and Communication Technologies (adopted in 2013 and updated in 2016) demonstrates that the OSCE and its approach to CBMs are well suited to developing risk-reduction CBMs applicable to advanced technologies. The OSCE’s cyber CBMs have also provided a template for other states or regional organisations to develop their own cyber CBMs, building confidence and reducing risk both within and beyond the OSCE’s membership; CBMs for AWS could play a similar role. Although the original Vienna Document was negotiated at the end of the Cold War, its updates and revisions, together with the development of other OSCE CBMs, reflect how CBMs are not merely an outdated Cold War legacy, but continue to play an important role in building confidence and reducing risks.

**OSCE CBMs build trust and transparency – this helps establish global norms for AI autonomy.**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

• As autonomous weapons systems (AWS) increase in military importance, they pose significant risks of miscommunication, miscalculation and inadvertent conflict escalation. • The Organization for Security and Co-operation in Europe (OSCE) has a strong history of developing confidence-building measures (CBMs) to reduce military risks stemming from other types of weapons. • The OSCE should develop CBMs for partially autonomous weapons systems. Such CBMs should provide information about AWS features and doctrine for their use, to increase transparency and build trust between states. • OSCE CBMs could provide a foundation for the global governance of autonomous weapons in other multilateral venues. Autonomous weapons systems (AWS) are widely regarded as a game changer in the field of international security and an increasingly important element of military operations. However, they pose heightened risks of miscommunication, miscalculation, and the inadvertent escalation of a conflict that could increase tensions and conflict between states. Although the development of AWS and their use in military operations vary widely among Organization for Security and Co-operation in Europe (OSCE) states, many states both within and outside the OSCE are incorporating increasing numbers of AWS into their armed forces, raising concerns over the unintended risks associated with these weapons systems. Even states that do not currently employ AWS have concerns over other states’ use of this technology and the implications of AWS for international security and strategic stability. In the absence of formal treaties governing the use of AWS, confidence-building measures (CBMs) would provide a valuable tool for reducing military risks associated with AWS. This essay proposes that the OSCE develop CBMs for partially autonomous weapons systems, building on its successful history of developing CBMs to reduce other military risks.

**--Net Benefit - UN Modelling**

**OSCE CBMs are the first step toward building consensus in the UN – it demonstrates that the political will exists.**

**Nadibaidze, 2021 - Ph.D. Student at the University of Southern Denmark** [Anna Entry submitted for the Second OSCE-IFSH Essay Competition “Commitment to Control over Weaponised Artificial Intelligence: A Step Forward for the OSCE and European Security” https://www.osce.org/files/f/documents/8/3/507341.pdf Acc. 4/21/22 TA]

As a realistic starting point, the OSCE’s Confidence and Security Building Measures (CBMs) could provide a framework to exchange information and observations on the use of weaponised AI, in order to facilitate communication and dialogue (Egel 2021). The OSCE already has CBMs for Information Communication Technologies (ICTs), which, like weaponised AI, create “an area with much room for speculation, doubt, and ambiguity”, and “increase the potential for tensions between States” (OSCE website). There is also potential to go further than exchanging information informally within the CBMs framework. The next step should be, based on the recommendations of the International Panel on the Regulation of Autonomous Weapons (iPRAW), to “focus on the obligation to maintain human control over the use of force” which would “apply to all conventional weapons” (2021, 6). Taking this path will avoid the debate on defining LAWS, which has been hindering the progress of the CCW discussions. Based on the GGE Guiding Principles, the commitment to human control should be enshrined into a normative framework, for example a political declaration or a manual of best practices. Any document with a soft law standing, or a politically binding status, would already be a step forward. Such a political declaration could be part of the Vienna Document, or the result of a new Working Group established at the OSCE. Importantly, an OSCE political declaration or guiding code on weaponised AI would not go against the efforts at the CCW but would complement and build upon them. Shifting the discussion towards the current impacts of weaponised AI, rather than the potential future impact of ‘killer robots’ would be a progressive step to mitigate the risks coming from this emerging technology. An agreement at the OSCE would also be a preliminary step towards building consensus at the UN. It would demonstrate that finding consensus, especially in an atmosphere of political distrust, is possible. This is a relevant and crucial step for European and international security. While debates at the CCW continue, the operational trend towards further autonomy in the armed forces of OSCE participating States continues. As noted in the previous section, practices related to the use of weaponised AI have the potential to shape warfare norms. Yet, this trajectory is not inevitable and with the right approach, a political declaration committing to a common definition of human control is a realistic achievement.

**UN AI governance is failing now – OSCE declarations would reinvigorate it – empirically proven by the Small Arms Treaty.**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

The OSCE’s contribution to risk reduction Currently, global governance of AWS is under discussion within the framework of the Convention on Certain Conventional Weapons (CCW). This process, however, has been slow moving and fraught with disagreement over what AWS are, particularly regarding the distinction between fully and partially autonomous weapons systems. Rather than relying solely on the CCW to address the risks posed by AWS, regional organisations could develop mechanisms to reduce risks and build confidence that states’ increasing use of partially autonomous weapons would not be destabilising and escalatory. Such efforts could also help to energise the process under way in the CCW and facilitate a global agreement there. The OSCE has made such contributions before: OSCE information exchanges on small arms and light weapons, beginning with the 1993 OSCE Principles Governing Conventional Arms Transfers, helped pave the way for the 2013 Arms Trade Treaty.

**--AT Russia Blocks OSCE**

**The OSCE has been successful in incorporating Russia – cyber CBMs prove.**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

Moreover, the OSCE’s success in negotiating cyber CBMs in the context of tensions between the United States and the Russian Federation indicates that such tensions are not an insurmountable barrier to reaching agreement on CBMs of various kinds within the OSCE. Although negotiating new agreements in international organisations is rarely easy, the OSCE’s track record shows that it is capable of doing so. This stands in contrast to many other international organisations in which geopolitical tensions have prevented progress on agreements to govern new risks. The OSCE’s resilience in the face of such geopolitical challenges demonstrates its importance and efficacy as a vehicle for addressing security threats and military risks.

**--AT OSCE is Voluntary**

**Voluntary CBMs reduce military risks by avoiding miscommunication and reducing tensions.**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

Given the difficulty of negotiating legally binding treaties governing weapons in the current geopolitical environment, informal and voluntary CBMs provide a valuable and practical way to reduce military risks arising from AWS. CBMs provide information about other states’ capabilities and intentions in order to reduce risks arising from miscalculation and miscommunication and to build trust between parties. Although CBMs are, by design, voluntary measures, OSCE CBMs have provided a valuable framework for reducing tensions and lowering risks associated with other weapons and military activities. Additionally, in 2019 the OSCE Parliamentary Assembly called on OSCE members to support international negotiations to ban lethal autonomous weapons (also referred to as fully autonomous weapons). CBMs for partially autonomous weapons would support efforts in this area while also reducing the risks posed by these kinds of weapons systems.

**Voluntary CBMs build support for Codes of Conduct – empirically proven.**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

Even if the CCW eventually bans fully autonomous weapons, OSCE CBMs would still be very useful for reducing the risks posed by partially autonomous weapons systems. Autonomy is and will continue to be important in military operations, regardless of whether fully autonomous systems are banned. CBMs for partially autonomous weapons could also strengthen confidence in a future agreement banning fully autonomous weapons. By providing information about the extent of human control over AWS and how AWS would be used, such CBMs could be used in assessments of states’ compliance with such an agreement. OSCE AWS CBMs could also provide the basis for a future OSCE code of conduct for AWS involving doctrinal restrictions on use. The OSCE has precedents here, too, with its Principles Governing Conventional Arms Transfers, its Code of Conduct on Politico-Military Aspects of Security, and its Principles Governing Non-Proliferation. Like CBMs, codes of conduct (including principles governing behaviour) are voluntary rather than legally binding agreements. However, whereas CBMs reduce risk and build trust by providing information about other states’ capabilities and intentions, codes of conduct go further by endorsing certain behaviours and proscribing others. An OSCE AWS code of conduct could further reduce military risks by proscribing certain uses of AWS or forms of autonomy (e.g. fully autonomous weapons that lack human supervision) and/or endorsing certain requirements for human control over AWS. By building confidence and trust among states, CBMs could facilitate further cooperation and agreements.

**--AT OSCE Fragmented**

**Empirically, the OSCE CBMs have reduced the risk of war and miscalculation, even during times of political tensions**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

Conclusion CBMs for AWS would make a significant contribution to reducing the military risks posed by AWS and - equally important - are a realistic goal. Although agreement within the OSCE cannot be assured, its strong history of developing CBMs and its ability to make progress towards reducing military risk even in a climate of geopolitical tensions makes the OSCE uniquely well positioned to develop AWS CBMs. The growing proliferation of AWS and their increasing importance in military operations means that risk reduction is an urgent priority. Given the numerous challenges to arms control and cooperative security measures in other international organisations, OSCE CBMs offer one of the best opportunities for making progress in reducing the military risks of AWS. Moreover, they would provide a foundation for further governance of AWS by other international organisations. The CBMs proposed here would provide greater transparency regarding states’ capabilities and intentions regarding AWS, and in doing so, would reduce the risks of miscommunication, miscalculation and inadvertent conflict escalation that these systems pose.

**--AT China not in OSCE**

**OSCE CBMs can promote global agreements that include China**

**Egel, 2021 - Nuclear Security Visiting Fellow at the Truman Center for National Policy** [Naomi, PhD candidate at Cornell, January, Geneva Centre for Security Policy Strategic Security Analysis” Issue 16, “Reducing Military Risks through OSCE Instruments: The Untapped Potential in the European Arms Control Framework” https://www.gcsp.ch/publications/reducing-military-risks-through-osce-instruments-the-untapped-potential-in-the-European-arms-control-framework Acc 2/27/22 TA]

Far-reaching benefits of AWS CBMs In addition to reducing the military risks posed by AWS, the process of developing AWS CBMs in the OSCE would also help to strengthen policymakers’ understanding of the role of autonomy in military operations. This would facilitate further international cooperation on AWS governance. Within the context of the CCW - at present the primary global venue considering AWS governance - debates over AWS are often stymied by diplomats’ unfamiliarity with these systems. Greater transparency and information regarding states’ AWS capabilities (including the varying elements of autonomy in these systems) and use would ameliorate this impediment to reaching an agreement. Developing AWS CBMs in the OSCE would thus help to provide a foundation for the global governance of AWS. Moreover, while OSCE CBMs would not include China (a leader in the development and use of AWS), OSCE CBMs could lay the groundwork for a global agreement that would include China. An OSCE-developed template of CBMs could also be applied outside the OSCE region, either in a global agreement or through agreements in other regional organisations.

**1NC - UN CP**

**CP Text - The United Nations should adopt ethical principles to ensure human control in military artificial intelligence systems.**

**The UN is best to create a global norm for human control because it builds on its principles from the CCW. UN Leadership would restore the credibility of global governance**

**Bolton, 2021 - professor of political science at Pace University** [Matthew with Matilda Byrne, Ryan Gariepy, Emilia Javorsky, Volker Lehmann, and Laura Nolan, January “Addressing The Threat Of Autonomous Weapons Maintaining Meaningful Human Control” http://library.fes.de/pdf-files/iez/17215.pdf Acc 5/27/22 TA]

The 2019 Meeting of High Contracting Parties to the Convention on Certain Conventional Weapons (CCW) adopted 11 »Guiding Principles affirmed by the Group of Governmental Experts (GGE ) on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems.« (see Box 1). Some 40 UN Member States belonging to the »Alliance for Multilateralism« are now championing these 11 Guiding Principles and calling on States to contribute actively to the clarification and development of a normative and operational framework.2 The civil society-led Campaign to Stop Killer Robots is working for a preemptive ban on the development, production, and use of fully autonomous weapons. Similarly, UN Secretary- General António Guterres as well as his High Representative for Disarmament, Izumi Nakamitsu, have called for LAWS to be banned by international law.3 A growing number of Member States have also called for a prohibition of LAWS. At a minimum, there seems to be broad agreement that it is necessary that States have an obligation to maintain meaningful human control over the lethal use of force. Member States, with the support and active participation of the United Nations and other international organizations, civil society and the private sector, quickly need to reach common understandings on how to ensure human beings retain control over the use of force. Improving communication between policymakers and scientific and technical experts is crucial given the dual-use nature of artificial intelligence. Indeed, a prohibition on weapons outside of human control would not be counterproductive to technological development. Rather, there is a need to fully harness technological progress while maintaining and advancing international law that safeguards humanitarian protections, human rights and international peace and security. Therefore, in September and October 2020, the Friedrich- Ebert-Stiftung New York Office (FESN Y) launched the »New Alliances for Meaningful Human Control« project aimed at building on the 11 Guiding Principles on LAWS and moving them to the next level, towards international legal instruments that regulate high-tech weapons and prohibit LAWS. Linked to the UN 75 Global Governance Forum,4 FESN Y convened three discussions with representatives of governments, the United Nations, academia, civil society and the private sector to discuss the moral, ethical, legal and humanitarian challenges posed by LAWS (see Annex I for list of participants). Participants, speaking under Chatham House Rule, offered many diverse viewpoints, representing different perspectives on LAWS and pathways to addressing the risk they pose. 5 This paper is rooted in the discussions facilitated by FESN Y. While it summarizes the agreements between the co-authors, who participated, it does not purport to represent the views of all members of the discussions. For instance, participants disagreed on the precise meaning, scope and value of the 11 Guiding Principles. However, a significant majority agreed that good faith interpretation of the 11 Guiding Principles – particularly paragraphs b), c) and d) (see Box 1) – required progress toward negotiation of a legally-binding multilateral instrument mandating a positive obligation to maintain meaningful human control over the use of force, at the level of individual attacks. Given the contested international political environment, progress toward negotiating a legally-binding instrument would also demonstrate the potential for effective global governance, as currently spearheaded by the Alliance for Multilateralism. Towards this end, the subsequent paper argues that a potential venue for negotiating such a mandate could be within the CC W, in the form of a new protocol on meaningful human control. While positive obligations would be the most suitable starting point, a new protocol should also entail principles about technologies not to be developed and deployed. In what follows, two main issues will be addressed to help States as they move toward negotiations on a treaty to ensure meaningful human control: First, meaningful positive obligations, and second, legally-binding control.

**UN action solves for the case – it establishes global norms, provides flexibility, and serves as a clearinghouse for information even without a formal treaty.**

**Sauer, 2021 - Senior Research Fellow at Bundeswehr University** [Frank serves on the International Panel on the Regulation of Autonomous Weapons IRRC No. 913 March “Stepping back from the brink: Why multilateral regulation of autonomy in weapons systems is difficult, yet imperative and feasible” https://international-review.icrc.org/articles/stepping-back-from-brink-regulation-of-autonomous-weapons-systems-913 Acc 4/5/22 TA]

Fostering norm development in the CCW LAWS keep steadily gathering media attention around the globe.104 With mounting public pressure and increased scrutiny, there will be a strong incentive for CCW States Parties to produce tangible results for the 2021 Review Conference. The “aspects of the normative and operational framework” that are to be further developed over the course of 2021 could take a more concrete shape in three steps. First, consensus seems achievable on shared language that adopts the by now widely accepted functionalist view of weapon autonomy as well as a common understanding that some form of positive obligation and affirmation of the principle of human control over weapons systems is required.105 The CCW's guiding principle (b) already points this way in stating that “[h]uman responsibility for decisions on the use of weapons systems must be retained since accountability cannot be transferred to machines”.106 The Forum for Supporting the 2020 GGE on LAWS conducted in April 2020 as a webcast by the German Federal Foreign Office, with 320 registered participants representing sixty-three CCW States Parties, underlined the importance of further conceptualizing the human element. Controllability of weapons is arguably a proto-norm already,107 and a shared terminology – be it “meaningful human control” or some other formulation – could be found to stipulate in a general sense when humans and when machines are to be performing which function in the targeting cycle. The ICRC and the Stockholm International Peace Research Institute (SIPRI) recently presented a conceptual framework that can support this effort of operationalizing human control – that is, of clarifying the “who, what, when and how” of controlling weapons and limiting their autonomy.108 Second, since there is no one-size-fits-all standard of meaningful human control, the sharing of best practices and, more importantly, of case studies of specific weapons systems and operational scenarios could allow CCW States Parties to develop a deeper, shared conceptual grasp of the intricacies involved with implementing human control in design and use. The GGE is uniquely suited to facilitate these sorts of deep dives with analyses from multiple stakeholders and a sharing of legal, ethical and operational views. Smaller expert groups such as the International Panel on the Regulation of Autonomous Weapons (iPRAW) and the commission on the responsible use of technologies in the Franco-German Future Combat Air System are already beginning to organize their research toward that end. Third, a differentiated implementation scheme could be developed that conceives of human control as being exercised in a context-dependent way – that is, contingent on the weapons system, its mission environment, “target profiles”109 and additional factors such as mission duration.110 This human control scheme could prescribe minimum standards for controllability by design, for example regarding the ergonomics of human–machine interfaces, and determine “levels of human supervisory control”111 in use – that is, the tactics, techniques and procedures required to keep human control and responsibility intact during the system's operation. It currently seems unlikely that the CCW process, even if it were to complete these three steps, will end up yielding more than “soft law”, such as a consensual political declaration or a catalogue of best practices. In fact, a complete breakdown of the CCW process in Geneva is also within the realm of possibility. But even if the CCW turns out not to be the venue from which a legally binding regulation for weapon autonomy emerges, it has already served as an information hub and norm incubator for the last six years – and will continue to do. Especially considering the effect of the COVID-19 crisis on meeting schedules around the globe, it is currently too early to tell if other fora – and if so, which ones – can and should pick up the ball on regulation where the CCW leaves it in 2021, in order to further develop and codify the human control norm as binding international law.

**Extend – Human Control Solvency**

**UN action through the CCW would establish the human control norm and reduce the instability and escalation from AI weapons**

**International Panel on the Regulation of Autonomous Weapons, 2021** [(iPRAW) coordinated by: German Institute for International and Security Affairs, July “Building Blocks for a Regulation on LAWS and Human Control Updated Recommendations to the GGE on LAWS” https://www.readkong.com/page/building-blocks-for-a-regulation-on-laws-and-human-control-8617434 Acc 2/27/22 TA]

iPRAW recommends that the principle of human control should be internationally recognized within the CCW and possibly other documents of international law and be the basis from which requirements can be developed as part of a norm-shaping process. The elements presented below could be helpful to shape a regulation, be it legally binding or not. What is important though is to create a normative framework and operational guidance around the (development and) use of weapon systems with autonomous functions. For example, the ICRC presented one approach to such a framework by calling for a prohibition of unpredictable and anti-personnel AWS and a regulation of other AWS that considers the specific operational context. As iPRAW’s scenario-based discussions about the adequate type and level of human control illustrated, a definition of human control that adequately considers the operational context requires many details about technical capabilities and indicators for the targets. Hence, a ‘one-size-of-control-fits-all’ solution does not exist. Rather, a combination of minimum requirements and individual solutions is necessary. Individual solutions based on a case-by-case assessment will ultimately lead to different levels of granularity when it comes to formulating human control in a regulatory framework, e.g. a rather abstract declaration or treaty and more granular best practices and manuals. These could inform a regulation of LAWS and human control by creating the normative baseline and align with recommendations from other actors. As for example the ICRC discussed, it is crucial to link specific regulatory elements to the challenges raised by LAWS. Within the CCW such a regulation could cover:  military considerations: fulfilling the operational objective and translating the commanders intent to the battlefield,  legal concerns: abide by IHL principles, especially the principle of precaution by avoiding unpredictable effects, ensure human judgment to take legal decisions,  ethical concerns: retain moral agency. A CCW regulation entailing an obligation to maintain human control may also mitigate security challenges, such as conflict escalation, even though the CCW does not address them explicitly. Further important aspects, such as technology diffusion, will most likely not be addressed in a future regulation on LAWS but would have to be addressed in other fora. iPRAW’s model discussed below is not meant to read in opposition to the ICRC propositions on a prohibition and regulation of AWS but rather as an additional perspective with the same objective to keep human control in the use of force.

**A UN mandate for Human Control would effectively ban LAWs – it sets the stage for future treaties.**

**International Panel on the Regulation of Autonomous Weapons, 2021** [(iPRAW) coordinated by: German Institute for International and Security Affairs, July “Building Blocks for a Regulation on LAWS and Human Control Updated Recommendations to the GGE on LAWS” https://www.readkong.com/page/building-blocks-for-a-regulation-on-laws-and-human-control-8617434 Acc 2/27/22 TA]

General Obligations: A regulation of LAWS, e.g. a CCW Protocol, could consist of a general obligation to maintain human control over the use of force when deploying conventional weapons. The GGE Guiding Principles adopted in 2019 could lay the groundwork to further shape a future regulation. The Guiding Principles emphasize that IHL continues to fully apply to LAWS. Furthermore, they stress that human responsibility for the decision to use LAWS must be retained since accountability cannot be transferred to machines. This aspect should be considered throughout the entire life-cycle of a LAWS. They also stipulate that human-machine interaction must be in compliance with international law and refer, among others, to questions relating to accountability, weapon reviews, and risk assessments, including the development stage of weapon systems. In addition, other principles that were not explicitly mentioned in the Guiding Principles but found entry into other documents adopted by the GGE could also supplement a future regulation. Examples are the principle of predictability, reliability, and transparency. Specific Obligations: Specific obligations and more nuanced rules on the concept of human control could play a pivotal role in a future treaty focusing on human control. It could entail concrete rules stipulating that human control encompasses both situational understanding and the option to intervene, enabled by design and in use. The term situational understanding could be elaborated in more detail by stipulating that it refers to the ability to monitor information about the environment, the target and the weapon system. The human operator shall monitor the system and the operational environment to the extent necessary in a specific operation. Furthermore, the different modes of operation should allow the human operator to intervene if necessary. All people in the chain of command are equally obliged to abide by the rules of international law and should be held accountable for any violations of the law. These and other obligations could be an integral part of “specific obligations” in a future treaty on LAWS. The ICRC mentions two specifics that would call for tighter restrictions, namely AWS with unpredictable effects and the anti-personnel use of AWS.

**Extend - Modelling Solvency**

**The UN establishes a global model because it brings together the experience and information from many states.**

**International Panel on the Regulation of Autonomous Weapons, 2021** [(iPRAW) coordinated by: German Institute for International and Security Affairs, July “Building Blocks for a Regulation on LAWS and Human Control Updated Recommendations to the GGE on LAWS” https://www.readkong.com/page/building-blocks-for-a-regulation-on-laws-and-human-control-8617434 Acc 2/27/22 TA]

SOFT LAW Best Practices: States Parties to a CCW Protocol (or any other regulatory instrument) could meet regularly with the specific purpose of sharing experiences that were already made at the domestic level regarding the design, development, acquisition, deployment, and use of weapon systems with autonomous functions (under the assumption that the use of such weapons is lawful, meaning that human control is maintained). Especially States with significant experience in this area could provide knowledge and information about regulating LAWS and could show how human control is maintained in practice. Such experiences could serve as exemplary model for other States. Best practices are also a helpful instrument to establish additional standards on the design, development, acquisition, deployment, and use of LAWS based on cooperation, transparency, trust, and confidentiality. The sharing of best practices could promote the adoption of domestic laws on LAWS, ensuring that human control is maintained as required by military, legal, and ethical considerations.

**The UN can build consensus over time for a global norm.**

**Sauer, 2021 - Senior Research Fellow at Bundeswehr University** [Frank serves on the International Panel on the Regulation of Autonomous Weapons IRRC No. 913 March “Stepping back from the brink: Why multilateral regulation of autonomy in weapons systems is difficult, yet imperative and feasible” https://international-review.icrc.org/articles/stepping-back-from-brink-regulation-of-autonomous-weapons-systems-913 Acc 4/5/22 TA]

Conclusion A multilateral regulation of autonomy in weapons systems – that is, codifying a legally binding obligation to retain meaningful human control over the use of force – is difficult yet imperative to achieve. Severe strategic as well as ethical mid- and long-term risks, such as unintended conflict escalation at machine speed and the violation of human dignity, outweigh any short-term military benefits. This analysis has illustrated how regulating weapon autonomy is feasible, presenting a three-step process to facilitate stepping back from the brink: step one, foster the emerging consensus on the notion that a positive obligation to retain human control over weapons systems is prudent and urgently required; step two, further develop the insight that there is no one-size-fits-all standard of meaningful human control; and step three, devise differentiated, context-dependent human control schemes for weapons systems. Given the current geopolitical landscape and the lack of political will to engage in arms control efforts, the taking of these steps will resemble a marathon, not a sprint. After all, the perceived military value of weapon autonomy is exceptionally high, and the issue itself is elusive, requiring an innovative, qualitative approach to arms control. But history clearly suggests that great powers are not devoid of sensitivity to the accumulation of collective risks – otherwise arms control on nuclear, chemical and biological weapons would never have seen the light of day. The emerging technologies of the twenty-first century present humankind with the opportunity to demonstrate that it has learned from history before the risks have manifested themselves to their full extent. Humans do terrible things to each other in war, and there is no technological fix for that. But the international community can at least set rules to curb against uncontrolled escalation and the crossing of fundamental moral lines. If we fail to do so, we will not only lose the breathing room to ponder and deliberate responses,112 an essential requirement of political conflict management, as the Cuban Missile Crisis strongly suggests;113 we will also allow “the ultimate indignity” of war turning into “death by algorithm”.114

**Extend - Global Governance Net Benefit**

**CCW action on AI weapons would demonstrate the potential for global governance.**

**Bolton, 2021 - professor of political science at Pace University** [Matthew with Matilda Byrne, Ryan Gariepy, Emilia Javorsky, Volker Lehmann, and Laura Nolan, January “Addressing The Threat Of Autonomous Weapons Maintaining Meaningful Human Control” http://library.fes.de/pdf-files/iez/17215.pdf Acc 5/27/22 TA]

The Guiding Principles therefore are not a ceiling, but a steppingstone towards a more legally binding agreement that ensures binding human control, has meaningful positive obligations, and respects IH L and IHR L. In this regard, it is good news that the Principles’ political visibility increased after the endorsement of the Alliance for Multilateralism. Member States of the Alliance should therefore use this political momentum and lead the effort to negotiate an additional protocol to the CC W. After the November 2020 meetings of the GGE had to be cancelled due to Covid-19, attention is now on the next meeting of the High Contracting Parties to the CC W and the CC W Review Conference scheduled for 2021. Tangible progress by then is sorely needed to achieve some form of arms regulation in an area of rapid technological development. Moreover, progress toward new international law would demonstrate the potential for effective global governance, called for by the Alliance for Multilateralism. The Alliance itself is still in a phase of self-definition and is a rather loose collection of states. In fact, among the countries who supported the Alliance’s Guiding Principles, there are also 20 countries that have explicitly endorsed the call for a ban on LAWS. Progress on an additional protocol with meaningful obligations for human control of LAWS would demonstrate the bridge-building capacity of the Alliance and would increase its standing as an actor for effective global governance.

**1NC - Ban LAWS CP**

**CP Text – The United Nations should adopt a mandate prohibiting Lethal Autonomous Weapons.**

**Banning LAWs is a de facto mandate for human control – humans are the check on autonomy**

**International Panel on the Regulation of Autonomous Weapons, 2021** [(iPRAW) coordinated by: German Institute for International and Security Affairs, July “Building Blocks for a Regulation on LAWS and Human Control Updated Recommendations to the GGE on LAWS” https://www.readkong.com/page/building-blocks-for-a-regulation-on-laws-and-human-control-8617434 Acc 2/27/22 TA]

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**Only banning LAWs can avoid proliferation and an arms race**

**Docherty, 2014 - senior researcher in the Arms Division of Human Rights Watch** [Bonnie “Shaking the Foundations The Human Rights Implications of Killer Robots” Human Rights Watch http://www.hrw.org/sites/default/files/reports/ arms0514\_ForUpload\_0.pdf Acc 12/27/20 TA]

Fully autonomous weapons threaten to contravene foundational elements of human rights law. They could violate the right to life, a prerequisite for all other rights. Deficiencies in judgment, compassion, and capacity to identify with human beings could lead to arbitrary killing of civilians during law enforcement or armed conflict operations. Fully autonomous weapons could also cause harm for which individuals could not be held accountable, thus undermining the right to a remedy. Robots could not be punished, and superior officers, programmers, and manufacturers would all be likely to escape liability. Finally, as machines, fully autonomous weapons could not comprehend or respect the inherent dignity of human beings. The inability to uphold this underlying principle of human rights raises serious moral questions about the prospect of allowing a robot to take a human life. Proponents of fully autonomous weapons might argue that technology could eventually help address the problems identified in this report, and it is impossible to know where science will lead.85 In a 2013 public letter, however, more than 270 roboticists, artificial intelligence experts, and other scientists expressed their skepticism that adequate developments would be possible.86 Given this uncertainty, the potential of fully autonomous weapons to violate human rights law, combined with other ethical, legal, policy, and scientific concerns, demands a precautionary approach. The precautionary principle of international law states that “[w]here there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing costeffective measures.”87 When applied to fully autonomous weapons, this principle calls for preventive action to be taken now. Human Rights Watch and IHRC recommend a preemptive ban on fully autonomous weapons, which would forestall the troubling consequences described in this report and have great humanitarian benefits. It would also help prevent an arms race, block proliferation, and stop development before countries invest so heavily in this technology that they do not want to give it up.88 In determining the future of fully autonomous weapons, the international community should seriously consider their human rights implications and ensure the core components of this body of law receive protection.

**Respect for human dignity requires a ban on LAWs.**

**Johnson and Axinn, 2013 - Prof of Philosophy at the Univ of South Florida and PhD Candidate in Engineering at Penn** [Aaron and Sidney, Journal of Military Ethics, Volume 12, Issue 2, August “The Morality of Autonomous Robots” www.tandfonline.com/10.1080/15027570.2013.818399 Acc 12/27/20 TA]

Conclusion For the reasons presented above, reasons both military and humanitarian, we propose that autonomous robots, carrying lethal weapons and operated by computer programs alone, be treated on the same basis as the United States now treats chemical weapons (gas warfare among them). As noted earlier, the U.S. and all other nations should agree not use such weapons. A second Ottawa-style conference would be an appropriate mechanism to accomplish this moral goal internationally. Nuclear weapons are an example of technology that was brought into use before civilization and the laws of war could react to them. We need to act now to establish the moral and legal standing of automatic robots before they enter into common usage. The Ottawa conference prohibiting anti-personnel mines (August 2007), as mentioned, would be an excellent model for what should be done about automatic robots. A nation that relies on such weapons ignores the humanitarian basis for the laws of war, and when there is an international convention banning them, such a nation will be acting dishonorably. As technology continues to progress there will certainly be borderline questions, but the central notion cannot be abandoned, that a lethality decision is to be made only by a human and not a machine. That should remain the key focus of debate and be the guiding moral principle.

**--Extend – Ban LAWs Solvency**

**The best solution is to ban lethal autonomous weapons. Empirically, it has worked for other weapons and has broad international support.**

**Garcia, 2019 – International Panel for the Regulation of Autonomous Weapons at Northeastern Univ** [Denise, with Justin Haner – PhD student Global Policy, Sept 26 “The Artificial Intelligence Arms Race: Trends and World Leaders in Autonomous Weapons Development”<https://onlinelibrary.wiley.com/doi/full/10.1111/1758-5899.12713> Acc 12/27/20 TA]

Ending the artificial intelligence arms race with a ban on killer robots As the AI arms race rages on, the stakes remain high yet public debate is lacking. Sixty‐one per cent of citizens polled across more than twenty countries oppose the development of lethal AWS, and yet billions of their tax dollars are being spent on their development each year (CSKR, 2019). France, Germany, and others have advocated use of the Convention on Certain Weapons (CCW) process to develop ‘Possible Guiding Principles’ as a code of conduct to encourage AWS development to stay in accordance with existing international law (Convention on Certain Weapons, 2018). Beyond that, 28 states have called for a ban on killer robots, and further the Non‐aligned Movement and a group of African states desire to negotiate a new international treaty to set limits on robotic killing. Previous weapons bans, from chemical and biological weapons to landmines and cluster munitions, have been effective policy tools which significantly curtailed the use of these problematic weapons. While the United States is not currently in a position to lead with its ill‐fated ‘America First’ policy, the EU and other forward‐thinking countries should attempt to set solid global norms and push for a ban on the use of AWS now. China announced last year that it wishes to ban the battlefield use of AWS, but not their development and production. This could serve as a basis for coalition negotiations with the rest of the world and would represent a key step forward in preventative security governance (Garcia, 2018).

**A Treaty mandating Human control is necessary for safe AI because AI lacks a conscience**

**Miller, 2021 - Flight Chief, US Air Force** [Amanda, Dec 14 Air Force Magazine “UN Addresses Lethal Autonomous Weapons—aka ‘Killer Robots’—Amid Calls for a Treaty” https://www.airforcemag.com/un-addresses-lethal-autonomous-weapons-aka-killer-robots-amid-calls-for-a-treaty/ Acc. 4/5/22 TA]

Van Weel represented a minority on the panel. His counterparts—an Oxford scholar and a tech attorney—supported a treaty to “de-weaponize” AI. The University of Oxford’s Xiaolan Fu, professor of technology and international development, thought that even to start a dialog would amount to progress. Considering AI to have “the risk to be as toxic as a nuclear weapon, if not more,” Tech Group co-head Jonathan Kewley of the firm Clifford Chance said AI-enabled weapons need people in the loop the same way nuclear weapons do. AI “doesn’t have a conscience. It doesn’t have a moral fiber unless it’s programmed in,” Kewley said. “AI has the risk to be as toxic as a nuclear weapon, if not more, and if we don’t have the equivalent of that moral compass, the finger on the button designed in through a treaty—because we’re not going to design the technology to prevent this unless there is a treaty involving China, the U.S., and others—we’re going to have a similar issue to nuclear risk.”

**Regulating LAWs does not protect dignity – only a ban solves. Regulation maintains robot decision making over human life – it just tries to make those decisions better. But Dignity requires that they not make those decisions at all.**

**Docherty, 2018 - senior researcher in the Arms Division of Human Rights Watch** [Bonnie August 21, “Heed the Call A Moral and Legal Imperative to Ban Killer Robots” [https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots#](https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots) Acc 12/27/20 TA]

There is no way to regulate fully autonomous weapons short of a ban that would ensure compliance with the principles of humanity. Fully autonomous weapons would lack the compassion and legal and ethical judgment that facilitate humane treatment of humans. They would face significant challenges in respecting human life. Even if they could comply with legal rules of protection, they would not have the capacity to respect human dignity. Limiting the use of fully autonomous weapons to certain locations, such as those where civilians are rare, would not sufficiently address these problems. “Harm to others,” which the principle of humane treatment seeks to avoid, encompasses harm to civilian objects, which might be present where civilians themselves are not. The requirement to respect human dignity applies to combatants as well as civilians, so the weapons should not be permitted where enemy troops are positioned. Furthermore, allowing fully autonomous weapons to be developed and to enter national arsenals would raise the possibility of their misuse. They would likely proliferate to actors with no regard for human suffering and no respect for human life or dignity. The 2017 letter from technology company CEOs warned that the weapons could be “weapons of terror, weapons that despots and terrorists use against innocent populations, and weapons hacked to behave in undesirable ways.”[178] Regulation that allowed for the existence of fully autonomous weapons would open the door to violations of the principles of humanity.

**--Extend – Ban Solves Dignity**

**Upholding the principle of dignity Demands a preemptive ban on LAWs**

**Docherty, 2014 - senior researcher in the Arms Division of Human Rights Watch** [Bonnie “Shaking the Foundations The Human Rights Implications of Killer Robots” Human Rights Watch http://www.hrw.org/sites/default/files/reports/ arms0514\_ForUpload\_0.pdf Acc 12/27/20 TA]

Fully autonomous weapons threaten to contravene foundational elements of human rights law. They could violate the right to life, a prerequisite for all other rights. Deficiencies in judgment, compassion, and capacity to identify with human beings could lead to arbitrary killing of civilians during law enforcement or armed conflict operations. Fully autonomous weapons could also cause harm for which individuals could not be held accountable, thus undermining the right to a remedy. Robots could not be punished, and superior officers, programmers, and manufacturers would all be likely to escape liability. Finally, as machines, fully autonomous weapons could not comprehend or respect the inherent dignity of human beings. The inability to uphold this underlying principle of human rights raises serious moral questions about the prospect of allowing a robot to take a human life. Proponents of fully autonomous weapons might argue that technology could eventually help address the problems identified in this report, and it is impossible to know where science will lead.85 In a 2013 public letter, however, more than 270 roboticists, artificial intelligence experts, and other scientists expressed their skepticism that adequate developments would be possible.86 Given this uncertainty, the potential of fully autonomous weapons to violate human rights law, combined with other ethical, legal, policy, and scientific concerns, demands a precautionary approach. The precautionary principle of international law states that “[w]here there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing costeffective measures.”87 When applied to fully autonomous weapons, this principle calls for preventive action to be taken now. Human Rights Watch and IHRC recommend a preemptive ban on fully autonomous weapons, which would forestall the troubling consequences described in this report and have great humanitarian benefits. It would also help prevent an arms race, block proliferation, and stop development before countries invest so heavily in this technology that they do not want to give it up.88 In determining the future of fully autonomous weapons, the international community should seriously consider their human rights implications and ensure the core components of this body of law receive protection.

**Only a ban solves – Regulating AI would fail because it cannot meet the moral demand for dignity.**

**Docherty, 2018 - senior researcher in the Arms Division of Human Rights Watch** [Bonnie August 21, “Heed the Call A Moral and Legal Imperative to Ban Killer Robots” [https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots#](https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots) Acc 12/27/20 TA]

A ban is also necessary to promote compliance with the dictates of public conscience. An overview of public opinion shows that ordinary people and experts alike have objected to the prospect of fully autonomous weapons on moral grounds. Public opinion surveys have illuminated significant opposition to these weapons based on the problems of delegating life-and-death decisions to machines. Experts have continually called for a preemptive ban on fully autonomous weapons, citing moral along with legal and security concerns. Regulation that allows for the existence of fully autonomous weapons, even if they could only be used in limited circumstances, would be inconsistent with the widespread public belief that fully autonomous weapons are morally wrong.

**--Extend - - Bans Solves Instability**

**Regulations fail to solve accountability or technology concerns.**

**Human Rights Watch, 2018** [August 21, News Release “Killer Robots Fail Key Moral, Legal Test Principles and Public Conscience Call for Preemptive Ban” https://www.hrw.org/news/2018/08/21/killer-robots-fail-key-moral-legal-test# Acc 12/27/20 TA]

The groups found that fully autonomous weapons would undermine the principles of humanity, because they would be unable to apply either compassion or nuanced legal and ethical judgment to decisions to use lethal force. Without these human qualities, the weapons would face significant obstacles in ensuring the humane treatment of others and showing respect for human life and dignity. Fully autonomous weapons would also run contrary to the dictates of public conscience. Governments, experts, and the broader public have widely condemned the loss of human control over the use of force. Partial measures, such as regulations or political declarations short of a legally binding prohibition, would fail to eliminate the many dangers posed by fully autonomous weapons. In addition to violating the Martens Clause, the weapons raise other legal, accountability, security, and technological concerns.

**--Extend – Ban solves Prolif**

**Banning LAWs is essential to prevent proliferation of weapons.**

**Human Rights Watch, 2018** [August 21, News Release “Killer Robots Fail Key Moral, Legal Test Principles and Public Conscience Call for Preemptive Ban” https://www.hrw.org/news/2018/08/21/killer-robots-fail-key-moral-legal-test# Acc 12/27/20 TA]

Basic humanity and the public conscience support a ban on fully autonomous weapons, Human Rights Watch said in a report released today. Countries participating in an upcoming international meeting on such “killer robots” should agree to negotiate a prohibition on the weapons systems’ development, production, and use. The 46-page report, Heed the Call: A Moral and Legal Imperative to Ban Killer Robots, finds that fully autonomous weapons would violate what is known as the Martens Clause. This long-standing provision of international humanitarian law requires emerging technologies to be judged by the “principles of humanity” and the “dictates of public conscience” when they are not already covered by other treaty provisions. “Permitting the development and use of killer robots would undermine established moral and legal standards,” said Bonnie Docherty, senior arms researcher at Human Rights Watch, which coordinates the Campaign to Stop Killer Robots. “Countries should work together to preemptively ban these weapons systems before they proliferate around the world.”

**Only a global treaty can prevent mass production of genocide swarms**

**Freedberg, 2019 – deputy editor for Breaking Defense** [Sydney J., March 8 “Genocide Swarms & Assassin Drones: The Case For Banning Lethal AI” https://breakingdefense.com/2019/03/genocide-swarms-assassin-drones-the-case-for-banning-lethal-ai/ Acc 5/25/22 TA]

Small Drones, Big Kills Now what happens when you scale this up? Russell and fellow activists actually produced a video, Slaughterbots, in which swarms of mini-drones attack, among other groups, every member of Congress from a particular party. But that’s still thinking small. Remember, once you’ve written the software, you can make infinite copies; lone cranks can make explosives; and mini-drones are getting cheaper by the day. Remember also that the Chinese government has personal information on some 22.1 million federal employees, contractors, and their family members from the Office of Personnel Management breach two years ago. Now imagine one out of every thousand shipping containers imported from China is actually full of mini-drones programmed to go to those addresses and explode in the face of the first person to leave the house. Imagine they do this the day before China invades Taiwan. How effectively would the US government react? A rogue state or terrorist group could go further. How about programming your mini-drones to kill everyone who looks white, or black or Asian? (One Google facial recognition algorithm classified African-Americans as “gorillas,” not humans, so racist AI is a mature technology). It would be genocide by swarm. Such a tactic might only work once, much like hijacking airliners with box cutters on 9/11. “Small drones are vulnerable to jamming, to high-powered microwaves, to other drones that might intercept them, to nets,” said Paul Scharre, an Army Ranger turned thinktank analyst. “Bullets work pretty well… I have a buddy who shot a drone out of the sky back in Iraq in 2005.” (Unfortunately, the drone was American). At least some object-recognition algorithms can be tricked by carefully applied reflective tape. “People are working on countermeasures today,” Scharre told me, “and the bigger the threat becomes, the more people have an incentive to invest in countermeasures.” But how do you stop tiny drones from becoming a big threat in the first place? While technology to build a “working prototype” already exists, Russell told me, the barrier is mass production. No national spy agency or international monitoring regime can find and stop everyone trying to make small numbers of drones. But, Russell argues fervently, a treaty banning “lethal autonomous weapons systems” would prevent countries and companies from openly producing swarms of them, and a robust inspection mechanism — perhaps modeled on the Organisation for the Prohibition of Chemical Weapons — could detect covert attempts at mass production. Without a ban, Russell said, legal mass production could make lethal swarms as easy to obtain as, say, assault rifles — except, of course, one person can’t aim and fire thousands of rifles at once. Thousands of drones? Sure. So don’t fear robots who rebel against their human masters. Fear robots in the hands of the wrong human.

**--AT UN Nations Oppose a Ban**

**A preemptive ban solves – many countries support human control.**

**Docherty, 2018 - senior researcher in the Arms Division of Human Rights Watch** [Bonnie August 21, “Heed the Call A Moral and Legal Imperative to Ban Killer Robots” [https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots#](https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots) Acc 12/27/20 TA]

The statements of governments, another element of the public conscience, illuminate that opposition to weapons that lack human control over the selection and engagement of targets extends beyond individuals to countries. More than two dozen countries have explicitly called for a preemptive ban on these weapons,[179] and consensus is emerging regarding the need for human control over the use of force. As noted above, the requirement for human control is effectively equivalent to a ban on weapons without it. Therefore, a ban would best ensure that the dictates of public conscience are met. The principles of humanity and dictates of public conscience bolster the case against fully autonomous weapons although as discussed above they are not the only matter of concern. Fully autonomous weapons are also problematic under other legal provisions and raise accountability, technological, and security risks. Collectively, these dangers to humanity more than justify the creation of new law that maintains human control over the use of force and prevents fully autonomous weapons from coming into existence.

**--AT No Enforcement**

**Enforcement problems should not prevent a Ban – empirical evidence, improved enforcement and moral stigmas will improve compliance**

**Freedberg, 2019 – Breaking Defense writer** [Sydney “ Should We Ban ‘Killer Robots’? Can We? The Pentagon insists it doesn't want them. But could a global ban really rein in Russia or China? March 11,<https://breakingdefense.com/2019/03/should-we-ban-killer-robots-can-we/> Acc 12/27/20 TA]

What about an international treaty banning lethal AI, which would have the force of law? “Such a treaty would be very difficult to monitor and enforce,” the official said. “That doesn’t mean an international treaty should be ruled out.” The Enforcement Problem “Autonomous weapons have all of the features that make arms control hard,” said Paul Scharre, a former Army Ranger, now at CNAS, who worked on the current Pentagon policy. International inspectors can’t tell by looking at an unmanned tank, plane, or warship whether it’s programmed to ask a human for permission before opening fire. Even if they get to see the actual code — a security breach few countries would allow — “there’s nothing to stop you from upgrading the software as soon as the inspectors leave,” he told me. “Having said that,” Scharre continued, “I think that the kind of arms control that Stuart Russell is advocating for is actually more feasible.” If someone’s building vast swarms of lethal mini-drones, you don’t have to see the code to know they have to be fully autonomous: There’s no practical way, Scharre told me, for humans to review and approve “a million targets.” Conversely, such mini-drones are only truly threatening in vast numbers. “A country or an individual… might be able to build a few hundred of these,” Scharre said, “but if you’re going to build millions of them, there’s no way to hide that.” So how would you find them? The best model is probably the Chemical Weapons Convention, which, unlike many other treaties — the Biological Weapons Convention, the landmine ban, and so on — has a robust enforcement mechanism. The scope of the problem is similar. Lethal chemicals like chlorine and phosgene are widely used in legitimate industry, so you can’t ban them outright any more than mini-drones; they’re relatively easy to turn into weapons, again like drones; and yet only rogue states like Syria and Iraq have used them since the end of World War I. Much of the reason militaries abandoned poison gas is that a weapon that blows with the wind is hard to control — yet another similarity with AI, since even “narrow” machine-learning algorithms modify themselves in ways beyond human understanding. But there is also a robust monitoring regime, run by the Organisation to Prevent Chemical Weapons, which has about 250 inspectors who can rapidly respond to reported violations. Such “challenge inspections” are a crucial tool, said Irakli Beridze, a Georgian-born veteran of both OPCW and the UNICRI chem, bio, radiological, & nuclear program — with service in Afghanistan, Iraq, Libya, and Syria — who now runs the Centre for AI & Robotics at UNICRI, the United Nations Interregional Crime and Justice Research Institute. (Beridze emphasized he was only expressing his personal opinion as an expert, not as a UN official). Mini-drone production would be easier to hide than chemical plants — for one thing, it doesn’t stink like a lot of toxic chemicals — but investigative techniques have advanced since the CWC entered into force in 1997. It might even be possible, Beridze said, to set an AI to catch an AI: use artificial intelligence to crunch big data — social media or parts orders, for example — and correlate subtle clues no human inspector could catch. Robust inspections, however, are only one part of the solution, he told me. Countries need not only to sign the treaty but use their own intelligence agencies and domestic law enforcement to watch for violations. And, after initial reluctance in the private sector, “buy-in and participation of the chemical industry… was absolutely essential,” he said. “Otherwise this treaty would not work.” Once compliance became a norm in the chemical industry, in large part because of the moral stigma that attached to chemical weapons, it became much harder to produce poison gas in militarily significant amounts. Given widespread anxiety in the tech community about lethal AI, it should be possible to reach a similar consensus among drone manufacturers — eventually. Getting private industry, law enforcement, and national governments on board, even simply making them aware of the problem, would take years.

**1NC - EU Counterplan**

**CP Text – The United States should increase is security cooperation with the European Union to adopt ethical principles ensuring human control in military artificial intelligence systems.**

**US/EU collaboration is the best solution to ethical AI – visits and dialogues prove that information sharing and joint R&D are effective.**

**Lawrence and Cordey, 2020 – researchers for The Cyber Project at the Belfer Center for Science and International Affairs** [Christie and Sean, August, The Cyber Project Paper “The Case for Increased Transatlantic Cooperation on Artificial Intelligence Edited by Lauren Zabierek and Julia Voo https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf Acc. 4/21/22 TA]

National Interests & Common Priorities These challenges are many but are not insurmountable. We recommend the following 16 actions to facilitate the full realization of US-EU AI collaboration. The complete rationale, recommendation, sub-recommendations, and additional considerations are found in the Challenges to Collaboration & Recommendations section. Summary of Recommendations A1 Shift the Narrative from Adversarial to Collaborative: The US should recognize the EU has its own, sometimes competing, interests that will not change through antagonistic demands alone. The EU should soften its stance on certain issues, recognizing both that adversarial rhetoric against the US may threaten collaboration and total technological sovereignty is unlikely. A2 Increase High-level Engagements: High-level visits highlight the importance placed on US-EU collaboration, enhancing understanding and providing opportunities for greater alignment. Engagements should restart across the full interagency at the highest levels (e.g. Director, Secretary, and Commissioner level) once travel reopens or virtual substitutes are established. A3 Foster a Like-Minded Coalition: Work together to build a larger coalition of nations that share their AI vision. Combined efforts will act as a force multiplier in strengthening alliances that serve as a counterweight to China and authoritarian regimes’ efforts on the global stage. B1 Establish US-EU Dialogues: Establish a Track 1 dialogue, potentially modelled after the Canada-EU Digital Dialogues, to strengthen relations, communicate points of agreement and disagreement, share best practices, and identify collaboration across the entire AI ecosystem. Additional considerations: These dialogues should be inclusive, with not only government officials but also representatives from academia, business, and civil society present, and could be incorporated into existing Track 1 dialogues or an upcoming US-EU summit. Track 1.5 and 2 should supplement this formalized engagement. Related recommendations: Dialogue can enable and strengthen the execution of all other recommendations in this paper. B2 Increase and Formalize AI-Related Joint R&D: Increase joint R&D through various avenues (joint ventures, greater US involvement in Horizon 2020, formal R&D agreement, coordinating international private partnerships). Pool resources for greater impact and larger scale research on topics of importance for both the US and the EU. Sub-recommendation: Research partnerships should span across the entire AI ecosystem, but we believe the healthcare, defense, and environmental sciences sectors should be prioritized, as well as joint efforts to operationalize principles, verification, and standards. Related recommendations: C1, D3 B3 Share Best Practices: Facilitate coordination on priorities and findings, increase capacity building through information sharing and best practices. This can occur between the US and EU’s various networks of Centers of Excellence46, establishing a shared platform (like BILAT 4.0), or dialogues and networking events. Sub-recommendation: To guide decisions and ensure AI R&D and use respects shared values, a focus on applied AI ethics and operationalizing principles should be at the table.

**The counterplan captures all of their “NATO Key” warrants – like-mindedness and shared values**

**Lawrence and Cordey, 2020 – researchers for The Cyber Project at the Belfer Center for Science and International Affairs** [Christie and Sean, August, The Cyber Project Paper “The Case for Increased Transatlantic Cooperation on Artificial Intelligence Edited by Lauren Zabierek and Julia Voo https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf Acc. 4/21/22 TA]

There are three key reasons the United States and the European Union must increase collaboration across the entire AI ecosystem. 4. 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. 5. 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. 6. 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.

**--Extend – EU Solvency**

**The US and EU can shift the debate from defining LAWs to addressing AI more broadly.**

**Lawrence and Cordey, 2020 – researchers for The Cyber Project at the Belfer Center for Science and International Affairs** [Christie and Sean, August, The Cyber Project Paper “The Case for Increased Transatlantic Cooperation on Artificial Intelligence Edited by Lauren Zabierek and Julia Voo https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf Acc. 4/21/22 TA]

Defense H1 Shift the Narrative Away from Lethal Autonomous Weapons (LAWS): The development of lethal autonomous weapons is causing tension that may prohibit substantive discussion around new areas for collaboration. The US and the EU should shift the conversation away from potential disagreement around LAWS and towards shared defense priorities such as ensuring military interoperability separate from autonomous weapons development. Related Recommendation: A2 H2 Relax Restrictions on Third-Country Funding, IP Rights: The EU should consider reviewing and changing its EDF and PESCO regulations, allowing non-EU companies to receive funds and maintain IP rights in certain collaborative research projects. The EU and member state governments should consider not replicating these restrictions in other defense-related R&D mechanisms and collaborative efforts with the US. H3 The US and the EU should Strengthen their Defense-Related AI Talent: The US and the EU should work together to pool their defense AI talent to address workforce gaps. This could include defense-related talent exchanges, talent exchanges/secondments into industry to strengthen AI literacy and skills, coordination on AI training and educational programs, and sharing of associated best practices.

**--Extend – Global Modelling**

**US / EU collaboration on AI can establish norms for autonomous weapons.**

**Lawrence and Cordey, 2020 – researchers for The Cyber Project at the Belfer Center for Science and International Affairs** [Christie and Sean, August, The Cyber Project Paper “The Case for Increased Transatlantic Cooperation on Artificial Intelligence Edited by Lauren Zabierek and Julia Voo https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf Acc. 4/21/22 TA]

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 legislation 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.

**--AT EU and US cannot Cooperate**

**The US and the EU can overcome differences – we have more shared commonalities than difference.**

**Lawrence and Cordey, 2020 – researchers for The Cyber Project at the Belfer Center for Science and International Affairs** [Christie and Sean, August, The Cyber Project Paper “The Case for Increased Transatlantic Cooperation on Artificial Intelligence Edited by Lauren Zabierek and Julia Voo https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf Acc. 4/21/22 TA]

Challenges to Collaboration & Recommendations This paper argues that the US and the EU should increase their AI collaboration and partnerships to advance a world where AI is used to better peoples’ lives, grow national economies, safeguard liberal values and civil liberties, increase global security and safety, and promote peace. However, it would be naïve to assume such collaboration would be without difficulties. This section provides an overview of the obstacles—real and perceived—that experts and government officials cite as potential impediments to transatlantic cooperation. We broadly consider the challenges to full collaboration as falling into five buckets that, although distinct, interconnect with each other (see Figure 23 below). Although the list of challenges is extensive, we believe the US and the EU share more commonalities than differences. In this section, we therefore 1) provide an overview of the obstacles and explain why they are not insurmountable and 2) recommend actions that both narrow divergences and build on areas of agreement. Ultimately, the US and the EU can undertake deliberative, strategic steps towards the full realization of AI collaboration that benefits their citizens, societies, and economies.

**Cybernetics Links**

**The Affirmative plan and discourse rely on humanist assumptions. The focus on human control reinforces the human/machine binary, which justifies human and team violence by condemning violence by AI. The focus on human dignity centers Value on human life, which Devalues and Marginalizes machine or cyborg life as “artificial.”**

**Jones, 2018 - Lecturer in Law at the University of Essex** [Emily “A Posthuman-Xenofeminist Analysis of the Discourse on Autonomous Weapons Systems and Other Killing Machines” Australian Feminist Law Journal 44(1) August 1 https://doi.org/10.1080/13200968.2018.1465333 Acc 2/2/21 TA]

4.1 Challenging the Humanist Discourse around Autonomous Weapons: A Posthuman Analysis Despite the challenges posed, calls for a ban remain strong. However, there are very large differences between the people who call for a ban. NGOs, for example, tend to take a humanitarian stance, noting the need to promote a humanist ethics and uphold the rules of IHL. Alternatively, however, there are those in this group who do not fundamentally come from a humanist background but come from the perspective of futurism.113 Whilst the position of NGOs comes from the humanist discourse of IHL and the need to protect human life over all others, aligning more with the human dignity standpoint of religious leaders, some tech experts like Elon Musk fully embrace the posthuman future while working to ensure that this future remains ethical, albeit working within the confines of capitalism.114 The will to construct the future from the now can be seen through the project OpenAI, which Musk co-founded.115 OpenAI is a project which seeks to disrupt the current corporate trend in AI research, where most of the research into AI is being done by large companies such as Google or in research centres such as MIT, with many of the findings of this research kept private in the hope of using them for profit. OpenAI is a non-profit organisation which seeks to disrupt corporate monopolies on AI research by committing to make all of its research and patents public, as well as through offering to work freely with any group or organisation.116 Noting the threat AI could pose to humanity, OpenAI aims to create a friendly General Artificial Intelligence (GAI) - a system which can do more than just one thing such as speak or play chess; one which has ‘human’ characteristics.117 OpenAI thus represents a clear, strategic effort to disrupt current trends in technology and AI development, including the will to make profit, aiming to bring a different ethical standpoint to the realm of AI research working, hopefully, to create a better future.118 All the groups who call for a preventative ban fundamentally agree that machines should not make life/death decisions. However, while NGOs seek to protect humans now within the confines of the present, with the risk of becoming out of date, futurist tech experts fundamentally believe that ‘the best way to predict the future is to invent it’.119 OpenAI represents a move towards shaping technological advancement now to prevent the existence of killer machines. Such aims are very similar to xenofeminist aims: the wish to appropriate technology for feminist aims. Whilst xenofeminism does not explicitly address the threat to life technology could pose, I argue that the wish to define and use technology for feminist aims inherently includes the wish to ensure that technology remains ‘friendly’.120 While OpenAI wishes to create a friendly AI, however, they do not explicitly define what ‘friendly’ means. Xenofeminism, on the other hand, is explicitly informed by a feminist ethos which seeks to ensure that ‘friendly’ means non-killer as a minimum. There is a need, as I will suggest, to bring these two bodies of thought together. Gender theory is required in this area due to its long history of theorising and applying a set of complex and nuanced tools which seek to promote equality and justice, these ethics forming what I argue should constitute ‘friendly’ technology. While there is a need to ensure that IHL is upheld and that robots do not kill, it is also clear that this ethical dilemma does not just apply to autonomous weapons. While the organisations mentioned above clearly have at least some form anti-militarism as a core aim,121 the temporal horizon of such NGOs remains limited. NGOs largely maintain a strict humanist stance, focusing on the realm of international law and the need to promote and protect existing legal frameworks such as IHL which situate the human at the centre of the paradigm. Whilst this has historically produced many great achievements, such a humanist stance cannot be applied given the rapid pace at which technology is now developing. AI may not only pose a threat to the lives of humans where designed, purposefully, to kill, but may also pose a threat to life in and of itself, as it exists. There is a need for all groups who are working to promote ethical technologies to consider not only what may seem attainable now, but what is feasibly attainable in the future, noting the ways in which the now can be used to construct the future. NGOs continue to situate the human as the centre of their paradigm, seeing the machine as the ‘other’ to the human. This can be seen in the way in which autonomy is discussed in relation to the human who is imagined as either in/on/out of the loop, which does not account for the ways in which humans and machines work in connection.122 Posthumanism, on the other hand, challenges the centrality of the human within Western thinking, working to re- think the human/machine binary. Feminist posthumanism notes that something else is needed; a new way of defining subjectivity which sees the complexities and interconnections between humans and others: nature, technology, animals, etc., rejecting the human as the central paradigm and noting how the human is located instead ‘in the flow of relations with multiple others’.123 The humanist discourse around autonomous weapons ignores the posthuman reality that humans and machines are already working in connection with one another. Life/death decisions are already being made by human-machine combinations, as the next section illustrates. Banning autonomous weapons is not enough: there is a need to consider the ways in which machines are already making these decisions and to create ethical frameworks for these and future technologies, rebutting the false exceptionalisation which surrounds the current discourse on autonomous weapons. 4.2 Machine-Human Life/Death Decision Making As Jasanoff notes, technology is based around a set of decisions.124 Jasanoff observes that we often do not question these decisions until there is an accident – at which point we find who made the mistake.125 However, she argues that people ‘have spent a great deal more energy thinking about how to make good laws than about how to design good technological objects’.126 Yet, she continues, ‘in democratic societies, uncontrolled delegation of power is seen as a basic threat to freedom’.127 We must ‘understand how power is delegated to technological systems’.128 The need to understand how power and decision-making are delegated to technology is ever more urgent in the realm of life/death decision-making. However, as noted, the humanist discourse on autonomous weapons fails to account for the ways in which humans and machines are already working together to make life/death decisions. The most obvious example is the use of programming and algorithms in drone warfare. While many drone strikes are conducted as ‘personality strikes’ – i.e. strikes on a particular, key, well-known person – these occur only a few times a year, with ‘signature strikes’ happening a few times a week.129 These attacks are conducted on the basis of a ‘pattern of life’ analysis. ‘Pattern of life’ analysis develops a profile of an individual or a network of individuals by drawing on all the intelligence available, which includes things like drone and other aerial surveillance intelligence, communications interceptions, as well as phone tapping information and GPS tracking information.130 What becomes clear in ‘drone warfare’, therefore, is that the drone itself is only one part of a broader system which includes big data, algorithms, intelligence collection, chains of command, and bureaucratic formations, among other technologies and practices.131 This data is then often combined with individual tracking through the use of mobile phone and GPS tracking systems in order to both watch movements as well as to target individuals.132 The gathering of this information builds up to create a file of information collected by machines which, as Chamayou has noted ‘once it becomes thick enough, will constitute a death warrant’.133 This is an example of part-machine life/death decision-making. Part of the decision-making process here is already done by machines which gather this data and predict the likelihood of an individual’s involvement with terrorist organisations. While the human is clearly involved, in that they then must note the results of the data collected, deem it enough to act upon and then operate the drone to kill the subject in question, the machine and the human are making life/death decisions together. It is also worth nothing, as Wilcox has shown, the ways in which this data is often interpreted in racialised and gendered ways.134 Such processes of human-machine life/death decision-making would not be covered under a ban of autonomous weapons. It thus seems that part of the problem with the debate around autonomous weapons is the debate around autonomy itself. By trying to define autonomy instead of working to understand automation and autonomy as in continuum, international debates on autonomous weapons other the machine from the human, creating a false paradigm. Such a limited account of autonomy works to set the standard so high for machine decision-making that, in the end, almost nothing may be covered under a ban. In the meantime, machines are already making of life/death decisions alongside humans. Machine involvement in such decision-making processes is only set to increase, as the next section will illustrate.

**Military Doctrine determines the Status and Value of artificial intelligence – it can define AI as a tool, or as an autonomous agent.**

**Vestner, 2021 - Head of Security and Law Programme at Geneva Centre for Security Policy** [Tobias, July 8 “Warfare and Artificial Intelligence” in Robin Geiß and Henning Lahmann (eds), Research Handbook on Warfare and Artificial Intelligence -forthcoming https://www.gcsp.ch/publications/military-operations-and-artificial-intelligenceGCSP Acc 5/27/22 TA]

In response to AI’s particular characteristics, military doctrine is the appropriate means to define how armed forces perceive, understand, and value AI. Due to AI’s high levels of autonomy, armed forces may need to specify whether AI is considered as a technical tool or rather as an agent. In this sense, doctrine can define if the armed forces perceive AI as simply a mathematical, technical system, or rather a tool with cognitive abilities which can act as an autonomous influencer.51 As a corollary and based on doctrine’s function to shape armed forces’ culture, principles, and identity, doctrine can define the value, place, and role of humans in the organization and its processes. Since military operations and warfare remain endeavours for human purposes in a human world, doctrine can specify what this means. In this context, doctrines can also define values and principles on human interaction with AI systems, including that AI needs to serve humans and not the opposite.

**Security K Links**

**State discourse on AI shapes the norms for conflict – the Aff portrays AI technology as “inevitable” and a “competition.” This shapes our perceptions of other states.**

**Bode, 2021 - Professor of International Relations at the University of Southern Denmark** [Ingvild June 25, AutoNorms “Reflecting on the Future Norms of Warfare” https://www.autonorms.eu/reflecting-on-the-future-norms-of-warfare-2/ Acc. 5/27/22 TA]

Further, in terms of other factors that may continue to shape/disrupt current norms of conflict and warfare, we should also consider the arguments that states offer. State discourse often points to the inevitability of integrating more and more AI into weapon systems. The reason for this is often two-fold: first, states map out weaponised AI as part of a steady, irresistible process that they cannot resist. Second, we have also seen an emphasis on great power competition resurfacing. From a US (and a UK) perspective, it is necessary to include ever more AI into weapon systems because China (or to a lesser extent Russia) are doing it. China and Russia, in turn, speak of the same necessity as a reaction to US (and allied states) moves. What gets lost in these dynamics is that both options represent particular, not exclusive courses of action that policymakers can or cannot engage in. In sum, tracking how norms of conflict and warfare change, especially considering emerging technologies, requires going beyond a narrow and toward a critical understanding of international law. I argue that we can expect to see norms, when defined broadly as understandings of appropriateness, emerging in practices of designing, training for, and operating (novel) weapon systems. How these norms relate to standards enshrined in international law is an active research question.

**“Inevitability” arguments are deterministic – they rely on the assumption that technology shapes society.**

**Trabucco and Stanley-Lockman, 2022 – prof of Political Science, University of Copenhagen and prof of Defense and Strategic Studies, Nanyang Technological University** [Lena and Zoe, The Oxford Handbook of AI Governance, March, “NATO’s Role in Responsible AI Governance in Military Affairs” https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780197579329.001.0001/oxfordhb-9780197579329-e-69 Acc 4/16/22 TA]

However, this is complicated by the reality that military organizations that see technological superiority as a core element of deterrence and defense, including NATO, engage in forms of technological determinism that STS scholars squarely reject. Respective views on technological determinism—which considers that technology shapes society as a largely autonomous process with limited human agency—thus creates a tension for governance prospects.15 To spotlight the aspects of military innovation related to governance, this section briefly expands on the overlaps and tensions between STS and military innovation literature.

**Our rhetoric of an “Arms Race” is threat construction – current AI development is not a race.**

**Scharre, 2021 - Director of Studies at Center for New American Security** [Paul, Texas National Security Review Vol 4, Iss 3 Summer “Debunking the AI Arms Race Theory” https://tnsr.org/2021/06/debunking-the-ai-arms-race-theory/Artificial Intelligence Acc 5/27/22 TA]

Current Military AI Competition Is Not an “Arms Race” As Heather Roff has written, the arms race framing “misrepresents the competition going on among countries.”5 To begin with, AI is not a weapon. AI is a general-purpose enabling technology with myriad applications. It is not like a missile or a tank. It is more like electricity, the internal combustion engine, or computer networks.6 General-purpose technologies like AI have applications across a range of industries. Wired magazine co-founder Kevin Kelly has argued that it “will enliven inert objects, much as electricity did more than a century ago. Everything that we formerly electrified we will now cognitize.”7 Nations may very well be in a technology race to adopt AI across a range of industries. AI will help to improve economic productivity and, by extension, economic and military power. During the industrial revolution, early adopters of industrial technology significantly increased their national power. From 1830 to 1890, Britain and Germany, which were both early industrializers, more than doubled their per capita gross national product while Russia, which lagged in industrialization, increased its per capita gross national product by a mere 7 percent over that 60-year period.8 These technological advantages led to increased economic and military power, most notably for Europe relative to the rest of the world. In 1790, Europe (collectively), China, and India (including what is now Pakistan and Bangladesh) held roughly the same shares of global manufacturing output, with Europe and India each holding about one-quarter of global manufacturing output and China holding roughly one-third. They all had approximately equivalent levels of per capita industrialization at that time. But the industrial revolution skyrocketed European economic productivity. By 1900, Europe collectively controlled 62 percent of global manufacturing output, while China held only six percent and India less than two percent. These economic advantages translated into military power. By 1914, Europeans occupied or controlled over 80 percent of the world’s land surface.9 Being ahead of the curve in adopting AI is likely to lead to significant national advantages. Although AI can increase military capabilities, the more consequential advantages over the long term may come from non-military AI applications across society. Long-term benefits from AI could include increased productivity, improved healthcare outcomes, economic growth, and other indicators of national well-being. Increasing productivity is especially significant because it has a compounding effect on economic growth. Over the long term, technological progress is the main driver of economic growth.10 The scale of military AI spending, at least at present, is nowhere near large enough to warrant the title of “arms race.” Of course, AI can also be used for weapons. Militaries around the world are actively working to adopt AI to improve their military capabilities. Yet the militarization of AI does not, at present, meet the traditional definition of an arms race, despite the rhetorical urgency of many national leaders. Michael D. Wallace, in his 1979 article “Arms Races and Escalation,” defined an arms race as “involving simultaneous abnormal rates of growth in the military outlays of two or more nations” resulting from “the competitive pressure of the military itself, and not from domestic forces exogenous to this rivalry.” Wallace further stated that the concept of an arms race only applied “between nations whose foreign and defense policies are heavily interdependent” and who have “roughly comparable” capabilities.11 AI is being adopted by many countries around the globe.12

**Threat Construction creates a security dilemma – if we believe we are insecure because we are losing “the arms race” we will create a self-fulfilling prophecy where we race to catch up.**

**Horowitz and Scharre, 2021 - Senior Fellows at the Technology and National Security Program at the Center for a New American Security** [Michael and Paul, Jan 12, “AI and International Stability: Risks and Confidence-Building Measures” [https://www.cnas.org/publications/reports/ai-and-international-stability-risks-and-confidence-building-measures Acc 6/6/22](https://www.cnas.org/publications/reports/ai-and-international-stability-risks-and-confidence-building-measures%20Acc%206/6/22) TA]

An additional challenge stems from security dilemma dynamics. Competitive pressures could lead nations to shortcut test and evaluation (T&E) in a desire to field new AI capabilities ahead of adversaries. Similar competitive pressures to beat others to market appear to have played an exacerbating role in accident risk relating to AI systems in self-driving cars and commercial airplane autopilots.23 Militaries evaluating an AI system of uncertain reliability could, not unjustifiably, feel pressure to hasten deployment if they believe others are taking similar measures. Historically, these pressures are highest immediately before and during wars, where the risk/reward equation surrounding new technologies can shift due to the very real lives on the line. For example, competitive pressures may have spurred the faster introduction of poison gas in World War I.24 Similarly, in World War II, Germany diverted funds from proven technologies into jet engines, ballistic missiles, and helicopters, even though none of the technologies proved mature until after the war.25 This dynamic risk might spark a self-fulfilling prophecy in which countries accelerate deployment of insufficiently tested AI systems out of the fear that others will deploy first.26 The net effect is not an arms race but a “race to the bottom” on safety, leading to the deployment of unsafe AI systems and heightening the risk of accidents and instability.

**“Arms Race” rhetoric increases the risk of international instability because it pressures states to deploy untested and unsafe AI weapons systems.**

**Scharre, 2021 - Director of Studies at Center for New American Security** [Paul, Texas National Security Review Vol 4, Iss 3 Summer “Debunking the AI Arms Race Theory” https://tnsr.org/2021/06/debunking-the-ai-arms-race-theory/Artificial Intelligence Acc 5/27/22 TA]

A related risk of a “racing” dynamic among competitors could come from an acceleration, not of the pace of operations on the battlefield, but of the process of fielding new AI systems. AI systems today have a host of safety and security problems that can make them brittle, unreliable, and insecure.29 Because machine learning in particular can create new ways in which systems can fail, militaries face novel challenges in adopting AI systems.30 Militaries will have to adopt new methods to test, evaluate, verify, and validate AI systems (also known as TEVV).31 Such concerns related to autonomy are well known in the U.S. defense community,32 although at present they have not been solved to a satisfactory degree. Machine learning introduces additional challenges with regard to testing, evaluation, verification, and validation. A rush to field AI systems before they are fully tested could result in a “race to the bottom” on safety, with militaries fielding accident-prone AI systems. There are strong bureaucratic and institutional imperatives for militaries to field systems that are robust and secure. Indeed, designing systems to military specification standards often means making them more robust for a wider range of environmental conditions and shocks than comparable commercial systems, even at the expense of other aspects of performance, such as size, weight, or usability. AI presents novel challenges, however, in achieving the robustness needed for operating in the complex, hazardous, and adversarial environments that often characterize military operations. Certain AI methods today, such as deep learning, remain relatively immature with significant reliability challenges. A 2017 Department of Defense report by the JASON scientific advisory group explained that deep neural networks are immature as regards the “illities”, including reliability, maintainability, accountability, validation and verification, debug-ability, evolvability, fragility, attackability, and so forth. … Further, it is not clear that the existing AI paradigm is immediately amenable to any sort of software engineering validation and verification. This is a serious issue, and is a potential roadblock to DoD’s [Department of Defense’s] use of these modern AI systems, especially when considering the liability and accountability of using AI in lethal systems.33 The Defense Department’s 2018 AI strategy calls for building AI systems that are “resilient, robust, reliable, and secure.”34 Yet, the current state of technology makes achieving this goal particularly difficult for AI systems that incorporate deep learning, a subfield of AI that has seen significant growth and attention in recent years. While there is active research underway to improve AI safety and security, militaries will have to adapt to the technology as it currently is, at least for the time being. An ideal process would be for militaries to engage in experimentation, prototyping, and concept development, but also to subject AI systems to rigorous TEVV under realistic operational conditions before deployment. Taking shortcuts on testing and evaluation and fielding a system before it is fully tested could lead to accidents, which, in some settings, could undermine international stability.