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An analysis of the Code War: The rise of strategic alliances in the age of autonomous weapon systems – case study of Russia-Ukraine conflict

Zamrud Ichsan Rafi, Seniwati, Nur Isdah, Agussalim Burhanuddin
Department of International Relations, Hasanuddin University, Indonesia

Abstract
The Russia-Ukraine conflict has portrayed a modern warfare with advanced technology. Autonomous Weapon Systems (AWS) were used in this war, including the AI-powered weapon drones. This situation has broken international humanitarian law (IHL) because it can violate its principles, which are distinction, proportionality, and precautions. And, the result of it makes countries collaborate with each other to improve their technology and development of AI in a military context, in other words, a new alliance or bloc to improve technology. Lastly, the use of AWS has harmed civilians and objects that contradict the principles. This status quo has defined neorealism and techno-nationalism as the theory and conceptual framework to identify the problem from the perspective of IR. The novelty of this article was to illustrate the impact of the AWS usage in the Russia-Ukraine war in the context of national strategic or strategic alliances, and how the weapons are pushing states to develop more autonomous weapons for military needs.

Keywords: Autonomous Weapon Systems, Strategic Alliances, International Humanitarian Law, Artificial Intelligence

Introduction

Nowadays, technology has improved significantly around the world. It is used in various aspects, whether for study, new weapons, or other purposes. However, the use of technology can have both negative and positive impacts, depending on its purpose. Furthermore, it can be utilized by civilians and the military, and is referred to as dual-use. The duality—civilian and military, beneficial and aggressive—of AI technologies necessitates considering that tools designed for good may also be used as weapons, highlighting the need to regulate their development from this perspective (Ágreda, 2020, p. 1) [1].

In terms of technology, it is also used in weapons that many experts and countries debate. Weapons today have been improved and referred to as Autonomous Weapon Systems (AWS), the existence of which can pose a threat to our future. The Russia-Ukraine conflict serves as the best illustration of rapid technological improvement. This conflict has reached an unprecedented level of intensity, fueled by advancements in military technology and modern warfare (Bansal, 2023) [7]. Moreover, it may bring about a new era of modern warfare that could lead to rapid disaster.

AWS was used by both countries, and the product of it caused competition in the development of weapons. Ukraine uses Bayraktar TB2 drones, which are made by Turkiye and used with laser-guided bombs, intending to carry out strikes and Intelligence, Surveillance and Reconnaissance (ISR) operations (Shahid, 2024) [28]. On the other hand, Russia was developing certain types of drones, which include Shahed-136 and Lancet.

In December 2024, Western media shared from Ukrainian military sources that Russia is equipping Shahed-136 strike drones from Iran with artificial intelligence (Bondar, 2025) [10]. Additionally, the Shahed-136 is a kamikaze drone made by Iran that Russia uses to attack Ukrainian military targets. The other drone being used is the Lancet, which is an upgraded version of the Shahed-136 made by the Russians. According to military expert Mikhail Kuzovkin on the Russian TV network REN TV, "The Lancet itself works out the program, without receiving any external target designation" (Hambling, Russia's Automated Killer Drones May Not Be Working As Planned, 2024) [16]. It stated that the Lancet itself can operate and target objects without human intervention. The Lancet-3 reportedly can attack and also identify automatically targeted objects in groups with AI processing modules planted in the drone system (Faragasso, 2023) [13].

Besides attacks on military objects, Russia has been using these AWS to target power stations, urban areas, and other civilian objects, especially to deprive Ukraine of electricity and power (Shahid, 2024, p. 61) [28]. Then on August 26, 2024, Russia launched a missile attack that was followed by waves of drone attacks in Kyiv, and at least 3 people were killed, and the attack brought damage to the energy infrastructure. Russia has employed Shahed models of drones from Iran as suicide drones in its war with Ukraine (Iran International, 2024) [19]. Moreover, a Russian Lancet drone was striking in the Kharkiv district, and a 54-year-old man was injured (UKRINFORM, 2025) [32]. These actions were a clear violation of international humanitarian law.

Even though there is still a lack of evidence on whether the weapons are fully autonomous or not, right now, Russia and other countries are trying to increase to use of AI with collaboration among them. According to the Kremlin, Vladimir Putin or the President of Russia, has ordered Sberbank to collaborate with China for developing and researching AI technology (Lee, 2025) [21]. It can be a chance for the existence of fully autonomous weapon systems or Lethal Autonomous Weapon Systems (LAWS).

The article "Artificial intelligence and arms control in modern warfare" by Goddy Uwa Osimen was focused on why arms control is crucial in the context of AI modern warfare (Osimen & Fulani, 2024) [25]. On the other hand, the thesis from Dua Shahid "Usage of Autonomous Weapon Systems (AWS) in Armed Conflict: Military Necessity and Ethical/Legal Implications", highlights the essential role of

the human factor can strengtheninging and resolving the significance of AWS in both ethical concerns and military efficacy, to serve balance between it, that humans are crucial to get in the loop (Shahid, 2024) [28]. In our research, the novelty is focused on how AWS can lead to the creation of a new bloc. For example, Russia and China's increasing cooperation in AI development caused a shift in power in global dynamics, creating a new polarization of cold war blocs but now based on code, not ideology. This paper argues that AWS contributes not only to legal and humanitarian dilemmas but also reshapes strategic alliances and accelerates a new form of global technological arms race.

Method (library research)

The method used in this article is the qualitative method approach because researchers want to describe and analyze the conditions and provide a solution to the issue. Researchers also observed the data more specifically, transparently, and in-depth. According to Denzin and Lincoln, qualitative research involves an interpretative, multimethod-in focus, and naturalistic approach to its subject matter. Additionally, researchers who used qualitative methods in their natural settings attempted to make sense of or interpret phenomena in terms of the meanings people bring to them. This type of research involves collecting a variety of empirical materials that include case studies, personal experience, life stories, introspective, observation, interviews, interactional, historical, and visual texts to illustrate problematic moments (Aspers & Corte, 2019, p. 142) [5].

Also, the library research method is used in this article. According to Walker 2005, library research is the collection of data or materials needed to complete the research, and it comes from the library, including books, encyclopedias, dictionaries, journals, documents, magazines, and so on (Mubaroq & Qamariah, 2023, p. 2) [23]. This article is a data collection method that involves studying and analyzing information from journals, theories, and documents that are relevant to the research issue. In this type of method, secondary data is gathered, which refers to the primary data collection (Vartanian, 2011) [34]

The article will further discuss how the legal vacuum in the Autonomous Weapon Systems in the case of the Russian-Ukraine war can lead to the global arms race of advanced technological weapons. Also, further discussion will be about how the conflict raises new alliances on the development of AI weapons or AWS.

Theory

This phenomenon is the best example to combine with the theory of neorealism and technonationalism as the conceptual framework. Neorealism will give an illustration of how countries behave in the existence of AWS for their national security. On the other side, technonationalism will demonstrate technology as a tool to gain national domination and diplomacy.

a. Neorealism

Neorealism rose because classic realism failed to illustrate the phenomenon of the Cold War. It was to modify the key insight of classic realism into the methods of modern social science. In Theory of International Politics (1979), Waltz stated that the majority of the crucial features of international relations, especially the great powers' actions, can be demonstrated by the anarchical structure of the international system (Bell, 2025) [8].

To simplify, because there is no authority to control states, they depend on their capabilities to play a role, which is survival, and pursue interests in the international anarchic system. The differences with classical realism, power in this theory is just a tool to achieve national interest. Furthermore, to give an understanding of the case study, offensive neorealism/offensive realism as a sub-theory of neorealism can be applied precisely to the cases.

b. Offensive Neorealism/Offensive Realism

Offensive realism is predicated on the foundation of an

The belief that the international system is marked by anarchy, which is understood as the lack of a central authority that can regulate or enforce rules between states. Furthermore, with the anarchic structure, states emerge as the paramount objective in the context of survival (Larson, 2025) [20]. Additionally, state behavior is not relevant to individual ambition, but rather because of the anarchical structure of the international stage that makes countries gain power and play a role in pursuing hegemony.

According to Mearsheimer (2001, p. 31) [22], the state can never achieve full certainty about whether another state harbors hostile intentions, which refers to the uncertainty that gives rise to a security dilemma, where one state can take measures to enhance its security that are perceived as threatening by the others, that led to the triggering an arms race or preemptive strategies (Larson, 2025) [20]. Moreover, the theory defines the uncertainty of a situation that can lead to the security dilemma, which will further cause escalation.

c. Techno-nationalism

Techno-nationalism is different and also unique in its way, it is a combination of two words, which include nationalism and technology, that shows the innovation and autonomy of a nation's technology (Gopikrishna, *et al*., 2024) [14]. It depicts that technology and innovation are the goals in the context of nationalism or goals to improve the capabilities of their states.

Techno-nationalism is a conceptual framework that defines technology as a tool for gaining power. According to David Edgerton (2007) [12], the success of a country is determined by how it controls technology and innovation (Aini & Triantama, 2021) [2]. It stated that Techno-nationalism depends on technology as a key to addressing goals and achieving power.

Discussion

1. Definition of Autonomous Weapon System

Autonomous Weapon Systems, or AWS, can be defined as any weapon system with autonomy in its critical functions, the criteria which can select such as search, detect, identify, track, or select; and attack to which uses force against, neutralize, damage, or destroy targets without any human intervention (Davidson, 2018) [11]. According to the US Department of Defence, AWS is A weapon system that, once activated, can select and engage targets without further intervention by a human operator (Taddeo & Blanchard, 2021) [29]. In addition, AWS is an autonomous weapon that can control itself when it is activated and does not need human control.

2. Definition of strategic alliances

Strategic alliances refer to any parties that strategically collaborate with others to gain something. In terms of state, states form alliances to bolster their influence globally; however, such partnerships often harbor rivalries due to conflicting national interests, varying priorities, and imbalances in power dynamics (Tahir & Afridi, 2024) [30]. In relevance with the theories, strategic alliances refer to neorealism, because there is no authority in the international arena, countries are seeking to gain hegemony, and they collaborate with each other to pursue national interest.

3. AWS legal gap

The development of AWS has raised concerns for many countries and international organizations. The International Committee of the Red Cross (ICRC) has established a legal perspective regarding how the principles of International Humanitarian Law view these weapons. Its use has to follow the principles of distinction, proportionality, and precautions as the core legal obligations. Regarding all obligations under international law, these legal commitments and accountability for them cannot be transferred to a machine, computer program, or weapon system (Davidson, 2018, p. 7) [11]. Moreover, the United Nations and ICRC urge states to implement specific prohibitions and restrictions on AWS to protect present and future generations from the consequences of their use (United Nations Secretary-General, 2023) [33]. Yet, there are still no clear regulations regarding the use of AWS, and still raised concerns, especially in today's conflicts. This situation can make countries develop their own autonomous weapons and create a modern warfare in the future.

4. The Use of Autonomous Weapons

In terms of today's conflict, the Russia-Ukraine conflict was the battlefield of robots, and the beginning of modern warfare. Following the deployment of numerous autonomous and robotic systems by Kyiv's forces over the last three years, Ukrainian officials began referring to their nation as a "war lab for the future." They emphasize to allies and partners that, given these technologies' profound influence on future warfare, the ongoing conflict in Ukraine provides an optimal setting for continuous testing, evaluation, and enhancement of such systems (Bendett & Kirichenko, 2025) [9]. This also aligns with the conflict being for "tested weapons field" for many countries and companies, especially drones. In terms of Autonomous Weapon Systems, both Russia and Ukraine have developed their weapons, like drones.

The status quo created uncertainty regarding the development of autonomous weapon systems, and now these weapons are targeted to be fully autonomous we the use of Artificial Intelligence. According to the report of the Institute for Science and International Security, Lancet-3 can select and execute targets autonomously in groups with AI as a processing module that helps to be embedded in the drone systems (Faragasso, 2023) [13]. On the other side, Ukraine has deployed many AI systems to help the drones find and hit objects without any human intervention (WION, 2024) [35]. Moreover, Ukraine purchased roughly 10,000 AI-enhanced drones in 2024 (Panella, 2025) [26]. Additionally, technological capabilities such as drones, AI target designation, and imagery intelligence, along with advanced man-portable anti-aircraft and anti-tank weapons, have enabled Ukraine to halt Russian aggression and even launch counteroffensives during the first year and a half of the conflict (Santayana, 2024, p. 3) [27]. It demonstrated that AI-powered weapons are now being used by both sides, Ukraine and Russia, and maybe they will develop more of this type of weapon and causing an arms race in advanced autonomous weapons.

The increase in autonomous weapons has also increased violations against civilians and broken the principles of international humanitarian law. As the drones were targeted not just at military objects but also at civilians. For instance, the AWS that Russia used targeted urban areas, power stations, and many civilian objects (Shahid, 2024, p. 61) [28]. This is a clear illustration of how AWS would break the international rules and harm civilians.

5. New strategic alliances: code war

a. Russia

Russia and China have collaborated on the development of AI, in 11 to 13 December 2024, Putin signed a list of orders for relevant implementation measures, which include to strengthening cooperation with China in the field of AI (Anqi & Caiyu, 2025) [4]. Bresnick mentioned that while it remains uncertain how Beijing could gain from assisting Moscow in AI development, China may seek military technologies and wartime information from Russia in exchange (Lee, 2025) [21]

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Shifting focus to Russia-Iran, Russia has considerably increased its manufacturing of Shahed-136 drones, referred to locally as geran-2, in partnership with Iran. The Russian Ministry of Defense states that there are

exciting plans are underway to incorporate AI technologies into the Iranian Shahed-136 kamikaze drones (Nikolov, 2024) [24]. It confirms that Russia also uses unmanned drones from Iran.

Finally, to counterbalance the influence of Western nations, Russia is partnering with BRICS members on AI development. President Vladimir Putin announced during Moscow's main AI event, the establishment of the AI Alliance Network, emphasizing that this initiative will link national associations and development institutions from BRICS countries, as well as nations such as Serbia and Indonesia (Hamid, 2024) [17]. Even though there are no signs regarding whether this collaboration will refer to military or not, AI development can be used in uncertain ways. Additionally, Russia collaborates with China and other countries for AI, illustrating that technonationalism plays a role in portraying technology as a tool to gain national interest.

b. Ukraine

Ukraine also collaborates with several parties, including Non-state actors, to develop AI in terms of its military. For instance, Lee Wolosky stated that Ukraine received free access to the Clearview AI search engine for faces that allows authorities to check persons of interest at checkpoints, among other uses. Also, Clearview has confirmed that they offer the use of their technology to recognize Russian troops who are involved in the invasion, fighting misinformation, and identifying victims (Intan Rakhmayanti Dewi, 2022) [18].

Furthermore, Palantir confirms that they are helping Ukraine in the war against Russia. Ukraine uses the

software of Palantir, that based on AI, to gain information from satellite and social media, then visualize the army's location or create a data file for more efficiency (Towi, 2023) [31]. Ukraine uses AI technology from US companies to improve its AI development. For other countries, Ukraine will acquire 6,000 HX-2 attack drones powered by AI from the defense technology company Helsing, based in Munich (Bandouil, 2025) [6]. This was also demonstrated by technonationalism because technology, or in terms of this case was AI, is used to gain national interest.

c. The relevance with offensive neorealism and technonationalism

Russia is seeking to gain hegemony to embrace its power in its region. By that, Russia attacks Ukraine to pursue its power and gain regional hegemony. And that is relevant to the offensive neorealism, because these actions were not delivered by individuals but national interest; furthermore, no single authority on the international stage, and Russia was pursuing regional hegemony.

Conclusion

The Russia-Ukraine conflict has demonstrated a clear picture of modern warfare, with the use of many Autonomous Weapon Systems and advanced AI-powered weapons like drones. It is clear that future wars will use AI or autonomous systems on the battlefield. Furthermore, Russia and Ukraine also expand their relations in terms of developing AI in any sectors, including the military. With Russia collaborating with China in the development of AI, Ukraine also cooperated with many non-state actors in Western countries, such as the United States and Germany, to improve its AI system for weapons. The status quo is very complex because without clear regulation related to the use of AWS or AI in weapons, it can lead a mass chaos in the future of warfare.

Neorealism and offensive neorealism have depicted that Russia and Ukraine were seeking to collaborate with another country, especially Russia, which was seeking to pursue its regional hegemony. In addition, technonationalism draws on technology as a tool to reach national interest; in this case, Russia has collaborated with China and other countries to develop AI. On the other hand, Ukraine was cooperating with non-state actors like Palantir and Clearview AI from the United States and companies from Germany to develop and improve AI technology for military contexts.

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