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TECHNOLOGICAL ADVANCEMENT IN INTERNATIONAL AND NON-INTERNATIONAL ARMED CONFLICTS

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ABSTRACT

Expansion in technologies and advanced armaments have revolutionized warfare since time immemorial, with the invention of the nuclear-powered armaments and various atomic weaponries to remember how innovation technologies have been transmuted the landscape of warfare. International community have broadly examined the relevance of the existing laws to address the evolving technological changes, but they have dedicated comparatively little attention in these evaluates for the prior development of the law as a result of technological transformation. The general paucity of serious appointment with the history of international law applicable in armed conflicts with the challenge and the disagreements about the impact of technology on society, and the consequence of military technology on warfare in general. Nevertheless, this article examines the laws governing the standing, legality and validity of both automatic and remote weapons systems under international humanitarian law. Technologically innovative military systems are being introduced into the contemporary battlespace with insufficient recognition of their possible challenge to the international humanitarian law. Further, it contains the challenges posed to international humanitarian law by the extensive use of new technology which enabled the materials and other potential applications.

KEYWORDS: Law of armed conflict, law of war, international humanitarian law (IHL), international treaties, law of war, international criminal court (ICC).

INTRODUCTION

As armaments become more technologically composite, the challenges complying with this advancement are ostensibly the unpretentious requirements of international law which become more intimidating. The particulars of the construction and testing methods would correspondingly be monotonous. The same cannot be stated about some modern weapons which are still under development. The practice of a guided armament with an unstoppable firing option requires an

understanding of the legal limitations, the production, manufacturing design, and testing or validation, and how the weapon might be employed on the battlefield needs deep apprehension. Furthermore, the breakdown of barriers through a multidisciplinary method that classifies the key legal issues associated with employing new technological advanced weapons sets out important features of emerging technology and examines how scientific tests and evaluations can be used to update the weapon review process. The amalgamation of these methods provides a over-all framework to address the legal issues associated with weapon development and how to put restrictions upon them, regardless of the simplicity or complexity of the weapon.

SIGNIFICANCE OF HISTORY

Law of War has been challenged by new technologies over and over again in the last few decades. Numerous technologies transformed the battlespace in particular weapons which have been perceived to be the most evolved instrument. The history of warfare has been repeatedly interrupted by the advancement in the weaponry which claims that every new weapons are “*unlawful*” which will led to the devastation of mankind. Prior encounters amongst legal sanctions and technologically advanced armaments give some indication regarding effectiveness of legal solutions implemented to solve the concerning technological change in the battlespace. In the domestic jurisdictional context, the technological advanced law to support and endure high-tech changes widely. The significant matter for the law of war which has been so specific as to be easily condensed and inapplicable in the new changes. The noticeable instance is the prohibition of gas warfare. The first prohibition on the use of gas in warfare was in the *1899 Hague Declaration* where the contracting States agreed “*to abstain from the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases*”.¹ Hereafter, since then the changes in weaponry has been emerged and evolved accordingly.

INTERNATIONAL & NON-INTERNATIONAL ARMED CONFLICT

International Humanitarian Law, the subdivision of international law which governs armed conflict distinguishes two types of armed conflicts, namely: international armed conflicts, which evolve the hostilities between two or more States, and non-international armed conflicts, which

¹ *Hague Declaration (IV, 2) on the Use of Projectiles the Object of Which is the Diffusion of Asphyxiating or Deleterious Gases*, 187 CTS 453, 29 July 1899 (entered into force 4 September 1900).

include governmental forces and non-governmental armed groups. International treaties also establish more on the terms international armed conflicts and non-international armed conflicts respectively within the definition provided in Art. 1 of Additional Protocol II, Rome Statute of International Criminal Court and common Article 3 of the Geneva Conventions of 1949. Legitimately, there is no other type of armed conflict exists, nevertheless significant to emphasize that a situation can evolve from one type of armed conflict to another, depending on the facts dominant at a particular instance.²

- *Article 3 of the Fourth Geneva Convention 1949:*

Article 3 common to the 1949 Geneva Conventions are applicable in the case of a non-international type of armed conflict. This provision concerns the armed conflict of “not of an international character” and does not provide a definition. So, referring back to Article 2, armed conflicts that are not of an international character comprise those conflicts in which at least one of the parties involved is non-governmental. Common Article 3 also undertakes that international humanitarian laws do not apply to a situation of violence until it has reached a distinguished level of internal disturbances and isolated acts of violence are not of a parallel nature. The International Criminal Tribunal for the Former Yugoslavia specified that the threshold for an internal armed conflict reaches when the situation can be defined as ‘*protracted armed violence*’.³ Two main elements are establishing an internal armed conflicts are i) any certain intensity of the armed violence, ii) or a certain phase of association of the parties. When these two conditions have not been established the situation of violence may be defined as internal disturbances or internal tensions. These two concepts, which designate categories of social instability that do not pertain to armed conflict, have never been defined in law granting all this they are mentioned explicitly in Additional Protocol II.⁴

- *Article I of Additional Protocol II:*

This applies to non-international armed conflicts which were taken place in the territory of a High

² International Committee of the Red Cross, How is the term “Armed Conflict” defined in international humanitarian law?, 17.03.2008, available at <https://www.icrc.org/en/doc/resources/documents/article/other/armed-conflict-article-170308.htm> (accessed on 10 March 2023).

³ ICTY, *Prosecutor v. Tadic*, Case No. IT-94-1, Decision on the Defence Motion for Interlocutory Appeal on Jurisdiction, 2 October 1995.

⁴ Sylvain Vit , ICRC, Typology of armed conflicts in international humanitarian law : legal concepts and actual situations, Volume 91 Number 873, March 2009, available at : <https://www.icrc.org/en/doc/assets/files/other/irrc-873-vite.pdf> (accessed on 04 March 2023).

Contracting Party between its armed forces and rebellious armed forces or other organized armed groups which exercise such control over a part of its territory and concerted military operations and to implement this Protocol. However, these provisions do not apply to wars between national liberation, which are associated with international armed conflicts.⁵

Article 3 when combined with Additional Protocol II denotes more restricted field of application of international humanitarian law by implementing the regulations, which denotes the requirements for a particular organization that they must operate '*under responsible command*' and exercise territorial control, allowing them '*to carry out sustained and concerted military operations and to implement this Protocol*'. Even though the Common Article similarly conveys that a particular organization does not require to exercise control of a part of a territory. Nearly, a conflict may fall under Common Article 3 without fulfilling conditions determined by Additional Protocol II. All the armed conflicts covered by Additional Protocol II have been governed by Common Article 3. Predominantly, it is often difficult to control situations that comply with the criteria of Additional Protocol II. The required degree of territorial control differs from case to case. If Article 1(1) is to be applied strictly, only those non-governmental parties would be covered which exercise similar control of a State, hence the nature of conflict would be subsequent to international armed conflict. The ICRC (International Committee of the Red Cross) seems to be the middle path on the territorial issue. It denotes that sometimes territorial control can be relative. Additional Protocol II restricts its field of application to armed conflicts between government armed forces and dissident armed forces unlike Common Article 3 which extends to conflicts solely between non-governmental groups. Ultimately, Additional Protocol II started the criteria already given in Common Article 3 that they cover only non-international armed conflicts occurring in any one High Contracting Party.

- *Rome Statute of International Criminal Court :*

The Rome Statute of the ICC signifies two categories of crimes that occur during 'armed conflicts not of an international character': (a) serious violations of common Article 3, and (b) other serious violations of several laws and customs of war that are applicable in those circumstances. In both cases, the Statute denotes the lowest level of applicability of the relevant provisions by stipulating that they do not apply to 'situations of internal disturbances and tensions, such as riots, isolated and serious acts of violence and other acts of a similar nature'. Besides, this instrument which

⁵ Article 1(4) of Additional Protocol I.

does not give a more precise definition of the material field of application of the rules about ‘serious violations of common Article 3’ (Article 8(2)(d)), it illuminates the concepts of non-international armed conflict in the case of ‘other serious violations’. Article 8(2)(f) specifies in that case that the rules must implicate ‘to armed conflicts that take place in the territory of a State when there is a protracted armed conflict between governmental authorities and organized armed groups’.

Case law established the legality of the interpretation in the Statute. In the Lubanga Dyilo case, the ICC Pre-Trial Chamber relied upon Additional Protocol II to interpret paragraph (2)(f) of the Statute. It thus evidently wanted to confer a distinct meaning on this provision, by stating a specific threshold of applicability. The Chamber made specify that this threshold is characterized by two conditions: (a) the violence must contains certain intensity to be protracted; (b) an armed group with a dimension of organized groups particularly have the ‘ability to plan and carry out military operations for a prolonged period’ must be connected.⁶

JUS AD BELLUM & JUS IN BELLO

- *Jus ad bellum*

Jus ad bellum refers to the circumstances under which States resort to war or the use of armed force without any prohibition. This is distinct from the set of rules which ought to be followed during a war, known as jus in bello, which govern the measure taken by the parties involved in an armed conflict. There are certain principles laid down in accordance with Jus Ad Bellum. The principles of the justice of war are commonly held to be: having cause for the specific measures, being a last resort, being declared by a proper authority, possessing the right intention to involve in armed conflict, having a reasonable chance of success, and the end being proportional to the means used by the other party.

The primary source of jus ad bellum is the United Nations Charter, which explicitly prohibits all signatories from using force as mentioned by Article 2(4)) except in instances when permitted by the Security Council pursuant according to a resolution issued under Chapter VII of the UN Charter, and when a signatory is exercising its inherent right of self-defense when it has been the target of an armed attack as mentioned by Article 51. Complications and ambiguity regarding how the UN Charter should be interpreted when cyberattacks result from three fundamental facts.

⁶ International Criminal Court, *Prosecutor v. Lubanga Dyilo*, Case No. ICC-01/04-01/06-803, Decision on the confirmation of charges (Pre-Trial Chamber I), 29 January 2007.

Firstly, the UN Charter was written in 1945, long before the evolution of cyberattacks was even imagined. The fundamental threshold for the formulation of the Charter involved threats to the territorial sovereignty of the nations, and thus the framers of the Charter could not have imagined how it might apply to the evolved cyber conflict. Second, the UN Charter itself contains no definitions for certain key terms, such as ‘*use of force*’, ‘*threat of force*’, or ‘*armed attack*’. Thus, the underlying meaning of these terms could not be understood by any reference invoked in the Charter. Definitions and meanings can only be supported by historical precedent and practice, how individual nations, the United Nations, and international judicial bodies have defined these terms in particular circumstances. Due to the lack of clarity for what these terms it is not surprising that there is even less clarity for what they might mean in the context of cyber conflict. Similarly, the UN Charter is internally inconsistent with the regulations of cybercrimes emerging in the evolved manner. Article 2(4) prohibits the use of force that could damage persons or property other than in self- defense or authorized by the UN Security Council. However, Article 41 allows other acts (specifically, economic sanctions) that could damage persons or property. The use of operations not contemplated by the framers of the UN Charter which resulted in cyber operations magnifies such inconsistencies.

- ***Jus in bello***

Jus in bello, is the law that governs the procedure in which warfare will be conducted. International Humanitarian law is purely seeking to limit the suffering caused by an armed conflict. It is autonomous from quarries about the justification or reasons for war, or its prevention which is covered by *jus ad bellum*. The principles of *jus in bello*, the regulations regarding the conduct of war fall under the two broad categories of discrimination and proportionality. The principle of discrimination concerns who are the legitimate targets in war excluding civilians, whilst the principle of proportionality concerns how much force is morally appropriate in a war.

Jus in bello is based upon the provisions of the Geneva Conventions and their customary counterparts. Some of the fundamental principles underlying *jus in bello* are the principle of military necessity the principle of distinction military operations may be conducted only against ‘*military objectives*’ and not against civilians, and the principle of proportionality the unexpected incidental loss of civilian life, injury to civilians or damage to civilian objects must not be disproportionate to the military advantage. The UN Charter and the Geneva Conventions are silent on cyberattack as a modality of conflict, and the question of how to apply the principles mentioned

in any instance involving cyber conflict may be controversial. The following cases are offered to raise some key issues. Under the provisions of the Geneva Conventions and Additional Protocols related to distinctive portions, parties to a conflict must distinguish between civilians and combatants between civilian objects and military targets. In the context of cyber warfare, an attack on an adversary's technology system or network would have to be intended to result in a definite military advantage and not merely a political or economic advantage. Today, military forces are likely to route a large fraction of their communications over facilities that are primarily used for civilian purposes.

TECHNOLOGICAL ADVANCEMENT IN WEAPONRY

The advancement in military technologies and weapon systems in research and funding programmes increase a range of substantial legal issues. The complication of the legal issues will be compounded by increasing technological erudition and greater proliferation of unconventional weaponries. The *St. Petersburg Declaration of 1868*, barred the use of projectiles by which the international community has attempted to regulate new technologies in warfare. And international humanitarian law has developed in response to new challenges raised by new types of machinery. The effects of the emerging technologies have a lead reflection on the meaning of the 'use of armed force' as the threshold of the applicability of humanitarian law *jus in bello*, particularly in the context of a cyberattack. Similarly, this applies to the concept of an 'armed attack', which triggers the right of self-defense under the United Nations Charter. The cyberattacks in which States have engaged so far seem to be more closely related to sabotage or espionage than to armed conflict.

Various observations regarding the development of autonomous weapon systems as having the potential to improve compliance with humanitarian law on the battlefield. It becomes difficult from a technological standpoint to give these weapons the capacity to make distinctions. The ICRC emphasizes that the deployment of such systems have been raised a range of fundamental legal, ethical and societal issues which need to be considered before such systems are developed or deployed.⁷

Warfare has been upgraded, over the past few decades with an extraordinary technological change

⁷ ICRC, 'International humanitarian law and the challenges of contemporary armed conflicts,' Report of the 31st International Conference of the Red Cross and Red Crescent, ICRC, available at: <http://www.icrc.org/eng/assets/files/red-cross-crescent-movement/31st-internationalconference/31-int-conference-ihl-challenges-report-11-5-1-2-en.pdf> (accessed on 07 March 2023).

in conflicts and military capabilities. Reportedly various States have established dedicated cyber-warfare units within their armed forces or intelligence agencies to regulate cybercrimes which help the States fend off hostile cyber-operations targeting their national infrastructure and undertake such operations against an adversary. Furthermore, many States are said to operate *unmanned aerial vehicles (UAVs)* for intelligence, surveillance and reconnaissance, and allegedly some 30 States already have or are developing armed UAVs. Military applications of artificial intelligence and biotechnology are being actively devised and implemented. This technological shift has **signified** an extensive debate about the adequacy of the applicable international law, yet past developments of the law which resulted in the technological change garnered surprisingly little attention in these analyses.

CONCLUSION

Emerging technologies are prominently dominant on the agenda of policymakers and military leaders around the globe. New units to ensure cyber security are created at various levels of government, including in the armed forces. Various cyber operations in armed conflict situations could have potentially very serious consequences, in particular when their effect is not limited to the data of the targeted computer system or computer. Indeed, cybercrimes especially under international laws are usually intended to have an effect in the '*real world*'. The potential humanitarian impact of several cyber operations on the civilian population is enormous. It is therefore significant to discuss the rules of international humanitarian law that govern such operations because one of the main objectives of this body of law is to protect the civilian population from the effects of warfare in general.

In conclusion, there is no question that international humanitarian law also applies to cyber warfare as any other armed conflict. Moreover, it will provide sufficient protection to the civilian population, particularly by shielding civilian infrastructure from harm during the war. If interpreted in good faith it will be possible to protect civilian infrastructure from being directly targeted or from suffering damage that could potentially be disastrous for the civilian population. Even then, considering the potential weaknesses of the principles of distinction and precaution in the absence of more profound knowledge of offensive capabilities and effects it cannot be excluded that more stringent rules might be necessary for the domain of international humanitarian law to deal with the emerging technological changes.