LAWS with AI: How to aBANdon the Superiority

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ABSTRACT

Taking the relative novelty of issues relating to the military use of AI and its influence on international relations into account, the author of this paper relies on the latest reports of international research centres, organizations and national programs on the issue. The paper considers the political consequences of the military use of AI, as well as the national and international approaches to mitigate its challenges. With great attention to the AI policies of two technological leaders in the field, the author concludes that a balanced U.S. policy will determine whether China and the United States will be able to create, despite the presence of competition, common rules for legalizing the use of AI systems in the military sphere and form common standards that include a high level of security in the use of these systems, including the proliferation of such weapons. The author points out that Europe's concentration on the conflict with Russia and its exclusion from the environment created by the technical and ethical legal tools for using AI will increase unpredictability in relations. This is why it is in Europe's interests to involve Russia in the development of a common platform and standards for AI. The development and establishment of common safety standards will help avoid problems with perception and introduce an element of predictability in international relations.

KEYWORDS

AI, LAWS, responsibility, U.S., China, EU, Russia
The rapid development of dual-use technologies alongside the distinct lack of progress in the traditional arms control architecture feed uncertainty in international relations, which is more dangerous in the digital age, as our world is interconnected and more vulnerable to these global challenges. A group of researchers at the Stockholm International Peace Research Institute (SIPRI) point out that there is a rapidly expanding body of literature on the impact that the military use of AI could have on international peace and security, most of which focus on two approaches to risk assessment – humanitarian and strategic.\(^1\)

An analysis of national artificial intelligence (AI) strategies reveals that AI has become a crucial technology with military implications in terms of the possible creation of fully autonomous weapons. This, in turn, has legal and ethical ramifications for humanity. It is for this reason that the Nobel Peace Laureates and Peace Laureate Organisations in their Final Declaration of the XVII Summit of Nobel Peace Laureates in 2019 addressed seven topics affecting the peace wellbeing and sustainability of humankind, calling on states to pre-emptively ban the use of fully autonomous weapons or “Killer Robots,”\(^2\) or, to use UN terminology, lethal autonomous weapons (LAWS).

The problem of LAWS has been debated on various international platforms since the beginning of the 2000s. Some dominant approaches to the issue have appeared during this time. The most noticeable examples of international collaboration on the problem of LAWS are the efforts of the International Committee of the Red Cross (ICRC)\(^3\) and the Campaign to Stop Killer Robots,\(^4\) both of which have been involved, alongside a range of other non-governmental organizations and institutions, in UN discussions on LAWS that have raised ethical issues, including those relating to responsibility and humanitarianism, in addition to a number of legal and strategic questions.

The interaction of the two last points – legal and strategic approaches – is rooted in an understanding of what autonomy means. Autonomy is the most difficult and debatable concept within the framework of the Group of Governmental Experts on Lethal Autonomous Weapons Systems (GGE) established in 2016 by the Fifth Review Conference of the High Contracting Parties to the Convention on Certain Conventional Weapons (CCW) to specifically address this issue area of emerging technologies. Despite the annual meetings of the GGE with state officials, NGOs and invited experts, there are still many difficulties in understanding the concept, which creates a big obstacle for the international community when it comes to developing a common stance on LAWS.

This paper examines the political and psychological aspects of the influence of AI technologies on international security and peace. It summarizes the emerging

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1 Boulanin et al. 2020, 3.
3 The official position of the ICRC, which is actively involved in creating an international legal framework for new types of weapons, is not to join calls for a moratorium or ban the development, production and use of LAWS. For more information, see “Autonomous Weapon Systems – Q&A,” The International Committee of the Red Cross, November 2014, accessed February 4, 2021, https://www.icrc.org/en/document/autonomous-weapon-systems-challenge-human-control-over-use-force.
4 The Campaign to Stop Killer Robots, which calls for a ban on the development, production and use of LAWS, is a coalition of non-governmental organizations, the original coordinator of which is the Human Rights Watch (HRW). Its Steering Committee also includes Nobel laureates: The Nobel Women’s Initiative and the Pugwash Conferences on Science and World Affairs. For more information, see “Steering Committee Members as of October 2018,” “The Campaign to Stop Killer Robots,” accessed February 4, 2021, https://www.stopkillerrobots.org/wp-content/uploads/2018/10/KRC_ScMembers_Oct2018rev.pdf.
approaches in the international community to the risks posed by the military use of AI. Taking the most problematic areas for international collaboration in this field into account, the author focuses on existing efforts to avoid the worst-case scenario of an uncontrolled arms race and the polarization of the world in the face of rising distrust. The main finding is that cooperation in AI technologies in the sensitive military sector is indeed possible. Emerging international approaches open up various opportunities for such cooperation. In addition, advances in this field depend on how responsibly the leading powers tackle the issue, as well as on how willing they are to develop cooperative approaches in order to build confidence and eliminate the risks of misunderstandings taking place.

**Human–Machine Interface**

One of the key elements in understanding autonomy is the level of human involvement. Thus, in all conclusions, the GGE paid key attention to aspects of human–machine interaction. There is a common notion that maintaining human control is crucial in the context of the use of force and compliance with International Humanitarian Law (IHL). However, as pointed out in the GGE’s 2018 Report, states have different conceptual and terminological understandings of human control: “One was the importance of maintaining human control over the critical functions of autonomous weapons systems. Another was the human element in the different phases of the lifecycle of a weapons system and the level and quality of human control that can be applied at each stage.”

Human–machine interaction of highly automated systems is a long-standing, yet straightforward dilemma. It is our understanding of the concepts of autonomy and lethality that is lacking today, despite the confidence in the ability of humankind to answer these questions. Without a doubt, human control in maintaining responsibility and the ability to intervene in critical cases are important elements of the human–machine interface. However, two under-studied trends have emerged on this front, particularly since the emergence of drones (or UAVs): the routinization and gamification of warfare for operators.

In the case of routinization, humans may play just a minor part in a machine’s decisions. This concept is connected to the problem of placing a high level of trust in a machine or being indifferent to the real situation because physical distance from the events lends a sense of safety and is psychologically no different from regular training exercises. In the case of gamification, humans may glean excitement or satisfaction from violence. Both trends have a big impact on the role of humans within the human–machine decision-making process and on the humanitarian aspect of military operations in general. As K. Payne points out, “the danger in AI, whether employed for a tactical weapons system or a strategic-scenario planner, lies primarily


2 In this context, I would like to point out one of the main findings of the “Millennials on War” study commissioned by the ICRS, for which it interviewed over 16,000 millennials in 16 countries, and that was that “the experience of war makes people hate war.” “News Release: Majority of Millennials See Catastrophic War as Real Possibility, and Believe There Should Be Limits,” ICRC, January 2020, accessed February 4, 2021, https://www.icrc.org/en/document/majority-millennials-see-catastrophic-war-real-possibility.
in the gap between how the AI solves a problem framed by humans, and how those humans would solve it if they possessed the AI's speed, precision and brainpower."

The strong interconnection between the approaches to training and selecting individuals for the human–machine interface has a direct influence on the use and termination of highly automated intelligent military systems. Despite the limitations of international regulation in this area, focusing on training standards is crucial to maintaining high-quality human control in the area of lethal autonomous weapons systems and formulating an agenda for a human-centric approach among states.

An (Un)controlled World

Experts at the World Economic Forum see the ambiguous role of AI technologies and advances in autonomy as a potential future shock that could fundamentally destabilize the world by creating new forms of strong social control that may verge upon a new type of authoritarianism. It is not difficult to extend this argument further and within a context where the creation of LAWS with AI may become a monopolized global process. Experts at the Institute of World Economy and International Relations of the Russian Academy of Sciences (IMEMO) have pointed out that the process of transferring decision-making from man to autonomous systems in the military sphere will not be launched within the next five years, although technological arms control is moving in this direction, and the potential of transparency without traditional inspections is growing too.

The technological dynamics of nuclear arms control is one of the main issues facing international decision-makers today. The most important factor here is how nuclear-armed states will implement such technologies for military purposes and how this will affect strategic stability. The SIPRI project, which aims to present regional perspectives on how AI technologies impact nuclear weapons, has worked hard to try to understand the interconnection between autonomy, AI advances and nuclear risks.

It is interesting that some SIPRI researchers also note positive technological trends, especially in the implementation of machine learning, that will give human military command better situational awareness, allowing more time to make decisions. But there is still a great deal of concern about the implementation of AI technologies in conventional warfare. Strengthening the role of nuclear arms, alongside measures to lower confidence among nuclear states, provoking fear, misperceptions and accidents, will carry far-reaching consequences.

The GGE's 2019 review of potential military applications and related technologies highlights the following existing weapons: air defence weapon systems with autonomous modes or functions; missiles with autonomous modes or functions; active protection weapon systems with autonomous modes or functions; loitering

1 Payne 2018.
3 Dynkin et al. 2019, 19.
5 Boulanin 2019, 54.
weapons with autonomous modes or functions; naval or land mines with autonomous modes or functions; and “sentry” weapons with autonomous modes or functions. Further research and discussion regarding these weapons systems will be valuable in understanding and possibly developing a moratorium within the framework of the CCW on technological implementation to reduce the command time in the context of nuclear strike decision-making. This is the key sphere where a race for technological superiority may have catastrophic consequences for everyone involved. Moreover, such consequences for humanity are not justified by national security interests.

Back to the Future

M.C. Horowitz, P. Scharre, A. Velez-Green have studied the influence of autonomous systems and artificial intelligence on nuclear stability in great depth, concluding that psychology plays a key role in autonomous systems and nuclear security.¹ The unwillingness to comply with old agreements, tabling of new ones, and emphasis on military superiority that could return countries to an arms race has sped up warfare development and reduced the time that states have to stop and to think about whether we really need these technologies. Developing such emerging technological autonomous systems will light a ‘powder keg,’ making nuclear arms escalation inevitable and ambitions of military technological superiority more attractive. But genuine progress will first require a wide range of existing problems to be solved, including strengthening confidence-building measures and arms control transparency.

Possessing one of the deadliest weapons requires a high level of responsibility and consciousness, most notably self-restraint. If at the dawn of the nuclear age the acquisition of strategic knowledge was largely spontaneous, now, after the accumulated experience, we recognize the potential of bringing the current situation to a critical point and creating conditions for a nuclear disaster through the introduction of AI technologies and automation, which can only be mitigated through the urgent need to develop human intelligence. The wisdom of the Russell–Einstein Manifesto, which marked the beginnings of the Pugwash movement, is more relevant for contemporary issues than ever before.

The famous speech of R. McNamara in San Francisco 1967 and his thesis that real freedom is “in facing the matter rationally and realistically and discussing actions to minimize the danger” is crucial for understanding our possibilities and responsibilities in using dual technologies with revolutionary nature today.² We have made many mistakes since the dawn of the nuclear era, being unprepared to use such a breakthrough technology. About 50 years were needed to create measures to avoid the worst scenarios for humanity. Current international crises in arms control have proved that neither 50 years of effective working measures, nor restrictions and bans will help if the influential countries do not want to bear responsibility for it and if national strategic interests are the only priority in international communication.

¹ Horowitz et al. 2019, 34.
This is why a superficial ban of LAWS may not work, as the only way to bring about the desired result is if the main international players actually want it and if AI technology holders follow the restrictions. Instead, we will see the same process as with the current arms control regimes. While main international players are not ready to restrict the potential strategic superiority that military AI gives them, this does not mean that using military AI should be left unchecked. The most advanced countries in arms will develop such technologies. Moreover, existing advanced military systems use some characteristics of highly autonomous weapons, and this is why the debates in the UN on definitions seem endless.

Despite these significant obstacles, international society is nevertheless searching for responsible approaches to the use of military AI in all cycles, from research to deployment. The AI principles developed by the EU in its ‘human-centric’ approach, which run parallel with national initiatives of several member states on ethics and AI, are particularly interesting here. As pointed out in the European Union’s Guidelines on Ethics in Artificial Intelligence, “this approach will unfold in the context of the global race on AI.”\(^1\) The most ethical EU principles of AI are harmonized with the OECD Principles on AI adopted in May 2019 and based on the understanding of trustworthy AI, which includes inclusive growth, sustainable development and well-being; human-centred values and fairness; transparency and explainability; robustness, security and safety; and accountability.\(^2\)

In the SIPRI Report, the authors point out that the EU members would benefit from the responsible military use of AI, but there is a huge risk that the military policies of the United States, China and Russia could affect EU values in this field.\(^3\) Despite the fact that Russia occupies a weak position in AI R&D in the world rankings, it is thought to be a leader in terms of the military applications of AI.\(^4\) This is why there is a clear need when establishing the legal mechanisms for the responsible military use of AI to develop common understandable and shared standards. The OECD Artificial Intelligence Policy Observatory may hold potential in this respect for the European Union and Russia. Of course, transparent military cooperation between European Union and Russia is unlikely; however, launching cooperation in different public policy areas may lead to progress in the development of trustworthy AI standards between the two sides. The International Organization for Standardization (ISO) is a good example of such cooperation. The authors of the SIPRI Report note an important aspect here: the safety of AI is a key for the military use of these technologies and high technical standards could provide the legal and ethical norms for the military sector.\(^5\)

At the global level, the tension between China and the United States is more complex.\(^6\) As mentioned in the Brookings Report, the United States should be ready for a technological competition between the superpowers. However, this does not

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mean war with an enemy: “we must reject the notion that the competition with China is a ‘clash of civilizations’ and that conflict is inevitable. Our concerns are with the CCP and not the Chinese people. We can collaborate where possible but compete aggressively to protect our national interest and the international order that has kept us safe since 1945.”

As Chair of the Center for International Security and Strategy at Tsinghua University F. Ying points out, Chinese leaders are open to international cooperation in this field, especially with the United States: “The U.S. is trying to make high-tech a platform for strategic rivalry, which is not how China sees it. The reality in the field is a kind of constructive and strategic mutual dependency, although no one can deny that competition in science and industry is not abnormal.”

Obviously, the technological competition between the United States and China will always be accompanied by secrecy surrounding sensitive technologies and economic protection, but the military component plays a crucial role in exploring the limits of the struggle for superiority, as was the case during the Cold War. This experience tells us that compromise is possible, that unlimited military competition is dangerous and harmful, and that the powers involved need to start the long but inevitable process of bringing their positions closer together. This is why responsibility means the awareness of these limits and the discipline to not go beyond them.

Launching special U.S.–China working groups on LAWS may go a long way towards achieving stability and controlling the proliferation of arms, especially nuclear arms, as the United States and China are the two leading countries in AI research and development. In the context of nuclear application, this process will need to include Russia. Substantial progress in negotiations on the mutually accepted definition of LAWS and its applications in the nuclear field between the United States, China and Russia could be a good signal for the international community. This process also has to be multilateral, involving all nuclear states, in order to make progress in autonomous systems for effective monitoring and verification activities in arms control and disarmament.

Furthermore, it may be worthwhile for the United States, a country with a democratic culture of checks and balances, where civil society, including the STEM community and leading private companies in AI research and development, plays a significant role in formulating the country’s ethical standards on the military use of AI and the possible constraints of using such systems as LAWS, to support and develop the Chinese position in UN to ban LAWS because China does not have such internal restrictions. By bringing their positions closer together and preserving a degree of interdependence in spite of the national safeguards that are in place, the two countries will help maintain the order that has been “keeping us safe since 1945.”

Towards Responsible AI

The responsible military use of AI is an indicator of human progress that is marked by a decline of violence around the world, and includes the rise of rationality during

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1 Brown et al. 2020, 13.
communication and cooperation, according to Steven Pinker.¹ But now the current crises in the arms control and disarmament process demonstrate a lack of desire for active cooperation in this field. Annual meetings of the GGE on LAWS are undoubtedly important in terms of providing guiding principles for states, but they are not enough to mitigate the risks of a new arms race. That is why we see a great deal of activity among the STEM community, private AI companies and international non-governmental organizations when it comes to warning about the dangers of the uncontrolled use of autonomous technologies with AI.

The fundamental question arises: How can we, as humans, control those machines that are already outperforming us in terms of data collection and processing? Of course, it is too early to take strong AI and its challenges into account, but the Russian neuropsychologist T. Chernigovskaya suggested that we approach the issue from a different angle: Is it possible for humanity to verify the possible birth of consciousness in a machine that is capable of learning? Another ambiguous question is pertinent today: What do we teach these machines, or do they learn independently of a “human teacher”?

Trends in AI development show that this technology has a fundamental impact on human society. While the complexity of AI and the interconnection between its civil and military applications create difficulties when it comes to finding a single solution for the international community, this also opens up opportunities for a common approach. An analysis of national strategies and initiatives shows that states are aware of the risks and challenges and want to engage in dialogue in this field, but geopolitical competition and distrust impose certain restrictions on this process. The responsible use of AI involves, first of all, developing constructive collaboration to mitigate the challenges stemming from the military use of AI, which is for the most part based on strategic calculations rather than on ethical standards.

Effective cooperation on sensitive issues such as the military use of AI may become an optional platform for developing integration among like-minded states; however, there are still risks of it being politicized if all states are involved, or polarized if the decision is made to follow national standards or standards developed by a separate regional group of countries. This is why the international community needs inclusiveness and harmonization, despite the geopolitical competition and distrust.

According to a group of researchers from SIPRI and IISS, strategy and ethics may be reconciled not only by sharing best practices in safety standards, but also through track 1.5 and track 2 diplomacy in the multi-stakeholder activity.² This reflects the links between science, industry and the military sector and allows for greater flexibility and creativity even in sensitive security matters. UNESCO’s educational initiative under the “Beijing Consensus on Artificial Intelligence and Education” has the most integrative potential in this respect.³

The history of conflicts and world wars shows that technological superiority does not always help to win the battle, and this once again reminds us of how important

¹ Pinker 2012.
the problem of perception among states is. In this case, multilevel cooperation in AI field and a deliberate ban of LAWS with AI may become an indicator of the strength of powers that can take responsibility for stability and security to the international community.

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**Additional information**

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Смертоносные автономные системы с искусственным интеллектом: как избежать превосходства

АННОТАЦИЯ
Учитывая относительную новизну вопросов военного применения искусственного интеллекта (ИИ), автор изучает его влияние на международные отношения, опираясь на последние доклады международных исследовательских центров, организаций и национальные стратегии и программы. Автор в данной статье рассматривает политические последствия военного применения ИИ, национальные и международные подходы к смягчению его вызовов. Уделяя большое внимание политике двух технологических лидеров в этой области, автор приходит к выводу, что сбалансированная политика США определит, смогут ли Китай и США создать, несмотря на наличие конкуренции, единые правила легализации использования систем ИИ в военной сферы и сформировать единые стандарты, включающие высокий уровень безопасности при использовании этих систем, в том числе в вопросах нераспространения данного вида вооружения. Автор также обращает внимание, что сосредоточенность Европы на конфликте с Россией и ее исключение из среды, создаваемой техническими и этико-правовыми инструментами использования ИИ, усугубит элемент непредсказуемости в двусторонних отношениях. Именно поэтому в интересах Европы привлечь Россию к разработке общей платформы и стандартов для применения ИИ. Разработка и установление единых стандартов безопасности поможет избежать проблем с искаженным восприятием применения ИИ и привнесет элемент предсказуемости в международные отношения.

КЛЮЧЕВЫЕ СЛОВА
ИИ, смертоносные автономные системы, ответственность, США, Китай, ЕС, Россия

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Дополнительная информация

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