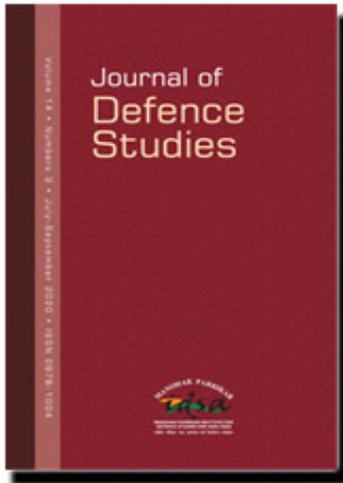


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Lethal Autonomous Weapons Systems under Existing Norms of International Humanitarian Law

*Bashir Ali Abbas**

This article explores the position of lethal autonomous weapons systems (LAWS) under the existing rules of international humanitarian law (IHL). It argues that though the existing rules of IHL are sufficient for certain weapons systems, there is a need to develop new rules for fully autonomous weapons systems. The author makes a case that the call for a blanket ban on LAWS in general is premature and the expected use of such weapons must be acknowledged before such a ban is considered. An analysis of the position of LAWS under Article 36 of Additional Protocol I is also undertaken along with an exploration of the question of attribution of responsibility for war crimes and breaches of IHL if such weapons are deployed. The incident involving Iran Air Flight 655 is used as a case study to highlight the problems of accountability.

INTRODUCTION

In recent years, the realm of international law has discovered within itself another patch of legal grey amidst the vast expanse of whitish grey that already exists. This pertains to the legal position of lethal autonomous weapons systems or LAWS as they are un-ironically referred to. Prior to any question of legality, it is the ethical issue that has come to the forefront with regard to LAWS, with innumerable non-governmental organisations (NGOs), such as the International Committee for Robots

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Armed Control, and watchdog organisations, such as Human Rights Watch, rallying for a complete ban on these weapons systems.¹ The pressure mounted by rights groups around the world has prompted even the Secretary-General of the United Nations (UN) to vociferously support the campaign against ‘killer robots’.²

It is this question of ‘banning’ these weapons systems that brings out the legal issue, which has also been the subject of several meetings of the Group of Governmental Experts (GGE) of the UN Convention on Certain Conventional Weapons. However, despite the colossal amount of ethical concerns delineated by these groups and several other influential individuals and states pertaining to the potential use of LAWS, there still remains a dearth of sufficient cause and lack of legal precedent to completely ‘ban’ a weapons system that has not even witnessed deployment in armed conflict till now. It then comes down to the following question: whether the existing norms of international humanitarian law (IHL) are enough to govern these weapons systems or if there is the need for a new body of law (*corpus juris*) to address the compliance of LAWS with IHL? This article argues for the former, but also does not disregard the potential for the latter, using several interpretations of international law in general, and international criminal law in particular, by existing and erstwhile tribunals and institutions.

THE LACK OF PROHIBITION

The first aspect to be addressed is whether LAWS are inherently violative of the existing laws of armed conflict and are ‘illegal’ per se under international law. A case that is closest to this subject in terms of the fundamental question at stake is the 1996 Advisory Opinion of the International Court of Justice (ICJ) on the *Legality of the Threat or Use of Nuclear Weapons*, where the Court, in paragraph 52, stipulated that ‘state practice shows that the illegality of the use of certain weapons as such does not result from an absence of authorization, but on the contrary is formulated in terms of prohibition’.³ In that light, it needs to be mentioned that there exists no prohibition in international law—whether in treaty law or in any other form of law referred to in Article 38(1) of the Statute of the Court—on the usage of LAWS. It is also a standing principle of international law that in the international system states are free to behave as they wish as long as they do not contravene an established norm of international law. This is something that was widely accepted and affirmed even before the UN came into existence,

by the Permanent Court of International Justice (PCIJ) in the *S.S. Lotus* case,⁴ a significant part of the judgment of which has come to be embedded in customary international law. While this has not prevented some states, such as Belgium, from deliberating on and voting for a ban on autonomous weapons systems in their domestic realm, states such as the United Kingdom (UK), the United States (US), and the Russian Federation have ardently opposed the call for a ban.⁵ This opposition has been mainly due to: (i) the potential that LAWS have to comply with IHL; and (ii) the premature nature of a ban as these systems have not been fielded yet.

It must be noted that while there has been considerable innovation and development in the field of human–machine interaction in warfare, particularly in the field of automation, there exists a limitation in the US on ‘man out of the loop systems’, or fully autonomous weapons, as per the US Department of Defense (DoD) Directive 3000.09.⁶ The UK too has stated, and reiterated, multiple times in international forums that it ‘does not envisage a scenario in which machines with higher order autonomy will exercise ethical and/or legal self-determination’,⁷ thus expressing its intentions to not develop ‘fully’ autonomous weapons systems that are beyond human control. Meanwhile, on the part of the Russian Federation, no clear stance exists with regard to existing or potential development of LAWS. So, while there does not exist any body of law particularly prohibiting autonomous weapons systems, it is evident that LAWS can be categorised as a ‘new’ weapon as per Article 36 of the 1977 Additional Protocol I (AP I) to the Geneva Conventions of 1949. Therefore, states are ‘under an obligation to determine whether its employment, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Parties’.⁸ However, there is more to Article 36 than is apparent, which will be taken up later for discussion. At this point, it is relevant to examine the technical differences within the broader term ‘autonomous weapons’ in relation to our understanding of them as ‘new weapons’.

SEMI/FULLY AUTONOMOUS SYSTEMS AND MEANINGFUL HUMAN CONTROL

LAWS do not necessarily have to be weapons systems that are fully autonomous by definition. There exist varying degrees of autonomy, with varying degrees of ‘meaningful human control’. In a working paper submitted to the GGE in 2018,⁹ for example, the UK has stressed on

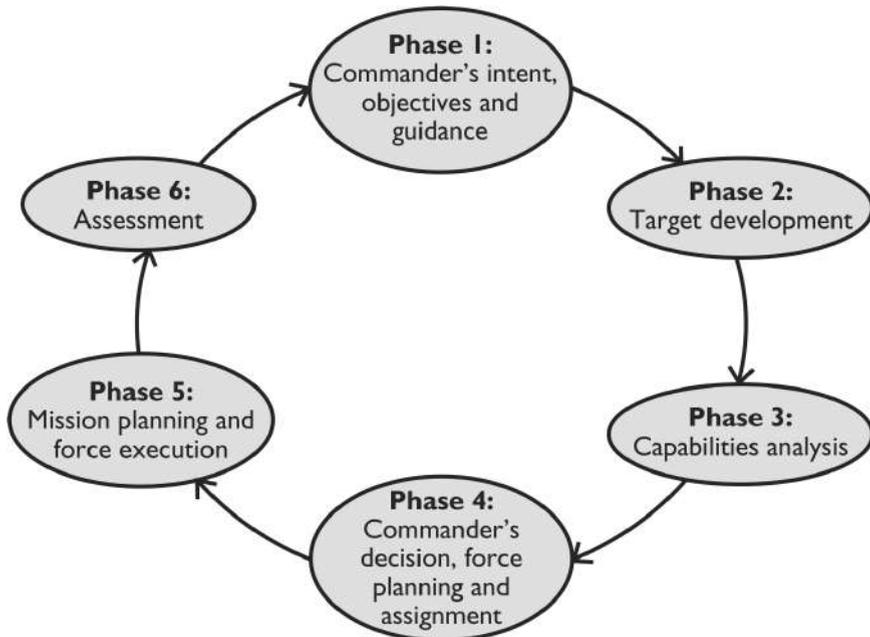


Figure 1 NATO's Joint Targeting Cycle

Source: 'Human Machine Touchpoints', n. 7, p. 3.

the nature of human control to be exercised on potential autonomous weapons. Operating procedures and processes, including command and control, are an integral part of the paper. Additionally, the joint targeting cycle of the North Atlantic Treaty Organization (NATO), which includes six phases of targeting (Figure 1), is closely related to an element propounded in Directive 3000.09 of the US. This element is one of difference between three types of weapons systems:

1. *Man in the Loop System:* A weapons system where the final decision to strike a target in the 'force execution' phase lies in the hands of the human and not the machine.
2. *Man on the Loop System:* A weapons system where the decision to strike a target is left to the machine, but the authority to override this decision lies in the hands of a human operator.
3. *Man out of the Loop System:* A weapons system where the machine exercises wide powers of discretion and is fully autonomous in the true sense of the term, without any meaningful human control beyond the 5th phase in the targeting cycle.

With regard to the above-mentioned systems, the first two can be termed to a large extent as ‘partially autonomous systems’ with some amount of human involvement, while the third one is a fully autonomous system with no meaningful human control. Current NATO systems for joint targeting do not give much discretion to the machine to decide its targets; also, the development and setting of the target is always done in the phases preceding the ‘force execution’ phase of the cycle.¹⁰ In the 2018 report published by the GGE, ‘meaningful human control’ is of the essence.¹¹ Therefore, in the force execution phase, there exists some premise for the current norms of international law to govern—defying the need for the formulation of new rules. This premise shall be explored further in the following paragraphs. Fully autonomous weapons systems, however, invite the creation of a new set of norms in IHL or a coherent restatement of existing norms with the purpose of creating some amount of *lex specialis*.¹² Essentially, the argument being made here is that for the purposes of compliance with IHL, partially autonomous weapons shall be viewed as not being fundamentally different from conventional weapons.

Article 52(2) of AP I states that a targetable military objective must offer ‘a definitive military advantage...in the circumstances *ruling at the time*’.¹³ Hence, it is clear that as long as a satisfactory amount of decision making is being exercised during the attack for which LAWS are being used, the law is being complied with in principle. It is clear that no *ex ante*¹⁴ restrictions are imposed on LAWS by existing rules of IHL, but a limit is set for the manner in which weapons are to be used, which also applies to LAWS. As long as the human operator is exercising ‘effective control’ over the weapons system, ‘meaningful human control’ exists and the onus to comply with IHL falls on the human being.

POTENTIAL COMPLIANCE WITH IHL (ARTICLE 36)

A significant aspect that is to be acknowledged is that for the most part, whenever LAWS are the subject of discussion in the international community, a considerable part of the discussion is on the potential breaches of IHL, such as war crimes or other grave breaches of the laws of armed conflict, which can be committed while deploying these systems and which would bring in their wake questions of accountability—the matter of ethics notwithstanding. It is this assumption that needs to be questioned because one of the major reasons for the potential development of LAWS is the better implementation of and compliance with IHL.

In fact, in a lot of cases, an autonomous weapons system offers those advantages which are often not available to human beings in the field—the lack of physical duress being the most prominent. This merits an analysis from the perspective of Article 36 of AP I, the foremost principle in IHL governing ‘new weapons’. A preliminary reading of the article accords the aforementioned assumption, made while discussing LAWS, some merit.

However, on interpreting the article together with its preparatory documents, a better case can be made on behalf of those opposing a prohibition on the systems. The Vienna Convention on the Law of Treaties stipulates in Article 31¹⁵ that when the interpretation of a part of a treaty is in dispute, then one must necessarily refer to the *travaux préparatoires*¹⁶ of an international agreement to better interpret the meaning of the article in question, in light of the object and purpose of the treaty. This principle of law has largely passed into the body of customary international law, as has been affirmed multiple times by the ICJ; most recently, in the *Kulbhushan Jadhav* case.¹⁷ In the case of AP I, the report of the Third Committee of the Diplomatic Conference, which can be considered as a part of the preparatory documents for AP I, states:

It should be noted that (article 36) is intended to require States to analyse whether the employment of a weapon for its normal or expected use would be prohibited under some or all circumstances. A State is not required to foresee or analyse all possible misuses of a weapon, for almost any weapon can be misused in ways that would be prohibited.¹⁸

For LAWS, their ‘expected use’, on the one hand, is not one that violates IHL and, on the other hand, is one being designed to attempt to ensure better compliance with IHL. Moreover, it is not inherent in the nature of LAWS that they shall necessarily breach the law if deployed. This is where LAWS differ from nuclear weapons. It is the very nature of strategic nuclear weapons that they shall be unable to distinguish between legitimate combatants, persons *hors de combat*¹⁹ and non-combatants under the Geneva Conventions, thus breaching one of the most fundamental pillars of IHL, namely, the principle of distinction, as is evident by the only recorded use of strategic nuclear weapons on the cities of Hiroshima and Nagasaki by the US during World War II. Lethal autonomous weapons are not strategic munitions that shall inevitably fail to discriminate between lawful and unlawful combatants. Therefore, LAWS being termed as weapons of mass destruction by few, though

certainly well-intended due to ethical concerns, is unfounded in legal reasoning. This is true for all kinds of autonomous weapons systems, both partially and fully autonomous.

LAWS AND THE CALL FOR A BAN

While the call for a ban on LAWS might resonate well among multiple international NGOs, there does not exist a decisive instrument by means of which a large number of states can express concern for the potential development of LAWS. The instrument being referred to here is a resolution of the United Nations General Assembly (UNGA), which often represents the will of the international community at large whenever there is something at stake which concerns states generally. This is reflected in the Advisory Opinion of the ICJ in the *Nuclear Weapons* case, where the Court notes that the question put to it by means of UNGA Resolution 1653 (XVI), under Article 96 of the Charter of the UN, ‘...reveals the desire of a very large section of the international community to take, by a specific and express prohibition of the use of nuclear weapons, a significant step forward along the road to complete nuclear disarmament.’²⁰ The Court also notes:

The emergence, as *lex lata*,²¹ of a customary rule specifically prohibiting the use of nuclear weapons as such is hampered by the continuing tensions between the nascent *opinio juris*²² on the one hand, and the still strong adherence to the practice of deterrence on the other.²³

If the Court found in the case of a certain type of weapon, which multiple states around the world already possessed and had already been deployed in armed conflict, that *opinio juris* was ‘nascent’, then in the case of a weapons system that is not as inherently violative of IHL as nuclear weapons, it appears highly unlikely that there exists any *opinio juris* that can conclusively point to the collective will of the international community calling for a prohibition on the use of LAWS.

In most other cases where the usage of a certain kind of weapon has been prohibited in international law, it has been established that their use would necessarily violate at least one of the numerous fundamental provisions of customary IHL that has developed over time from the St Petersburg Declaration in 1868 till the Geneva Conventions of 1949, with other conventions banning cluster munitions and chemical and biological weapons in the subsequent years to add to the corpus of IHL.

These weapons have been banned in international law largely due to their failure to distinguish between civilians and combatants and their ability to cause 'superfluous injury' to and 'unnecessary suffering' of those in the battlefield. Most of the existing law pertaining to this prohibition has come to be codified as Rule 70 in the database of customary IHL maintained by the International Committee of the Red Cross (ICRC).²⁴ All of these weapons—chemical, biological, cluster munitions—have witnessed deployment in the battlefield or elsewhere, proving their inability to comply with the law. In no instance has a weapon that has the potential to fully comply and further compliance with IHL as well as the potential to breach IHL, causing problems of attribution of responsibility, been banned pre-emptively.

Prior to the Committee on Disarmament moving to ban chemical weapons, there existed the Geneva Protocol of 1925²⁵ that expressly prohibited chemical weapons. Moreover, pursuant to UNGA Resolution 2454A (XII),²⁶ the report of the UN Secretary-General for the 18-Nation Disarmament Committee to the United Nations Security Council (UNSC) (S/9292/Rev.1),²⁷ in paragraph 39 under Chapter B, refers to the field trial of zinc cadmium sulphide. Several subsequent paragraphs deal with other instances of trials and field testing of elements of chemical weapons before the committee reported banning them. In the case of LAWS, no such evidence of trials exists. I would like to clarify that the argument here is not that there needs to be evidence of combatants being killed by LAWS for the international community to review and analyse their workings, but that there needs to be at least some proven instance of use—whether in trial, as an experiment or otherwise—before the international community moves to ban a weapon that can bring with it new methods of compliance with IHL.

It has also been argued that IHL calls for compliance with the laws of armed conflict but is largely silent on the 'mode' of compliance.²⁸ A weapon could either be physically manipulated, such as a rifle being picked up and fired, or manipulated by means of a computer programme—where a button is pressed and the machine fires or an algorithm commands a machine to fire—with a human being performing oversight. In both cases, as long as the necessary span of control can be expressed, the weapon is potentially legally compliant. It must be reiterated that LAWS have not been deployed in an offensive role by any nation yet. At most, there exist defensive countermeasure systems, such as the Phalanx CIWS of the US and the Iron Dome of Israel, which have varying degrees of autonomy,

with human oversight, and are used to defend against incoming missiles/rockets. Even those systems under development, such as BAE Systems' Taranis drone in the UK, are to be remotely controlled by means of satellites, without completely relinquishing human control. Therefore, the need to ban LAWS is further hampered, to a certain degree, by the lack of necessity.

LAWS AND ACCOUNTABILITY FOR POTENTIAL BREACHES OF IHL

This section covers the question of accountability for potential breaches of IHL for the three different types of autonomous systems.

Man in the Loop Systems

A man in the loop system is one where the human operator makes the ultimate decision to fire at a target. If the operator here is likened to a military commander who gives the order to strike, then there are multiple provisions of international law that are applicable. Article 87 of AP I makes it obligatory for a commander to 'prevent and where necessary, to suppress and report to competent authorities'²⁹ any violations of the Geneva Conventions and AP I. It goes without saying that LAWS here are not being compared to 'forces' on the ground, but are merely being described as weapons systems under the effective command of military operatives in charge of combat operations. The fact that the commander makes the final decision to fire reinforces the fact that LAWS themselves are still weapons per se and not independent entities. Furthermore, in the Statute of the International Criminal Tribunal for the Former Yugoslavia (ICTY), there exists a stipulation in Article 7(3) that the fact that 'crimes were committed by a subordinate does not relieve his superior of criminal responsibility if he knew...'.³⁰ In *Prosecutor vs Delalic*, the tribunal had ruled that the commander must have 'had in his possession, information of a nature, which at least, would put him on notice of the risk of... offenses by indicating the need for additional investigation in order to ascertain whether crimes were committed.'³¹ This interpretation of the tribunal finds reiteration in *Prosecutor vs Sefel Halilovic*.³² The argument here is that if any norms of IHL were breached by means of the LAWS deployed, then, in light of the existing law, responsibility would lie on the operator who issued the ultimate command to strike as he/she is the one who is supposed to be aware of the potential outcomes of such a decision and is also supposed to know what actions shall be violative of IHL. The attribution of responsibility here would be by commission of the act.

Man on the Loop Systems

Man on the loop systems are those in which the machine has the ability to act and attack a predetermined target, but the human operator overseeing the deployment of the weapon has the ability to override this decision. Thus, if the weapons system, by reason of malfunction or any other cause, attacks an unlawful combatant or breaches any other provision of IHL, then, according to the existing laws of armed conflict, the operator would be held responsible for these actions. Article 86(2) states that the commander or the human operator would be held accountable:

...if they knew, or had information which should have enabled them to conclude in the circumstances at the time, that he was committing or about to commit such a breach and if they did not take all feasible measures within their power to prevent or repress the breach.³³

To reiterate the point made earlier, the weapon is not being anthropomorphised for the sake of argumentation, but it is simply the principle of command responsibility which is being delineated. According to the Yamashita Standard set by the Supreme Court of the US in 1946, a commander can be held liable for 'unlawfully disregarding and failing to discharge his duty as a commander to control the acts of members of his command'.³⁴ Additionally, Article 28(a) of the Rome Statute of the International Criminal Court (ICC) states that military commanders are imposed with individual responsibility for crimes committed by forces under their effective command and control if they 'either knew or owing to the circumstances at the time, should have known that the forces were committing or about to commit such crimes'.³⁵ In this case, responsibility is attributed to the military commanders by omission of the act.

Man out of the Loop Systems

This system is the one where the main legal concern arises with regard to attribution of responsibility for breaches of IHL. The fact that a weapons system is completely out of meaningful human control is one that attests to the argument that there is no law that covers the deployment of such systems. The creation, within the existing norms of IHL, of some amount of *lex specialis* is what is necessary to extend the regime of law that governs other forms of conventional weapons to fully autonomous weapons systems.

Beyond this, there exists one aspect of law that is clearly established, that is, of state responsibility. A fully autonomous weapons system, if deployed by the forces of a state, shall be acting effectively as a part of the military of the state. According to Article 8 of the Articles on Responsibility of States for Internationally Wrongful Acts, ‘the conduct of a person or group of persons shall be considered an act of state... under the direction or control of that state...’³⁶ Hence, if there is a fully autonomous weapon that makes decisions based on algorithms and artificial intelligence but is programmed to act according to the purposes of a state, then any breaches of law committed by the system shall be attributed to the state. Furthermore, Rule 149 of the ICRC database on customary IHL also stipulates that the state is responsible for violations of IHL attributable to it, including violations committed by persons or groups acting under its direction and control or private persons or groups which it acknowledges and adopts as its own conduct.³⁷ However, due to the lack of meaningful human control over such systems, the ‘effective control’ test laid down by the ICJ in the *Nicaragua vs United States of America*³⁸ case does not apply with distinct clarity, thus requiring either a decisive reinterpretation in the field of laws of armed conflicts by an international court or a significant restatement of the law in the light of advancements in artificial intelligence technology. Thus, among the several aspects pertaining to LAWS that states need to clarify their stance on, two are immensely significant:

1. Will states accord legal personality to fully autonomous weapons systems?
2. Will fully autonomous weapons systems be considered as weapons or independent entities wielding weapons?

There exists a dearth of discussion among states in this regard. Indeed, it is more of speculation and less of analysis to attempt to understand when and how the states shall clarify this: whether by means of explicit declarations or by expressions of state practice and *opinio juris*. In either case, it seems likely that if and when fully autonomous weapons are developed and deployed, an answer to these questions shall be more evident.

WAR CRIMES

With regard to grave breaches of IHL and the commission of war crimes, accountability for the usage of those weapons that retain meaningful

human control will fall on those in command, as explained in the previous section. However, with regard to fully autonomous weapons, other than the ambiguity in terms of attributing responsibility for the breaches of IHL, there also exists a lacuna in the understanding of war crimes, as per the existing law. Several documents have included war crimes as an integral part of the jurisprudence they were propounding, such as the London Charter for the Nuremberg Trials.³⁹ However, the most definitive, modern and extensive definition of what constitutes as a war crime has been laid down in the Rome Statute. Even a cursory glance at these definitions, with the nature of fully autonomous systems in mind, reveals the issue with the substance of international law applicable in this regard. Article 8(1) of the Rome Statute states that the ICC shall have jurisdiction to try war crimes, 'in particular when committed as part of plan or policy or as part of large-scale commission of such crimes'.⁴⁰ In the case of autonomous weapons with certain degree of human control, especially in the targeting phases, such a 'plan or policy' would not be difficult to determine. However, in the case of fully autonomous systems, it appears dystopian that a system could develop a plan or policy for the large-scale commission of crimes, at least as of today. Article 8(2) goes on to define war crimes in several clauses and sub-clauses, with clause 8(a) defining grave breaches of the Geneva Conventions from 'wilful killing' to 'taking hostages'. The intriguing aspect, however, is revealed in clause 8(b), in sub-clauses such as i, ii, iii, iv, ix, xxiv and xxv. All of these sub-clauses begin with or include the term 'intentionally'.

With existing systems and technologies of artificial intelligence, it has not yet been conclusively determined if a fully autonomous weapon can develop the 'intention' to commit war crimes. There exists a severe dearth of data and physical instances of use, as stated earlier. However, even if intent is supposedly established, hypothetically, the *mens rea*⁴¹ needed to commit war crimes is conditional upon both 'intent' and 'knowledge'. Article 30 of the Rome Statute establishes the nature of *mens rea*, but the exemptions made for command responsibility in Article 28(a) only remove the human operator (if at all any present, at whatever distance from the system in the chain of command) farther from the machine executing the actions declared as war crimes. A discrepancy also exists with regard to the determination of 'indirect intent', which the ICTY in *Prosecutor vs Tihomir Balskic*⁴² had declared to be sufficient to fulfil *mens rea*, as a matter of customary international law. As a whole,

the aspects of intent, knowledge and indirect intent, all remain nebulous in the realm of lethal fully autonomous weapons and while they make a strong case for not letting these weapons take the field yet, they also make an equally strong case for the need for distinct trials, which might even prove compliance with IHL.

In the case of autonomous systems with meaningful human control, a coherent structure of command responsibility can aid in the determination of who in the chain of command had the intent, knowledge or will to commit war crimes. Concerns of immunity from jurisdiction do not limit the application of the law if an impartial investigation is indeed opened against the members of the military of the state. This can extend from those present in the tactical command or force execution phase of the weapons to the individual at the top who played a role in the strategic command phase, as the ICC's Pre-Trial as well as Appeals Chambers laid down in *The Prosecutor vs Omar Hassan Ahmad Al Bashir*⁴³ case: 'there is no Head of State immunity under customary international law vis-à-vis an international court'. However, the primary hindrance to such an international court trying individuals for war crimes is the fact that the nations which arguably possess the technology to be the first to develop and deploy LAWS, such as the US and Russia, are not parties to the Rome Statute. This narrows the ambit of jurisdictional authority the ICC might have to try for war crimes to a Security Council referral, which itself is subject to affirmative votes by these very nations. While this is a concern that will continue to be relevant in the case of autonomous weapons in the future, it is even relevant in the case of present-day conventional weapons and methods of warfare. The height of dispute among the US and the ICC was evident when Prosecutor Fatou Bensouda attempted to open an investigation against the US for actions of the US forces in Afghanistan. In the *Al Bashir* case, multiple states party to the Court's statute failed to execute their responsibility to arrest the Sudanese leader when he was on their territory. Therefore, the states' cooperation with the Hague-based court is an issue that needs to be settled for present-day disputes first, notwithstanding the question of accountability for futuristic weapons. However, while a mechanism to try cases involving LAWS might be explored in the future, if they are ever deployed, an analysis of the potential for creation of a set of laws to govern the manner of trying cases involving LAWS shall be worthwhile before their anticipated deployment.

IRAN AIR FLIGHT 655 AS A CASE STUDY

History has an almost inexhaustive repertoire of examples to offer when one looks for tragic accidents caused by human error—influenced by physical, psychological or emotional factors. The fact that autonomous weapons systems shall not be vulnerable to such errors is not the argument here, though such a proposition is not new. The downing of Iran Air Flight 655 in 1988, a case of mistaken identity, led to the devastating loss of 290 lives, including both the crew and passengers onboard the Airbus passenger airliner. The aircraft, carrying passengers of various nationalities, was shot down over the Persian Gulf by the guided missile cruiser *USS Vincennes*, by means of an SM-2MR surface-to-air missile,⁴⁴ following a series of ill-judged decisions taken at multiple levels of the chain of command aboard the *Vincennes*. The facts of the case have been stated and analysed several times and need no reiteration, except for a brief recount of key aspects. The crew of the US ship, in the midst of intermittent skirmishes with Iranian fast attack craft at sea, mis-identified the Iranian civil airliner, an Airbus A300, as an incoming F-14 Tomcat preparing to attack the ship. Consequently, the decision to strike led the *Vincennes* to fire a guided surface-to-air missile, using the Aegis combat system. The RIM-66 Standard Missile used to attack the Iranian aircraft was a guided missile, with the ability to identify the target, determine the most efficient path to the target and home in using infrared sensing. It was one of two such missiles that took down Iran Air Flight 655. While the Aegis system is not an autonomous weapon, it can be said that from the time the operators on the ship executed the launch of the missile till the point the missile hit the target, the weapon acted fundamentally on its own, with a certain measure of control or oversight from the ship.

Now, the argument here is two-fold. First, most of the legal questions that the incident brought to the fore centred around responsibility for the disaster, as was seen in the application filed by Iran instituting proceedings against the US at the ICJ. Though the US paid reparations to Iran, it did not legally accept the responsibility for shooting down of the airliner and never issued a formal apology. The discussion that arose in the aftermath did not centre around the Aegis system itself, as it was quite evident that the human beings onboard the ship deemed the aircraft to be threat based on data (part of which was misread), selected the target and took the decision to fire at the aircraft. The missile system was actuated *after* the decision to engage was already taken. Testimony to this is the fact that there were neither any calls for international

prohibition on the use of guided missiles, the larger endeavour of disarmament notwithstanding, nor was there any question of trying to attribute blame to the missile system itself. The proposition itself seems absurd. Thus, in the case of LAWS, if meaningful human control is indeed exercised in target selection and execution process, the situation would not radically be different in terms of attribution of responsibility. While it will be mere speculation to suggest that if the Aegis combat system had more autonomy then this tragedy would not have occurred, it must be acknowledged that psychological duress would not be a factor. The degree to which this had played a role, according to the official account of the US, is evident by the US justification for the actions of the crew of the *Vincennes* that they were subject to a psychological condition termed 'scenario fulfilment', which leads to certain hasty decisions under pressure.

The second aspect is based on the hypothesis that the weapons system was fully autonomous. For man out of the loop systems, as mentioned earlier, there are several grey areas of law on the question of attribution of responsibility. If the system that was deployed targeted the aircraft and shot it down on its own, without any human involvement, then it is inevitable that the state of Iran would still hold the state of the US liable for the accident. However, in terms of individual criminal responsibility, there would be no law to determine if the weapons system itself could be held liable, before looking at command responsibility. The most prominent of all problems with regard to LAWS today is this absence of the law. If a fully autonomous weapons system is to be deployed, the actions of which give rise to an international dispute, any international body would have to create a set of *ex post facto*⁴⁵ norms to decide if the deployment of the system itself was legal. There would then come the question of the creation of a new class of crimes and a change in the interpretation of fundamental aspects, such as 'intent', within the definition of war crimes. The application of the law retrospectively is an aspect that needs to be avoided; and such an argument is not without precedent. In his colossal dissenting opinion where he differed from the majority judgment of the International Military Tribunal for the Far East, Justice Radhabinod Pal stipulated at multiple points that such *ex post facto* classification was abhorrent to the law of civilised nations and hinted at this itself being a crime.⁴⁶

Therefore, it is imperative that enough international laws must be created, especially with regard to the question of attribution of

responsibility, before LAWS themselves are deployed. If a ban on fully autonomous weapons is not placed, then, regardless of the development or lack thereof in IHL, there needs to be at least a non-binding set of regulations for the usage of LAWS among states, even if not a legally binding treaty. The *San Remo Manual on International Law Applicable to Armed Conflicts at Sea*⁴⁷ suffices as a good precedent for such a set of regulations, even if they are simply restatements of the law suited for the potential deployment of LAWS, particularly for fully autonomous weapons systems. However, while the *San Remo Manual* incorporated certain principles of customary international law, any manual governing the use of LAWS would require fresh iterations of the law due to the novel nature of the weapons systems in question.

ABILITY OF UNSC AND ICJ TO DETERMINE THE LEGALITY OF LAWS

The UNSC, which has been given the primary responsibility for the maintenance of international peace and security under Article 24 of the UN Charter, shall have to take up the question of LAWS as a thematic issue and not as a dispute that shall require a decision under Chapters VI or VII of the Charter. The UNSC does not necessarily need to limit its obligations under Article 24 to the specific powers under Chapters VI, VII and VIII as stated in the *Repertory of Practice of United Nations Organs*. The *Repertory* also highlights that obligations on the UNSC flow from the authority conferred on it to act on behalf of its members while being responsible for the maintenance of international peace and security.⁴⁸ It was established conclusively in the *Namibia* Advisory Opinion given by the ICJ⁴⁹ that Article 24 confers general powers on the UNSC. Finally, the 'Repertoire of the Practice of the Security Council', in its introductory note regarding the contents of Chapter VIII, indicates that the UNSC does not always need to mention under which chapter it is acting.⁵⁰

The UNSC can attempt to generate the political capital required to regulate the usage of LAWS. The legal question pertaining to LAWS, however, is one for the ICJ and not the UNSC, inferred as a matter of principle from Article 36 of the UN Charter even though it applies to the Pacific Settlement of Disputes. Unlike in the *Nuclear Weapons* opinion, the question that is to be put to the Court (if it is put) should not be similar to that of the 1996 case. Here, the question must not be the 'Legality of the Threat or Use of Lethal Autonomous Systems', for it then

is presumed that the use of LAWS would be illegal. This presumption is premature given that states too have acknowledged the development of 'emerging technologies in the area of LAWS in upholding compliance with IHL and other applicable international legal obligations', as is evident in the 2018 GGE report.⁵¹ The UK, in its letter to the Court before the 1996 opinion, stated that:

The question addressed to the Court is whether the threat or use of nuclear weapons is in any circumstance permitted under international law. It is however, axiomatic that in the absence of a prohibitive rule opposable to a particular State, the conduct of the State in question must be permissible. Properly, therefore, the question should be whether the threat or use of nuclear weapons is prohibited by any rule of international law. In contrast, the question as formulated is implicitly cast in terms of a presumption of illegality, rebuttable on proof that the conduct in question is permitted.⁵²

The UK went on to argue that the assumption of the argument is that the weapons are prohibited and the Court is being asked to prove if they are not prohibited. In the case of LAWS, this argument needs to be considered given the very different nature of LAWS when compared to nuclear weapons, as explained earlier. Here, the presumption needs to be that the usage of LAWS is legal and the Court needs to prove that it is prohibited under international law. Hence, if the question ever goes to the ICJ, the opinion to be requested for should preferably be on the statement, 'The Prohibition on the Threat or Use of Lethal Autonomous Weapons Systems'.

CONCLUSION

In 1868, the St Petersburg Declaration, in its preambulatory clauses, stated that 'the progress of civilization should have the effect of alleviating as much as possible the calamities of war'.⁵³ The weapons of war have evolved across history, with limitations being placed on those weapons which cause superfluous injury. In modern society, 'the only legitimate object which States should endeavour to accomplish during war is to weaken the military forces of the enemy'⁵⁴ and the weapons deployed in this regard should supplement this objective without committing excesses.

The prospect of deployment of LAWS has drawn frowns, but the call for a blanket ban on them at this stage is myopic and the current body

of law must be considered as applicable to weapons with some element of human control. Such control is of three different kinds, with man being in, on, or out of the loop. It is only in the realm of full autonomy that there exists a need to develop the law, in the light of the requirements of Article 36 of AP I. The concerns principally lie in the possibility of breaches of IHL that can be committed by LAWS and the commission of war crimes, with the main difficulty arising in terms of determination of 'intent' to commit a crime. The Iran Air case, however, demonstrates that there exist some grounds of retaining the responsibility of humans involved, even if the instrument of attack was a weapon with some degree of autonomy. It is imperative, in this case, to let international law develop and evolve with due time. A premature ban on such weapons would mean deriding and pre-empting the possibility of better compliance with IHL by such weapons.

There exist several questions in international law, even beyond those highlighted in this article, with regard to LAWS—whether partially or fully autonomous. While this article only considers the legal position of these weapons with respect to IHL, there is the larger ethical argument against the deployment of such weapons which deals with the dignity of the human person. It would run counter to the endeavours of innumerable organisations which seek to make warfare more humane, however oxymoronic the phrase might appear, if such weapons are deployed against their vehement protests. The position occupied by the principles of the 'Right to Life' and the 'Dignity of the Human Person' is a fundamental one in the International Bill of Human Rights⁵⁵ and must be respected to the extent possible even during armed conflict, balancing out the principles of proportionality and military necessity. These aspects considered, if certain forms of autonomous weapons do indeed have the ability to comply with IHL in a manner more effective than weapons in deployment today, then their usage cannot and should not be brought under a blanket ban on autonomous weapons, if such a ban is indeed instituted.

NOTES

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2. 'UN Head Calls for a Ban', n.d., available at <https://www.stopkillerrobots.org/2018/11/unban/>, accessed on 22 November 2019.

3. *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, ICJ Reports, 1996, p. 226 (hereafter, *Nuclear Weapons* case).
4. *S.S. Lotus (France vs Turkey)*, Judgment, PCIJ (Series A) No. 10, ICGJ, 7 September 1927, para 248; League of Nations (historical).
5. D. Gayle, 'UK, US and Russia among Those Opposing Killer Robot Ban', *The Guardian*, 29 March 2019, available at <https://www.theguardian.com/science/2019/mar/29/uk-us-russia-opposing-killer-robot-ban-un-ai>, accessed on 28 October 2019.
6. US, DoD Directive, available at <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodd/300009p.pdf>, accessed on 6 December 2019.
7. 'Human Machine Touchpoints: The United Kingdom's Perspective on Human Control over Weapon Development and Targeting Cycles', UK Working Paper submitted to the GGE, August 2018, available at [https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/050CF806D90934F5C12582E5002EB800/%24file/2018_GGE+LAWS_August_Working+Paper_UK.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/050CF806D90934F5C12582E5002EB800/%24file/2018_GGE+LAWS_August_Working+Paper_UK.pdf), accessed on 15 November 2019.
8. International Committee of the Red Cross (ICRC), 'Article 36 of Additional Protocol I', 1977, available at <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/WebART/470-750045>, accessed on 6 December 2019 (hereafter, 'Additional Protocol I').
9. 'Human Machine Touchpoints', n. 7.
10. Maziar Homayounnejad, 'The Lawful Use of Autonomous Weapon Systems for Targeted Strikes (Part 2): Targeting Law & Practice', Research Paper Series, 2018, London: Dickson Poon Transnational Law Institute, King's College London.
11. GGE, Report of the 2018 session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems, Geneva, available at [https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/20092911F6495FA7C125830E003F9A5B/\\$file/CCW_GGE.1_2018_3_final.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/20092911F6495FA7C125830E003F9A5B/$file/CCW_GGE.1_2018_3_final.pdf), accessed on 22 November 2019.
12. 'Lex specialis' means the body of law governing a specific topic, rather than one covering general matters. It also usually implies that where both are applicable, the specific law shall have precedence over the general.
13. ICRC, 'Article 52(2) of Additional Protocol I', 1977, available at <https://ihl-databases.icrc.org/ihl/WebART/470-750067>, accessed on 6 December 2019; emphasis added.
14. Predicated on a hypothesis or a forecast rather than actual events.
15. See UN, 'Vienna Convention on the Law of Treaties, 1969', Articles 31–33, available at https://legal.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf, accessed on 13 July, 2019.

16. The set of documents that form the preparatory work of a treaty.
17. *Jadhav Case (India vs Pakistan)*, ICJ General List No. 168, 17 July 2019, para 71, available at <https://www.icj-cij.org/files/case-related/168/168-20190717-JUD-01-00-EN.pdf>, accessed on 6 December 2019.
18. *Report to the Third Committee on the Work of the Working Group Committee III*, Doc. No. CDDH/III/293. See the ICRC Commentary of 1987 on Article 36, available at <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/Comment.xsp?action=openDocument&documentId=F095453E41336B76C12563CD00432AA1>, accessed on 25 November 2019.
19. Personnel rendered disabled in an armed conflict to the extent that they can no longer be considered combatants or fit to discharge their official duties as a combatant during war.
20. *Nuclear Weapons* case, n. 3, para 73.
21. The current and existing version of the law.
22. The psychological element behind an action or simply the belief that an action by a state was carried out as a consequence of a legal obligation and not for any reason such as courtesy.
23. *Nuclear Weapons* case, n. 3, para 73.
24. ICRC, 'Rule 70. Weapons of a Nature to Cause Superfluous Injury or Unnecessary Suffering', available at https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_rule70, accessed on 2 December 2019.
25. United Nations Office for Disarmament Affairs (UNODA), '1925 Geneva Protocol', available at <https://www.un.org/disarmament/wmd/bio/1925-geneva-protocol>, accessed on 5 December 2019.
26. UN official document, available at [http://www.un.org/ga/search/view_doc.asp?symbol=A/Res/2454\(XXIII\)](http://www.un.org/ga/search/view_doc.asp?symbol=A/Res/2454(XXIII)), accessed on 28 November 2019.
27. UN official document, available at http://www.un.org/ga/search/view_doc.asp?symbol=A/7575/Rev.1, accessed on 28 November 2019.
28. Homayounnejad, 'The Lawful Use of Autonomous Weapon Systems for Targeted Strikes (Part 2)', n. 10
29. ICRC, 'Additional Protocol I', n. 8.
30. ICTY, 'Statute of the Tribunal', available at <https://www.icty.org/en/documents/statute-tribunal>, accessed on 2 December 2019.
31. ICTY Trial Chamber, available at <https://www.icty.org/x/cases/mucic/tjug/en/>, accessed on 30 November 2019.
32. Judgment in the case of the *Prosecutor vs Sefer Halilovic*, available at <https://www.icty.org/en/press/judgement-case-prosecutor-v-sefer-halilovic>, accessed on 6 December 2019.
33. ICRC, 'Additional Protocol I', n. 8.

34. FindLaw's United States Supreme Court case and opinions, available at <http://caselaw.lp.findlaw.com/scripts/getcase.pl?court=US&vol=327&invol=1>, accessed on 25 November 2019.
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36. Draft Articles, available at http://legal.un.org/ilc/texts/instruments/english/commentaries/9_6_2001.pdf, accessed on 22 December 2019
37. ICRC, 'Rule 149. Responsibility for Violations of International Humanitarian Law', available at https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_rule149, accessed on 30 November 2019
38. *Military and Paramilitary Activities in and against Nicaragua (Nicaragua vs United States of America)*, Jurisdiction and Admissibility, Judgment, ICJ Reports, 1984, p. 392.
39. '1945 Charter of the International Military Tribunal', available at https://www.un.org/en/genocideprevention/documents/atrocities-crimes/Doc.2_Charter%20of%20IMT%201945.pdf, accessed on 6 September 2019.
40. 'Rome Statute of the ICC', n. 35.
41. The intention to commit a crime and the knowledge of such commission, rather than the act of the crime itself.
42. ICTY, *Blaškić (IT-95-14)*, 25 April 1997, available at <https://www.icty.org/en/case/blaskic>, accessed on 30 November 2019.
43. *The Prosecutor vs. Omar Hassan Ahmad Al Bashir*, available at <https://www.icc-cpi.int/CaseInformationSheets/albashirEng.pdf>, accessed on 4 December 2019.
44. Nancy J. Cook and Frank Durso, *Stories of Modern Technology Failures and Cognitive Engineering Successes*, Boca Raton, FL: CRC Press, 2007, p. 77.
45. The application of the law retrospectively. Essentially, the application of a law to a crime that was committed before the relevant law was laid down.
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https://www.un.org/Depts/dpa/repertoire/46-51/46-51_08.pdf, accessed on 29 November 2019.

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