# THE BIG TECH-MILITARY NEXUS: AI, WARFARE, AND THE FUTURE OF INTERNATIONAL LAW

Romaissa Ghenai, LL.M

The rapid integration of artificial intelligence into modern warfare has sparked significant debates regarding its implications for international law, ethics, and transitional justice. This research explores the transformative role of AI-driven technologies, particularly autonomous weapons systems, in reshaping the interpretation and application of the Law of Armed Conflict (LOAC), International Criminal Law (ICL), and International Human Rights Law (IHRL), while highlighting critical legal and ethical gaps exposed by these advancements. The study addresses the challenges of regulating autonomous weapon systems and investigates how evolving technologies influence accountability and the enforcement of international law. Additionally, it examines the roles of individual and state actors, as well as Big Tech companies, in developing and deploying AI-driven warfare technologies, and explores the legal gaps in regulating these actors within armed conflict. The research also considers the risks AI poses in enabling or exacerbating acts of genocide, emphasizing the urgent need for updated regulations. Ultimately, this research advocates for a balanced approach to regulating AI-driven weapons in warfare one that upholds humanitarian principles while accommodating technological progress. Through critical case studies of current armed conflicts, the conclusion argues that the rapid evolution of warfare technologies necessitates continuous legal development to protect civilians, uphold human rights, support transitional justice, and sustain global peace and security.<sup>1</sup>

# Keywords: arms control, artificial intelligence, international humanitarian law, transitional justice

<sup>&</sup>lt;sup>1</sup> This paper is drawn from my Master of Laws dissertation, *Unmanned Conflict and International Humanitarian Law: Navigating Legal Challenges in Contemporary Warfare Advancements*. I sincerely thank Professor Tenia Kyriazi, my dissertation supervisor, and Professor Christian Gonzalez-Rivera for their invaluable support and guidance throughout the drafting process. This was written in an individual capacity and does not reflect the views of my employer or my university.

# Table of Contents

Introduction	3
CHAPTER 1: SILICON VALLEY SOLDIERS: THE ROLE OF AI IN WARFARE	5
Introduction	5
1.1 From Automation to Autonomy	5
1.2 The Military Renaissance	6
CHAPTER 2: THE LEGAL BATTLEFIELD	9
Introduction	9
2.1 When Humans Become the Robots	9
2.2 Precision or Peril? Analyzing Contemporary Conflicts	. 10
2.3 The Accountability Void	. 13
CHAPTER 3: LOOKING TO THE FUTURE	. 17
Introduction	. 17
3.1 Is LOAC Still Fit for Purpose?	. 17
3.2 The Real Issue: Compliance and Enforcement	. 20
CHAPTER 4: FILLING THE GAPS	. 22
Introduction	. 22
4.1 Filling the Gap: Actual Meaningful Human Control	. 22
4.2 Filling the Gap: Martens Clause	. 23
CONCLUSION	. 26

## Introduction

Artificial intelligence (AI) is the most accessible weapon of mass destruction in today's world, and big tech makes it easier for the wrong person to have the big red button. Unlike traditional weapons of mass destruction, such as nuclear or chemical weapons, which require highly specialized materials, infrastructure, and expertise, AI technology is increasingly democratized.<sup>2</sup> AI is accessible to both State and non-State actors, this ease of access enables the development of potentially harmful applications by those with ill intentions.<sup>3</sup> One of the most concerning applications of AI is in its power to streamline autonomous weapons systems.<sup>4</sup> The ability of AI to automate and scale lethal attacks makes it a powerful tool for destabilization on a global scale, but this outcome need not be treated as a *fait accompli* issue. The failure of States to regulate autonomous weapons under international law, if left unchecked, may solidify further into practice, making future accountability difficult. *Malus usus abolendus est*, such a precedent must be dismantled before it becomes entrenched in warfare doctrine.

Beyond physical destruction, when incorporated into autonomous weapons systems, AI poses a threat through its capacity to manipulate information. This form of harm, while less visible than physical destruction, can implement the long-lasting consequences that international humanitarian law was designed to prevent.<sup>5</sup> While these technologies promise enhanced precision in hopes of reduced human casualties and improved strategic decision-making, they also pose major legal challenges. These challenges extend beyond accountability as they threaten to erode the effectiveness and legitimacy of the international legal frameworks which govern armed conflict entirely. The big tech-military nexus, which is characterized by the growing involvement of private technology companies in armed conflict, exacerbates these challenges. This creates the governance vacuum seen today, where the traditional notions of state responsibility and human oversight are increasingly inadequate.

<sup>&</sup>lt;sup>2</sup> Michael B. Hamby, 'New Technology Makes Production of WMD's Easier, MISS Experts Warn' (*Middlebury Institute of International Studies at Monterey*, 15 October 2019) < <u>https://www.middlebury.edu/institute/news/new-technology-makes-production-wmds-easier-miis-</u>

experts%20warn#:~:text=October%2015%2C%202019%20%7C%20by%20Michael,:Vardion%2C%20and%20Simon%20Eugst er%20 > accessed 26 February 2025.

<sup>&</sup>lt;sup>3</sup> Oliver Meier, 'The fast and the deadly: When Artificial Intelligence meets Weapons of Mass Destruction' (*European Leadership Network*, 27 June 2024) <<u>https://europeanleadershipnetwork.org/commentary/the-fast-and-the-deadly-when-artificial-intelligence-meets-weapons-of-mass-</u>

destruction/#:~:text=Artificial%20intelligence%20(AI)%20is%20a,mechanisms%2C%20such%20as%20export%20controls. > accessed 21 February 2025.

<sup>&</sup>lt;sup>4</sup> Ibid.

<sup>&</sup>lt;sup>5</sup> Rebecca Sutton and Emanuela-Chiara Gillard, *Beyond Compliance: International Humanitarian Law, Humanitarian Need and Civilian Harm in Armed Conflict* (Research Report, University of Edinburg) [2021].

International humanitarian law (IHL), designed in a pre-AI era, relies on human judgment and responsibility to uphold principles such as distinction and proportionality.<sup>6</sup> However, the deployment of AI-driven systems challenges these principles by introducing lethal autonomous weapons into life-and-death decisions. The involvement of private tech companies, who may put money over morals, in developing and deploying these systems further complicates the legal landscape, as traditional international legal instruments struggle to address the actions of these non-state actors. <sup>7</sup> In contemporary conflicts, international law has fallen victim to powerful States in the name of rules-based order as they use their own interests to bypass long-standing constraints on the use of force.<sup>8</sup> The normalization of targeted killings and the misuse of the responsibility to protect as a defense to violations of Hague and Geneva law by scholars and State officials has revealed how even liberal democracies could undermine the rules-based order they helped create.<sup>9</sup> This erosion of customary norms has set a dangerous precedent, one that now intersects with the rise of the damage caused by the integration of AI in warfare.<sup>10</sup>

<sup>&</sup>lt;sup>6</sup> Taylor K. Woodcock, 'Human/Machine Interactions, Human Agency and the International Humanitarian Law Proportionality Standard' [2022] Global Society 100, 101.

<sup>&</sup>lt;sup>7</sup> Roberto J. Gonzalez, 'How Big Tech and Silicon Valley are Transforming the Military-Industrial Complex' [2024] Costs of War <<u>https://watson.brown.edu/costsofwar/papers/2024/SiliconValley</u>> accessed 24 February 2025.

<sup>&</sup>lt;sup>8</sup> Oona A. Hathaway, 'How the Expansion of 'Self-Defense' Has Undermined Constraints on the Use of Force' (*Just Security*, 18 September 2023) <<u>https://www.justsecurity.org/88346/the-expansion-of-self-defense/</u>> accessed 11 February 2025.

<sup>&</sup>lt;sup>9</sup> Michael N. Schmitt, '21<sup>st</sup> Century Conflict: Can the Law Survive?' [2007] 8 Melbourne Journal of International Law 443, 471.
<sup>10</sup> Tshilidzi Marwala, 'Militarization of AI has severe implications for global security and warfare' (United Nations University, 24 July 2023) < <u>https://unu.edu/article/militarization-ai-has-severe-implications-global-security-and-warfare</u>> accessed 24 February 2025.

## **CHAPTER 1:** SILICON VALLEY SOLDIERS: THE ROLE OF AI IN WARFARE

## Introduction

A comprehensive understanding of existing AI-driven military technologies is essential for assessing the legal challenges they present. Particularly, examining big tech's role and the weaponization of the systems they create helps to pinpoint the most pertinent legal challenges associated with each. At the heart of the dominance of the rapidly growing AI transformation is the influence of big tech companies like Google, Microsoft, Amazon, and SpaceX, which have become indispensable to military operations both domestically and worldwide.<sup>11</sup> By integrating advanced machine learning algorithms and autonomous targeting systems, big tech is using AI to help States transform the battlefield by enhancing aspects in favor of their government clients in their favor for decision-making, precision, and efficiency.<sup>12</sup> This evolution not only changes the game regarding the capabilities of States' armed forces in the modern day arms race but, at its core, the presence of AI systems in warfare also adds leverage to a State's military via data analytics that process vast amounts of information quickly and accurately.<sup>13</sup>

## 1.1 From Automation to Autonomy

Autonomy in AI-driven weapon systems operates on a spectrum, with varying levels of human involvement and decision-making.<sup>14</sup> Each level of autonomy affects how systems can possibly comply with legal principles. At one end of the spectrum are semi-autonomous systems, such as the MQ-9 Reaper drone, which require human operators to make critical decisions, such as target selection or strike authorization.<sup>15</sup> While this form of autonomy allows for higher levels of human control, these systems may slow down military operations since human input is needed at every critical situation. Moving further along the spectrum are supervised autonomous systems, such as the PackBot UGV, which mostly operate independently but are monitored by humans who

<sup>&</sup>lt;sup>11</sup> Roberto J. Gonzalez, 'How Big Tech and Silicon Valley are Transforming the Military-Industrial Complex' [2024] Costs of War <<u>https://watson.brown.edu/costsofwar/papers/2024/SiliconValley</u>> accessed 24 February 2025.

<sup>&</sup>lt;sup>12</sup> Jackie Davalos, "AI Is Reshaping the Battlefield and the Future of Warfare" (*Bloomberg*, 4 May 2023) <<u>https://www.bloomberg.com/news/articles/2023-05-04/ai-is-reshaping-the-battlefield-and-the-future-of-warfare?embedded-checkout=true></u>.

<sup>&</sup>lt;sup>13</sup> Maj Gen David Wilson, "Operating at the Speed of Trust on the Battlefield of 2030 and Beyond" (*National Defense*, 6 February 2024) < <u>https://www.nationaldefensemagazine.org/articles/2024/2/6/viewpoint-operating-at-the-speed-of-trust-on-the-battlefield-of-2030-and-beyond</u>>.

<sup>&</sup>lt;sup>14</sup> Michael Mayer, 'Trusting machine intelligence: artificial intelligence and human -autonomy teaming in military operations' [2023] 39 Defense and Security Analysis 521, 526.

<sup>&</sup>lt;sup>15</sup> Gregory C. Allen, 'DOD is updating its decade-old autonomous weapons policy, but confusion remains widespread' (CSIS, 6 June 2022) < <u>https://www.csis.org/analysis/dod-updating-its-decade-old-autonomous-weapons-policy-confusion-remains-widespread</u>> accessed 8 July 2024.

intervene when necessary.<sup>16</sup> At the highest end of the spectrum are fully autonomous systems, such as loitering munitions like the Israeli Harpy drone, which lives up to its "fire and forget" nickname as it can make decisions with little to no human intervention.<sup>17</sup> What makes these weapons autonomous isn't AI, but rather it is the ability to detect and engage targets based on preprogrammed instructions or sensor inputs without a human. This is also known as the observe, orient, decide, act (OODA) framework. As defined by the United Nations Office for Disarmament Affairs, AI is not a requirement for AWS to function, but when integrated, it takes these systems to another level.<sup>18</sup> While AWS can operate with basic automation, AI makes these weapons operate faster, smarter, and more responsively to unpredictable battlefield conditions, pushing the boundaries of what autonomous weapons can do.<sup>19</sup>

## 1.2 The Military Renaissance

In modern warfare, the role of big tech has become deeply embedded in States' military strategy, intelligence, and combat operations.<sup>20</sup> This arguably makes big tech companies complicit in violations of international law, making what once was a web search engine now an accomplice in possible war crimes. The increasing reliance on autonomous weapons in contemporary conflicts such as those involving Ukraine and Gaza, along with concerns over competition with China in AI militarization, has led to a surge in States' funding for advanced digital technologies.<sup>21</sup> Tech giants provide the hardware and software necessary for AI-assisted decision-making platforms used in combat.<sup>22</sup> Companies specializing in cloud computing and AI research, such as Google, have formed partnerships with military and defense agencies to supply critical computing infrastructure that supports States' defense operations in contemporary armed conflict.<sup>23</sup> However, beyond direct contributions to weapons, some tech companies play a pivotal role in States' intelligence gathering

<sup>21</sup> Jacob Helberg, The Wires of War: Technology and the Global Struggle for Power (Avid Reader Press 2021) 109.

<sup>&</sup>lt;sup>16</sup> Kiva Allgood, 'Supervised autonomy: Why it will shape the human-robot workforce of the future' (*Forbes*, 17 August 2022) < <u>https://www.forbes.com/councils/forbestechcouncil/2022/08/17/supervised-autonomy-why-it-will-shape-the-human-robot-</u> workforce-of-the-future/> accessed 8 August 2024.

<sup>&</sup>lt;sup>17</sup> Francesco Ancona, 'AI in Warfare: Loitering Munitions – Current Applications and Legal Challenges' (*Mondo Internazionale*, 26 February 2024) < <u>https://mondointernazionale.org/focus-allegati/ai-in-warfare-loitering-munitions-current-applications-and-legal-challenges</u>> accessed 25 August 2024.

<sup>&</sup>lt;sup>18</sup> Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to have Indiscriminate Effects (10 March 2023) CCW/GGE.1/2-23/CRP.1.

<sup>&</sup>lt;sup>19</sup> Paul Scharre, Army of None: Autonomous Weapons and the Future of War (New York: W.W Norton & Company 2018) 5.

<sup>&</sup>lt;sup>20</sup> Roberto J. Gonzalez, 'How Big Tech and Silicon Valley are Transforming the Military-Industrial Complex' [2024] Costs of War <<u>https://watson.brown.edu/costsofwar/papers/2024/SiliconValley</u>> accessed 24 February 2025.

<sup>&</sup>lt;sup>22</sup> Elke Schwarz, 'Silicon Valley Goes to War' [2021] 65 Philosophy Today 549, 550.

<sup>&</sup>lt;sup>23</sup> Roberto Gonzalez, 'Militarizing Big Tech' (*Transnational Institute*, 7 February 2023)
<<u>https://www.tni.org/en/article/militarising-big-tech</u>> accessed 24 February 2025.

and military operations.<sup>24</sup> As the intersection between the arms race and technological development continues to evolve, big tech's role in armed conflict will likely expand.

Project Maven is one of the most prominent litmus tests of the concerns behind the big tech and big defense relationship.<sup>25</sup> Launched by the U.S. Department of Defense in collaboration with Google, the multi-million-dollar partnership was designed to leverage machine learning algorithms to analyze drone surveillance footage to coordinate precision attacks.<sup>26</sup> Although Google ended its controversial involvement in 2019 following internal protests, the Pentagon has continued to refine and deploy AI systems developed under Project Maven through a new partnership with tech company Palantir.<sup>27</sup> In application, the U.S. military utilized these AI tools to identify targets for over 85 airstrikes in the Middle East in 2024.<sup>28</sup> The AI systems stemming from Project Maven played a critical role in processing MQ-9 drone information and satellite imagery to narrow down potential targets, though the DOD claims that human personnel verified all recommendations and planned the execution of the strikes.<sup>29</sup>

SpaceX, while not considered a traditional big tech company, has also emerged as a key player in modern warfare advancements through its Starlink satellite internet system. During the ongoing war between Russia and Ukraine, Starlink terminals effectively provided intelligence and is considered an enabler of Ukraine's defense efforts.<sup>30</sup> The technology has proven especially effective in Ukraine's drone warfare strategy. Drone reconnaissance units use Starlink terminals to control unmanned aerial vehicles (UAV) and provide live feeds for target identification in precision strikes.<sup>31</sup> Finally, one of Amazon's most notable military contracts is Project Nimbus, a collaboration between Amazon, Google, and the Israeli Defense Forces, which enhances cloud-based AI capabilities for their military operations.<sup>32</sup> The cloud systems support automated target

<sup>&</sup>lt;sup>24</sup> Ibid.

<sup>&</sup>lt;sup>25</sup> Justin Doubleday, 'Project Maven aims to introduce AI tools into services' intel systems' [2018] 30 Inside the Army 6, 6.

<sup>&</sup>lt;sup>26</sup> Ibid.

<sup>&</sup>lt;sup>27</sup> Charles W. Mahoney, "United States defence contractors and the future of military operations" [2020] Defense and Security Analysis 187.

<sup>&</sup>lt;sup>28</sup> Joe Saballa, 'US Military Deploys AI to Aid Air Strikes in Middle East' (*The Defense Post*, 6 March 2024) <<u>https://thedefensepost.com/2024/03/06/us-ai-airstrikes-middle-east/</u>> accessed 24 February 2025.
<sup>29</sup> Ibid.

<sup>&</sup>lt;sup>27</sup> Ibid

<sup>&</sup>lt;sup>30</sup> Amritha Jayanti, 'Starlink and the Russia-Ukraine War: A Case of Commercial Technology and Public Purpose?' (Belfer Center, 9 March 2023) < <u>https://www.belfercenter.org/publication/starlink-and-russia-ukraine-war-case-commercial-technology-and-public-purpose</u>> accessed 24 February 2025.

<sup>&</sup>lt;sup>31</sup> Ron Gurantz, Satellites in the Russia-Ukraine War (US Army War College Press 2024) 24.

<sup>&</sup>lt;sup>32</sup> Michael Biesecker, 'As Israel uses US-made AI models in war, concerns arise about tech's role in who lives and who dies' (Associate Press 18 February 2025) <<u>https://apnews.com/article/israel-palestinians-ai-technology-737bc17af7b03e98c29cec4e15d0f108#</u>> accessed 20 February 2025.

identification and battlefield simulations to enhance military decision-making.<sup>33</sup> The Israeli military's use of AI-driven systems and partnerships with major U.S. tech companies represents the growing entanglement between private enterprise and military operations. The role of big tech in the rise of AI in warfare is no longer a distant possibility but an immediate, pressing issue. Unchecked deployment of AI in military conflicts threatens to set a dangerous precedent where robots control State action in matters of life-and-death.

## **CHAPTER 2:** THE LEGAL BATTLEFIELD

## Introduction

While proponents argue that autonomous systems can comply with the legal standards set forth in jus in bello principles through technological advancements in target identification and engagement, critics contend that removing humans from lethal decision-making risks undermining the very foundation of said principles.<sup>34</sup> State actors, through the use of weapons that function using some degree of autonomy, often times operate in legally ambiguous spaces outside of recognized armed conflicts.<sup>35</sup> This is evident by the targeted strikes carried out in the name of the War on Terror, which often were carried out by data collected using AI-driven system.<sup>36</sup> These strikes circumvent due process, raising concerns under Article 6 of the International Covenant on Civil and Political Rights (ICCPR), which outlines the right to life and prohibits arbitrary deprivation of life.<sup>37</sup> Despite the International Court of Justice's advisory opinion that the right to life applies even in armed conflicts, States' engaging in extraterritorial drone strikes have challenged the applicability of human rights law to these operations, undermining the ICCPR and customary international law.<sup>38</sup> This is just one example of States turning a cold shoulder to legal norms in the context of armed conflict over the past two decades to set the stage for the proliferation of AI-driven military operations, where the lack of a clear regulatory framework risks further dismantling the efficacy of the boundaries set by international humanitarian law.<sup>39</sup>

## 2.1 When Humans Become the Robots

War, by its very nature, is incompatible with the goals of humanitarian principles and human rights. It is a brutal clash of violence, fear, and destruction. Yet, throughout history, the psychological burden of killing has been tempered by the immediacy of face-to-face combat. Soldiers have had to confront the humanity of their enemies, seeing the consequences of their actions up close. This visceral connection, while harrowing, has served as a moral check that forces combatants to grapple with the weight of their decisions. Automated systems allow operators to

<sup>&</sup>lt;sup>34</sup> Amitai Etzioni, Pros and Cons of Autonomous Weapons Systems (Army University Press 2017) 72.

<sup>&</sup>lt;sup>35</sup> Ibid.

<sup>&</sup>lt;sup>36</sup> Anthony King, "Digital Targeting: Artificial Intelligence, Data, and Military Intelligence" Journal of Global Security Studies Vol 9(2) [2024] 12.

<sup>&</sup>lt;sup>37</sup> UNCHR 'General Comment 36' in 'Article 6: Right to Life' (3 September 2019) UN Doc. CCPR/C/GC/36.

<sup>&</sup>lt;sup>38</sup> Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion) [1996] ICJ Rep 226.

<sup>&</sup>lt;sup>39</sup> Daphne Eviatar, 'Trump vs. International Law: Exploiting the Legal Gaps Left by the Obama Administration' (OpinioJuris 10 August 2018) < <u>http://opiniojuris.org/2018/10/08/34116/</u>> accessed 24 February 2025.

engage in warfare from thousands of miles away.<sup>40</sup> This detachment reduces war into a video game-like experience, especially through the usage of AI to push PSYOPS onto military personnel who may dehumanize their adversaries.<sup>41</sup> Studies on drone operators have shown that this psychological distance can lead to a sense of detachment, with some describing their work as "playing God".<sup>42</sup> The result is a form of warfare that prioritizes efficiency over empathy, where the human cost is an afterthought rather than a central concern. By removing the human element from the act of killing, autonomous weapons create a dangerous psychological distance, making it easier to launch a lethal strike and look away. In this new era of warfare, humans risk becoming the very robots they control; detached, desensitized, and dehumanized.

## 2.2 Precision or Peril? Analyzing Contemporary Conflicts

Israel's use of AI-driven AWS in its military operations has significantly transformed the dynamics of war in the region, particularly in the context of the ongoing conflict with Gaza. Israel relies on a wide range of autonomous and AI-powered technologies to enhance operational precision, improve surveillance capabilities, and reduce human involvement in lethal decision-making.<sup>43</sup> Israel's Lavender and Gospel AI systems are central to its recent military operations, particularly in the densely populated Gaza Strip.<sup>44</sup> The Lavender system, developed by Israel's Unit 8200, is an AI-driven database that analyzes compiled data from various surveillance sources to identify suspected targets.<sup>45</sup> Lavender evaluates characteristics of known Hamas operatives and applies this intelligence to the general population to generate a list of potential targets.<sup>46</sup> It has reportedly marked a number of Palestinians for potential strikes based on algorithmic assessments of their likelihood to be combatants.<sup>47</sup> Investigations indicate that Israel may not manually review

<sup>&</sup>lt;sup>40</sup> Matthew Revels, 'How Will Automation Change Ground Warfare?' [2023] Georgetown Security Studies Review < <u>https://georgetownsecuritystudiesreview.org/2023/02/21/how-will-automation-change-ground-warfare/</u>> accessed 21 February 2025.

<sup>&</sup>lt;sup>41</sup> Randy Borum, Psychology of Terrorism (University of South Florida 2004) 29.

<sup>&</sup>lt;sup>42</sup> Dr Dave Slog, Drone Warfare The Development of Unmanned Aerial Conflict (Pen and Sword Aviation 2014) 47.

<sup>&</sup>lt;sup>43</sup> Marwa Fatafta, 'Artificial genocidal intelligence: how Israel is automating human rights abuses and war crimes' (*Access Now*, 9 May 2024) < <u>https://www.accessnow.org/publication/artificial-genocidal-intelligence-israel-gaza/</u>> accessed 20 August 2024.

 <sup>&</sup>lt;sup>44</sup> Michael N. Schmitt, 'Israel-Hamas 2024 Symposium- The Gospel, Lavender, and the law of armed conflict' (*Articles of War*, 28 June 2024) < <u>https://lieber.westpoint.edu/gospel-lavender-law-armed-conflict/</u>> accessed 20 August 2024.

<sup>&</sup>lt;sup>45</sup> FP Explainers, 'What is 'lavender', the AI program that Israel 'used' to create kill lists in Gaza?' (*First Post*, 4 April 2024) < <u>https://www.firstpost.com/explainers/lavender-ai-program-israel-kill-lists-gaza-hamas-war-13756112.html</u>> accessed 17 July 2024.

<sup>&</sup>lt;sup>46</sup> Ibid.

<sup>&</sup>lt;sup>47</sup> Djuna Schamus, 'The Lavender Program' (*Tempest*, 24 July 2024) < <u>https://tempestmag.org/2024/07/the-lavender-program/#:~:text=The%20AI%20program—called%20"Lavender,operatives%2C%20of%20the%20military%20wings</u>> accessed 27 August 2024.

all AI-generated targets before executing strikes, leading to erroneous and indiscriminate killings.<sup>48</sup> Similarly, the Gospel also uses AI to analyze real-time surveillance data to recommend targets to human analysts for approval.<sup>49</sup> Gospel reportedly processes intelligence far faster than human analysts, generating hundreds of targets daily during peak military operations.<sup>50</sup> While these systems claim to improve precision, their deployment in densely populated urban areas has led to devastating collateral damage.<sup>51</sup> The legal system does not permit the taking of innocent lives to be justified as a mere consequence of war. The justifications presented by proponents of these weapons systems run contra legem to jus in bello principles intended to safeguard civilian populationss. In fact, the number of Palestinian civilians killed during this AI-driven military campaign is one of the highest from any aggression between the two sides.<sup>52</sup> The better safe than sorry approach enabled by the usage of AWS allows for civilians to be targeted and killed preemptively, often without any formal investigation or evidence of direct involvement in hostilities.<sup>53</sup> This lack of human insight raises ethical and legal concerns, particularly when Israel is operating in densely populated areas like Gaza, where combatants often blend in with civilians. Previous reports found Harpy drones to be deployed in urban zones where civilian infrastructure is often intertwined with military targets.<sup>54</sup> This is a clear violation of Article 51 of the Additional Protocol I to the Geneva Conventions which governs the protection for civilian objects, including schools and hospitals which are protected by the proportionality principle.<sup>55</sup>

This conflict is an example of asymmetric warfare, which is a conflict between a State and non-state actors, where the non-state actors often rely on irregular military tactics to challenge the more technologically advanced State.<sup>56</sup> The use of AI-driven weapons systems in asymmetric

<sup>&</sup>lt;sup>48</sup> Yuval Abraham, 'a mass assassination factory: inside Israel's calculated bombing of Gaza' (+972 Magazine, 30 November 2023) < https://www.972mag.com/mass-assassination-factory-israel-calculated-bombing-gaza/> accessed 20 August 2024.

<sup>&</sup>lt;sup>49</sup> Ibid.

<sup>&</sup>lt;sup>50</sup> Michael N. Schmitt, 'Israel-Hamas 2024 Symposium- The Gospel, Lavender, and the law of armed conflict' (*Articles of War*, 28 June 2024) < https://lieber.westpoint.edu/gospel-lavender-law-armed-conflict/> accessed 20 August 2024.

<sup>&</sup>lt;sup>51</sup> Oxfam International, 'Daily death rate in Gaza higher than any other major 21<sup>st</sup> century conflict' (*Oxfam International*, 11 Jnauary 2024) <<u>https://www.oxfam.org/en/press-releases/daily-death-rate-gaza-higher-any-other-major-21st-century-conflict-oxfam</u>> accessed 20 February 2025.

<sup>&</sup>lt;sup>52</sup> Lily Hamourtziadou, 'keeping track of the death toll in war zones' [2024] 11 Journal of Global Faultlines 3, 3.

<sup>&</sup>lt;sup>53</sup> Patrick Kingsley, 'Israel Loosened Its Rules to Bomb Hamas Fighters, Killing Many More Civilians' (New York Times, 26 December 2025) < <u>https://www.nytimes.com/2024/12/26/world/middleeast/israel-hamas-gaza-bombing.html</u>> accessed 26 February 2025.

<sup>&</sup>lt;sup>54</sup> Nils Adler, 'Israel's war on Gaza updates: 30 killed in Israeli attacks on schools' (*Al Jazeera*, 4 August 2024) < <u>https://www.aljazeera.com/news/liveblog/2024/8/4/israels-war-on-gaza-live-body-parts-everywhere-as-israel-bombs-shelter</u>> 27 August 2024.

<sup>&</sup>lt;sup>55</sup> Protocol Additional to the Geneva Conventions of 12 August 1949 and relating to the Protection of Victims of International Armed Conflicts (Protocol I) (adopted 8 June 1977, entered into force 7 December 1978) 1125 UNTS 3, art 51(5)(b).

<sup>&</sup>lt;sup>56</sup> Eyal Benvenisti, 'The legal battel to define the law on transnational asymmetric warfare' [2010] 20 Duke Journal of Comparative and International Law 339, 341.

warfare raises broader ethical questions. While these technologies could be used to provide surveillance advantages to State actors, they also highlight the disparity in the military capabilities between the conflicting parties. This disparity, combined with the already existing challenges of accountability for war crimes in this conflict, creates a moral hazard where the technologically superior State feels less constrained by IHL norms. In conflicts like the one in Gaza, where Palestinian militants are accused of using human shields, the IDF are still required to follow Hague and Geneva laws by making all efforts to distinguish between military targets and civilians when programming their AI-driven weapons.<sup>57</sup> Despite violations by the weaker party, the principles of IHL remain crucial and attacking innocent civilians remains prohibited by governing sources. That said, the practical limitations faced by the aggrieved party likely mitigate their responsibility, as their means of fighting are constrained by the resources available.<sup>58</sup> This asymmetry in military power, exacerbated by the AI advancements in war technology, means that the aggrieved party might be forced to rely on less precise methods of warfare, which could increase the risk of civilian casualties.

Moreover, the Russia-Ukraine war, which began with Russia's invasion of Ukraine in February 2022, has also evolved into a high-tech conflict, with both sides employing advanced technologies.<sup>59</sup> Ukraine receives significant military support from the West, including drones and precision-guided munitions, while Russia has deployed AI-driven loitering munitions, reconnaissance drones, and autonomous weapons.<sup>60</sup> The warzone has become a testing ground for partnerships between tech companies and States for various AI-driven weapons that aim to increase precision as this conflict represents one of the first large-scale applications of AI in active warfare, with each side using AI-driven systems differently.<sup>61</sup> One of the most significant applications of AI in the war has been in intelligence gathering and surveillance. Ukraine uses AI-enhanced geospatial intelligence tools, like Clearview AI satellite imagery, to identify and track Russian troop movements.<sup>62</sup> Clearview AI scans billions of images from public databases, social media,

<sup>&</sup>lt;sup>57</sup> International Committee of the Red Cross, 'Asymmetric Warfare' (*ICRC*, 2019) <<u>https://casebook.icrc.org/glossary/asymmetric-warfare</u>> accessed 25 June 2024.

<sup>58</sup> Ibid.

<sup>&</sup>lt;sup>59</sup> Samuel Bendett, 'Roles and implications of AI in the Russian Ukrainian conflict' (*CNAS*, 20 July 2023) < <u>https://www.cnas.org/publications/commentary/roles-and-implications-of-ai-in-the-russian-ukrainian-conflict</u>> accessed 24 August 2024.

<sup>60</sup> Ibid. 61

<sup>&</sup>lt;sup>62</sup> Juan Espindola, 'Facial Recognition in war contexts: mass surveillance and mass atrocity' [2023] 37 Ethics and International Affairs < <u>https://www.cambridge.org/core/journals/ethics-and-international-affairs/article/facial-recognition-in-war-contexts-mass-surveillance-and-mass-atrocity/415F18063D278B7E9EDB15C764AC1E79</u>> accessed 17 July 2024.

and other sources to match faces and confirm identities.<sup>63</sup> Furthermore, Ukraine has also extensively used AI-driven UAVs such as the Bayraktar TB2. The Bayraktar TB2 has proven to be highly effective, particularly during the Battle of Snake Island.<sup>64</sup> Ukrainian forces used the TB2's AI for both reconnaissance and offensive operations, enabling it to precisely strike Russian military assets, including air defense systems and landing crafts.<sup>65</sup> Russian usage of AI-driven systems include the Orlan-10 which are UAVs used for reconnaissance. In addition to surveillance, it performs electronic warfare tasks, jamming enemy communications and disrupting GPS signals.<sup>66</sup> While the drone itself is not weaponized, it has been used to guide artillery strikes, particularly when paired with Krasnopol laser-guided shells. This combination has been effective in delivering Russian strikes within minutes, compared to the longer response times without the UAV support.<sup>67</sup> The strikes guided by AI-driven Russian intelligence have resulted in civilian infrastructure being hit, raising concerns about violations of Geneva and Hague laws. Russian forces bombed a maternity hospital in March 2022, killing several civilians and injuring many others.<sup>68</sup> In the same city, a theatre used as a shelter for civilians, which was clearly marked as housing children, was bombed, reportedly killing hundreds of civilians.<sup>69</sup>

## 2.3 The Accountability Void

Big tech companies occupy a unique and troubling position in modern warfare. Yet, despite their critical role in a time of war, tech companies cannot be held to the same standards of accountability as States. Unlike arms manufacturers, who face at least some degree of liability for supplying unlawful weapons, Big Tech enjoys insulation from legal scrutiny, hiding behind the veneer of private sector neutrality while profiting from the militarization of AI in a quasi-state manner.<sup>70</sup> In reality, their contracts with defense departments demonstrate a clear understanding of their role in enabling States in creating the newest weapon of mass destruction. This lack of explicit

< <u>https://special-ops.org/orlan-10-uav/</u>> accessed 18 July 2024.

<sup>63</sup> Ibid.

<sup>&</sup>lt;sup>64</sup> Piotr Mickiewwicz, 'Maritime episodes of the Russian 'special operation' against Ukraine' [2023] Security Theory and Practice 41, 51.

<sup>65</sup> Ibid.

<sup>&</sup>lt;sup>66</sup> Eric Sof, 'Orlan-10: A UAV for reconnaissance and electronic warfare' (Spec Ops Magazine, 28 June 2022)

 <sup>&</sup>lt;sup>67</sup> WION, 'Ukraine war: Russia's Orlan-10 Krasnopol laser-guided drones' (*WION*, 14 May 2022) < <a href="https://www.wionews.com/photos/ukraine-war-russias-orlan-10-krasnopol-laser-guided-drones-462157">https://www.wionews.com/photos/ukraine-war-russias-orlan-10-krasnopol-laser-guided-drones-462157</a>> accessed 14 July 2024.
 <sup>68</sup> BBC, 'Ukraine war: three dead as maternity hospital hit by Russian air strike' (*BBC*, 10 March 2022) < <a href="https://www.bbc.com/news/world-europe-60675599">https://www.bbc.com/news/world-europe-60675599</a>> accessed 19 August 2024.

<sup>&</sup>lt;sup>69</sup> Tim Lister, 'Russia bombs theater where hundreds sought shelter and 'children' was written on grounds' (*CNN*, 16 March 2022) < <u>https://www.cnn.com/2022/03/16/europe/ukraine-mariupol-bombing-theater-intl/index.html</u>> accessed 12 July 2024.

<sup>&</sup>lt;sup>70</sup> Johnathan Horowitz, 'One Click from Conflict: Some Legal Considerations Related to Technology Companies Providing Digital Services in Situations of Armed Conflict' [2024] 24 Chicago International Law Journal 305, 314.

international legal obligations for private corporations under the framework of IHL creates a legal gray area where big tech companies can profit from military contracts, on the backs of dead civilians, without facing accountability for potential violations. This creates a perverse incentive for tech companies to prioritize profit over ethical considerations, knowing that they are shielded from international legal consequences and protected by the State they contract with.

The problem with the lack of accountability goes far beyond that of tech companies which cannot be reached by international humanitarian law. The legal gap of assigning accountability is a critical challenge that has emerged from the modern use of AI in warfare. With some AI systems making autonomous decisions, it has become difficult to hold specific actors accountable for LAWS actions that lead to civilian casualties or violations of IHL. Two avenues of enforcing IHL are through state responsibility (ICJ) and individual responsibility (ICC), which represent degrees of accountability.<sup>71</sup> This traditional framework of accountability is based on the assumption that humans are making decisions about the use of force.<sup>72</sup> In the case of AWS, it is evident that these decisions are increasingly being made by algorithms, leading to questions about how to assign responsibility when things go wrong. This ties into the issue of accountability vacuum, particularly when AI-driven systems make incorrect targeting decisions or when civilians are harmed in the course of an operation.<sup>73</sup>

Individual responsibility, governed mainly by Article 25 of the Rome Statute, refers to the rule that individuals can be held personally accountable for crimes committed during armed conflicts, regardless of their rank or title.<sup>74</sup> This is a foundation in IHL which forces commanders, soldiers, government officials, and other individuals involved in warfare to be responsible for ensuring that their actions comply with laws, and they can be prosecuted if they violate these rules.<sup>75</sup> When the human aspect is removed, it becomes nearly impossible to assign individual accountability beyond a reasonable doubt when something goes wrong. This fuels the gap in justice for civilian victims of State harm. Next, State responsibility in IHL holds States accountable for making sure that their actions during armed conflict comply with the laws of war.<sup>76</sup> If violations

<sup>&</sup>lt;sup>71</sup> Yuval Shany, The Competing Jurisdictions of International Courts and Tribunals (Oxford University Press, 2003) 173.

<sup>&</sup>lt;sup>72</sup> International Committee for the Red Cross, 'Autonomous Weapon Systems: Implications of Increasing Autonomy in the Critical Functions of Weapons' (*ICRC*, 15-16 March 2016) <<u>https://icrcndresourcecentre.org/wp-content/uploads/2017/11/4283\_002\_Autonomus-Weapon-Systems\_WEB.pdf</u>> accessed 8 July 2024.

<sup>&</sup>lt;sup>73</sup> Christopher Sabatini, Reclaiming human rights in a changing world order (*The Brookings Institution*, 2023) 216.

 <sup>&</sup>lt;sup>74</sup> Rome Statute of the International Criminal Court (adopted 17 July 1998, entered into force 1 July 2002) 2187 UNTS 90, art 25.
 <sup>75</sup> Ibid.

<sup>&</sup>lt;sup>76</sup> Malcom Shaw, *International Law* (7th edn, Cambridge University Press 2014) 566, 582.

occur, the State must cease the conduct and make reparations, which could include restitution or compensation. Under Common Article 1 of the Geneva Conventions, all party States have an *erga omnes* duty to ensure respect for IHL, even if they are not directly involved in a conflict.<sup>77</sup> This responsibility also extends to ensuring that States perform regular legal reviews of new weapons systems, as required by Article 36 of Additional Protocol I to the Geneva Conventions, to ensure compliance with international law.<sup>78</sup> State responsibility is a cornerstone of IHL, as it establishes that States must not only regulate their own conduct but also work to uphold the integrity of international law in warfare, even in the face of evolving military technologies like AI-driven systems.<sup>79</sup> Without strong mechanisms to hold States and individuals accountable, perpetrators of war crimes, or other IHL violations, may act with impunity. This leads to a cycle of violence where there is little deterrent for future violations, emboldening both State actors, non-State tech companies, and individuals to continue unlawful conduct without fear of consequence.<sup>80</sup> This further emphasizes the argument that AI-driven warfare introduces significant risks of State impunity under IHL by complicating the assignment of responsibility and eroding key legal principles.

The human element refers to the broader role humans play in ensuring ethical and legal decision-making, even if they are not directly controlling the system.<sup>81</sup> Human control involves direct decision-making, where humans actively determine when and how autonomous systems engage in combat.<sup>82</sup> Human oversight, on the other hand, focuses on monitoring and supervising the system's operations to ensure compliance with pre-set parameters, intervening if necessary.<sup>83</sup> In applying these to military operations, a human operator would actively dictate a drone's flight path and targeting (human control), while a team of commanders oversees the mission (human oversight). Human judgment is applied in closing the gap in the legality of the strike, and

<sup>&</sup>lt;sup>77</sup> Geneva Convention Relative to the Protection of Civilian Persons in Time of War (adopted 12 August 1949, entered into force 21 October 1950) 75 UNTS 287 art 1.

<sup>&</sup>lt;sup>78</sup> Protocol Additional to the Geneva Conventions of 12 August 1949 and relating to the Protection of Victims of International Armed Conflicts (Protocol I) (adopted 8 June 1977, entered into force 7 December 1978) 1125 UNTS 3, art 36.

<sup>&</sup>lt;sup>79</sup> International Law Commission, 'Draft Articles on Responsibility of States for Internationally Wrongful Acts, with commentaries' (2001) UN Doc A/56/10.

<sup>&</sup>lt;sup>80</sup> Human Rights Watch, 'Mind the Gap: The Lack of Accountability for Killer Robots' (*Human Rights Watch*, 9 April 2015) <<u>https://www.hrw.org/report/2015/04/09/mind-gap/lack-accountability-killer-robots</u>> accessed 8 July 2024.

<sup>&</sup>lt;sup>81</sup> David Resnik, 'What is ethics in research & why is it important?' (*NEIHS*, 23 December 2020)

<sup>&</sup>lt; https://www.niehs.nih.gov/research/resources/bioethics/whatis> accessed 30 June 2024.

<sup>&</sup>lt;sup>82</sup> Fillipp Santoni de Sio, 'Meaningful human control over autonomous system: a philosophical account' [2018] Front Robot AI <<u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7806098/</u> > accessed 8 July 2024.

<sup>&</sup>lt;sup>83</sup> Sarah Stertz, 'On the quest for effectiveness in human oversight: interdisciplinary perspectives' (ARXIV, 5 April 2024) <<u>https://arxiv.org/html/2404.04059v1</u>> accessed 8 July 2024.

ultimately, the individuals involved in planning held responsible for any violation of IHL. The reality, however, is far more complex. No matter how intelligent machines become, they do not possess emotional intelligence to make decisions based on ethical or legal principles.<sup>84</sup> In many cases, human-in-the-loop systems heavily rely on complex algorithms and autonomous processes, which may limit the human operator's ability to fully understand or control the AI's actions.<sup>85</sup> The risk of automation bias, where humans defer to machine decisions, complicates the idea of true human oversight.

As tech companies race to advance the capabilities of AI in their application in autonomous weapons systems, the human operator may perceive the machine as more reliable or accurate than their own human judgment. This blind trust in the system leads to uncritical acceptance of AI-generated outcomes, effectively reducing the human role in decision-making to one of passive oversight, rather than active engagement. This has been reported in the Israeli usage of AI-driven weapons in Gaza.<sup>86</sup> IDF soldiers have reported that they "have more faith in a statistical mechanism....the machine did it coldly. And that made it easier."<sup>87</sup> Their testimony negates the argument that human involvement can fix the emotional intelligence problem which is lost in the full autonomy of weapons. If the human is using algorithm bias to make passive decisions, the argument ends up at square one. Additionally, the environment of rapid-paced military operations puts pressure on human operators to simply approve AI decision. Thus, while human control is a necessary component, it is not a sufficient safeguard on its own to ensure meaningful accountability.

<sup>&</sup>lt;sup>84</sup> Kell Delaney, 'Why AI Will Never Replace Our Emotional Intelligence' (*Conversant*, 15 May 2023) <<u>https://www.conversant.com/why-ai-will-never-replace-our-emotional-intelligence/</u>> accessed 26 February 2025.

<sup>&</sup>lt;sup>85</sup> Rajeevan Arunthavanathan, 'Artificial Intelligence – Human intelligence conflict and its impact on process system safety' [2024] 11 Digital Chemical Engineering

<sup>&</sup>lt;sup>86</sup> Beth McKernan, 'The machine did it coldly: Israel used AI to identify 37,000 Hamas targets' (*The Guardian*, 3 April 2024) <<u>https://www.theguardian.com/world/2024/apr/03/israel-gaza-ai-database-hamas-airstrikes</u>> accessed 8 July 2024.

<sup>&</sup>lt;sup>87</sup> Ibid.

# **CHAPTER 3:** LOOKING TO THE FUTURE

## Introduction

The primary challenge is that IHL, in its current form, was developed in an era before modern technologies like AI, AWS, and LAWS were even conceivable. While IHL has proved adaptable in the past, the rapid development of AI technology is outpacing the law. However, there are significant opportunities for reform. A more robust international framework would ensure that human judgment is not only present but actively engaged in decision-making processes. This requires designing AI systems that allow for human intervention at critical points, especially when lethal force is involved. Meaningful human control over LAWS should be a legal requirement, rather than a recommendation, to prevent ethical and legal violations. Second, international treaties, like the Geneva and Hague Conventions, need to be updated to specifically address AI in warfare. A new treaty or amendments to the Protocols should impose strict obligations on States regarding the use of autonomous systems, similar to the way that nuclear and chemical weapons are regulated.<sup>88</sup>

## 3.1 Is LOAC Still Fit for Purpose?

The question is not whether legal instruments that govern the laws of armed conflict are obsolete, but whether they are being properly interpreted and applied in the face of new realities. The obligation to ensure that commanders and operators remain accountable is reflected in Article 86 of AP I, which can be interpreted to extend responsibility to superiors who fail to prevent or repress LOAC violations.<sup>89</sup> The *jus in bello* principles of distinction and proportionality are technology-neutral, meaning they can be applied to emerging forms of warfare just as they have been applied to past developments in weapons. The adaptability of law has been demonstrated throughout history. When nuclear weapons emerged, the laws were interpreted and morphed to encompass their use, leading to restrictions on their deployment under the principles of necessity and proportionality.<sup>90</sup> Likewise, the legal community has begun to develop interpretative

<sup>&</sup>lt;sup>88</sup> Bonnie Docherty, 'New Weapons, Proven Precedent' (Human Rights Watch, 20 October 2020) < <u>https://www.hrw.org/report/2020/10/20/new-weapons-proven-precedent/elements-and-models-treaty-killer-robots</u>> accessed 2 March 2025.

<sup>&</sup>lt;sup>89</sup> Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I) (adopted 8 June 1977, entered into force 7 December 1978) 1125 UNTS 3, art 86.

<sup>&</sup>lt;sup>90</sup> Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion) [1996] ICJ Rep 226.

frameworks to apply existing Hague and Geneva laws to autonomous weapons.<sup>91</sup> The challenge, therefore, is not the law's inadequacy but the political will of states to ensure compliance and adaptation.

The selective application of legal norms by powerful States has already diminished the credibility of institutions such as the International Criminal Court (ICC) and the International Court of Justice (ICJ), making it increasingly difficult to establish universal enforcement for regulations on emerging military technologies.<sup>92</sup> Despite this, efforts to regulate do exist. While States are mostly in a deadlock on this topic, there is a possibility for a legally binding instrument on autonomous weapons.<sup>93</sup> The closest the global community has gotten to a regulation is through the ongoing discussions within the Convention on Certain Conventional Weapons (CCW) highlight growing recognition of these threats.<sup>94</sup> However, without strong enforcement mechanisms for binding agreements, States may continue exploiting AI's capabilities outside legal frameworks, leading to a future where warfare is dictated by technological capabilities rather than legal and ethical constraints.

The *Nicaragua v. United States* case emphasized the role of power dynamics in conflicts, serving as both a warning and precedent.<sup>95</sup> The International Court of Justice ruled that the United States' support of the rebel group 'Contras' against the Nicaraguan government violated Article 2(4) of the United Nations Charter and the customary norms.<sup>96</sup> However, the United States ultimately refused to comply with the ruling. Thus, the *Nicaragua* case serves as a critical precedent for understanding the challenges of enforcing international legal rulings against powerful States. This selective adherence to international law raises significant concerns about how States using LAWS in war may evade legal responsibility. In December of 2023, South Africa filed a case at the ICJ, accusing Israel of committing genocidal acts against Palestinians during its military operations in Gaza.<sup>97</sup> The case, brought under the Genocide Convention, seeks to prove

<sup>&</sup>lt;sup>91</sup> Maria Bo, 'Retaining Human Responsibility In Development and Use of AWS' [2022] Stockholm International Peace Research Institute 42 <<u>https://www.sipri.org/sites/default/files/2022-10/2210\_aws\_human\_responsibility.pdf</u>> accessed 23 February 2025.

<sup>&</sup>lt;sup>92</sup> Steven R. Ratner, *The Thin Justice of International Law: A Moral Reckoning of the Law of Nations* (Oxford University Press 2015) 135.

 <sup>&</sup>lt;sup>93</sup> Hitoshi Nasu, 'LAWS Debate at the United Nations: Moving Beyond Deadlock' (Lieber Institute Westpoint, 23 September 20210 <<u>https://lieber.westpoint.edu/laws-debate-united-nations-deadlock/</u>> accessed 23 February 2025.
 <sup>94</sup> Ibid.

<sup>&</sup>lt;sup>95</sup> Military and Paramilitary Activities in and against Nicaragua (*Nicaragua v. United States of America*) [1986] ICJ Rep 14.

<sup>96</sup> Ibid.

<sup>&</sup>lt;sup>97</sup> Mike Corder, 'South Africa's genocide case against Israel sets up a high-stakes legal battle at the UN's top court' (*AP News*, 2 January 2024)< <u>https://apnews.com/article/un-court-south-africa-israel-gaza-genocide-71be2ce7f09bfee05a7cae26689ee262</u> >accessed 12 August 2024.

whether Israel's military actions, including its use of AI-driven weapons, constitute genocide.<sup>98</sup> There is no final decision yet and the hearings are still in progress before the Court reaches a definitive conclusion. While the AI-driven weapons can cause misidentifications that lead to civilian deaths, establishing genocidal intent would require evidence that these tools were intentionally used for that purpose, which remains a high bar under international law.<sup>99</sup> Just as the United States dismissed the ICJ's ruling in *Nicaragua v. U.S.*, Israel is likely to resist adhering to any ruling against it in the *South Africa* case, despite the legal obligations imposed under the Genocide Convention.

In the modern context, the prohibition of unnecessary suffering is particularly relevant in the development and deployment of emerging military technologies, such as LAWS and AI-driven systems.<sup>100</sup> To align with the purpose of LOAC principles, the developing technologies must still comply with the principles set forth in the Hague Conventions. For instance, if these weapons cannot adequately distinguish between combatants and civilians, or if it is designed in a way that causes prolonged or excessive suffering to combatants, it could be considered unlawful under the Hague Conventions. Moreover, Article 35 of Additional Protocol I to the Geneva Conventions is a provision that seeks to limit the means and methods of warfare to those that do not inflict excessive harm or suffering.<sup>101</sup> It refers to harm that is deemed excessive or disproportionate, particularly when there are alternative weapons or methods available that could achieve the same military objective without causing such suffering.<sup>102</sup> This can also include long-lasting or particularly cruel forms of harm, such as weapons that cause lingering injuries or disabilities.<sup>103</sup> This source underpins much of modern IHL, reflecting a commitment to preserving human dignity even in times of war which are inherently incompatible with human dignity.

<sup>98</sup> Ibid.

<sup>&</sup>lt;sup>99</sup> Nimer Sultany, 'A Threshold Crossed: On Genocidal Intent and the Duty to Prevent Genocide in Palestine' [2024] Journal of Genocide Research pp. 4.

<sup>&</sup>lt;sup>100</sup> Esther Chavannes, 'Governing autonomous weapon systems' (*HCSS Security*, 2020) < <u>https://hcss.nl/wp-content/uploads/2021/01/HCSS-Governing-AWS-final.pdf</u>> accessed 24 August 2024.

<sup>&</sup>lt;sup>101</sup> Protocol Additional to the Geneva Conventions of 12 August 1949 and relating to the Protection of Victims of International Armed Conflicts (Protocol I) (adopted 8 June 1977, entered into force 7 December 1978) 1125 UNTS 3, art 35(2). <sup>102</sup> Ibid.

<sup>&</sup>lt;sup>103</sup> Ibid.

Told.

# 3.2 The Real Issue: Compliance and Enforcement

One key issue is the lack of enforcement avenues at the international level, as these laws often rely on States to voluntarily comply or enforce them amongst one another. In many cases, especially during internal or non-international armed conflicts, States may be unwilling or unable to hold violators accountable, particularly when State actors themselves are involved in violations.<sup>104</sup> An example of this can be seen in the Syrian civil war, an internal armed conflict where the Syrian government has been accused of committing widespread violations of IHL including the use of chemical weapons and targeting civilian infrastructure.<sup>105</sup> Despite these accusations, the Syrian government has consistently denied responsibility and has not taken steps to hold its own actors accountable for these violations.<sup>106</sup> In many instances, international bodies, such as the United Nations, have condemned these actions, but the Syrian government, backed by powerful allies like Russia, has been shielded from accountability.<sup>107</sup> Additionally, while international tribunals such as the ICC and ICJ exist, they often lack jurisdiction over conflicts, such as is the case in Gaza, limiting the courts' reach.<sup>108</sup> Political interests and geopolitical considerations frequently hinder international cooperation and enforcement, as powerful States may block investigations or ignore rulings when it conflicts with their strategic objectives.<sup>109</sup>

Non-binding declarations also play an important role in shaping international behavior, even though they lack the bite of treaties or conventions. These declarations often serve as a platform for building consensus and fostering international cooperation on emerging or complex issues.<sup>110</sup> By agreeing to a common set of principles, States can create a shared foundation that may later evolve into more formal and binding agreements by contributing to norm-setting in international relations. Even without legal enforcement, the agreements often influence the expectations and conduct of States, gradually embedding themselves into customary international law if widely followed. Over time, non-binding declarations can therefore have a significant

<sup>&</sup>lt;sup>104</sup> Malcom Shaw, International Law (7<sup>TH</sup> edn, Cambridge University Press 2014) 872.

<sup>&</sup>lt;sup>105</sup> UN Human Rights Council, 'Report of the Independent International Commission of Inquiry on the Syrian Arab Republic' (11 February 2021) UN Doc A/HRC/46/54.

<sup>&</sup>lt;sup>106</sup> UN Security Council, 'Security Council Meeting on Situation in Middle East (Syria)' (9 April 2024) UN Doc SC/15772

<sup>&</sup>lt;sup>107</sup> Anna Borshchevskaya, 'Russia's Strategic Success in Syria and the Future of Moscow's Middle East Policy' (Washington Institute, 13 September 2021) <u>https://www.washingtoninstitute.org/policy-analysis/russias-strategic-success-syria-and-future-moscows-middle-east-policy</u> accessed 2 July 2024.

<sup>&</sup>lt;sup>108</sup> Alan Dershowitz, 'The ICC lacks jurisdiction over Israel in Gaza' (The Hill, 15 May 2024) < <u>https://thehill.com/opinion/international/4664475-the-icc-lacks-jurisdiction-over-israel-in-gaza/</u>> accessed 23 August 2024.
<sup>109</sup> Ibid.

<sup>&</sup>lt;sup>110</sup> UN International Law Commission, 'Report of the International Law Commission on the Work of Its Seventy-Third Session' (2022) UN Doc A/77/10, Annex I.

impact, even if we do not see it now, guiding the behaviour of States and shaping international legal frameworks. In recent events, The Responsible AI in the Military Domain Summit (REAIM) was a high-profile international event held in February 2023 in The Hague, aimed at addressing the ethical, legal, and strategic challenges posed by the use of AI and autonomous technologies in military operations.<sup>111</sup> The summit brought together global leaders, AI experts, and policymakers to discuss how to develop and deploy AI technologies in military contexts responsibly and in compliance with IHL and IHRL.<sup>112</sup> One of the key outcomes of REAIM was the launch of the Political Declaration on Responsible Military Use of AI and Autonomy, which outlines a set of guiding principles to promote transparency, accountability, and ethical oversight in the use of military AI systems.<sup>113</sup> These principles included the need for meaningful human control over autonomous systems, ensuring that humans remain accountable for critical decisions in warfare, particularly when it comes to lethal force situations.<sup>114</sup> The declaration also stressed the importance of developing AI systems in ways that minimize risks, such as bias and unintended harm, while maximizing benefits for security and defence.<sup>115</sup> REAIM proves the global interest in growing role of AI in shaping the future of warfare and the urgent need to address the risks associated with its use.

<sup>&</sup>lt;sup>111</sup> Responsible AI in the Military Domain Summit (*REAIM* 2023) <u>https://reaim2023.org</u> accessed 14 August 2024. <sup>112</sup> Ibid.

<sup>&</sup>lt;sup>113</sup> US Department of State, 'Inaugural Plenary Meeting of States Endorsing the Political Declaration on Responsible Military Use of Artificial Intelligence and Autonomy' (*US Department of State*, 15 February 2023) <u>https://www.state.gov/inaugural-plenary-meeting-of-states-endorsing-the-political-declarationon-responsible-military-use-of-artificial-intelligence-and-</u>

autonomy/ accessed 19 August 2024.

<sup>&</sup>lt;sup>114</sup> Ibid.

<sup>115</sup> Ibid.

# **CHAPTER 4:** FILLING THE GAPS

## Introduction

At this time, there have not been any international tribunals to directly target the asymmetric usage of AI-driven technology in contemporary armed-conflict. However, multiple investigations from groups such as Amnesty International, the United Nations, and Human Rights Watch, have begun looking into war crimes and violations of IHL committed by Israeli and Russian forces. Namely, the ICC, governed by the Rome Statute, has opened investigations on targeted attacks on civilian infrastructure, some of which were guided by AI-assisted drones like the Orlan-10.<sup>116</sup> Russia withdrew its signature from the Rome Statute in 2016 and refuses to recognize the ICC's jurisdiction, making it difficult to hold Russian officials accountable for violations or law.<sup>117</sup> In the case of Israel, AI-driven technologies take the heavy lifting in blame by the IDF for any collateral damage affirmative defense.<sup>118</sup> In the case by Russia, while AI-driven technology is present, it does not take most of the blame as military commanders have been accused of deliberately sending strikes on civilians.<sup>119</sup>

## 4.1 Filling the Gap: Actual Meaningful Human Control

One of the primary ways militaries can ensure that humans retain meaningful control over AI systems in warfare is by incorporating mechanisms that allow for the pausing or overriding of the system's operations. In high-stakes scenarios, AI systems may make decisions that, while logical based on the data provided, could lead to unlawful actions, such as targeting civilians or engaging in disproportionate attacks.<sup>120</sup> The ability to pause the system mid-function provides human operators with the necessary time to assess whether the AI's actions are compliant with

<sup>&</sup>lt;sup>116</sup> Situation in Ukraine: ICC judges issue arrest warrants against Sergei Kuzhugetovich Shoigu and Valery Vasilyevich Gerasimov < <u>https://www.icc-cpi.int/news/situation-ukraine-icc-judges-issue-arrest-warrants-against-sergei-kuzhugetovich-shoigu-and</u>> access 19 July 2024.

<sup>&</sup>lt;sup>117</sup> Shaun Walker, 'Russia withdraws signature from international criminal court statute' (*BBC*, 16 November 2016) < <u>https://www.theguardian.com/world/2016/nov/16/russia-withdraws-signature-from-international-criminal-court-statute</u>> accessed 17 July 2024.

<sup>118</sup> 

<sup>&</sup>lt;sup>119</sup> Veronika Melozerva, 'Russian soldiers deliberately kill Ukrainian kids, new film say' (*Politico*, 21 September 2023) < <u>https://www.politico.eu/article/russia-soldiers-kill-ukraine-children-documentary-</u>

war/#:~:text=Terror%20against%20civilians%20is%20part%20of%20Russian%20military%20strategy%2C%20experts%20say. &text=KYIV%20\_%20Russia's%20army%20has%20killed,February%202022%2C%20Ukrainian%20prosecutors%20say.> accessed 19 August 2024.

<sup>&</sup>lt;sup>120</sup> Rowena Rodrigues, 'Legal and human rights issues of AI: gaps, challenges, and vulnerabilities' [2020] 4 Journal of Responsible Technology

<sup>&</sup>lt; https://www.sciencedirect.com/science/article/pii/S2666659620300056> accessed 24 August 2024.

proper procedure and the law.<sup>121</sup> Without this capability, the system may carry out actions autonomously that humans who are not morally corrupt would otherwise have halted, leading to unnecessary harm or violations of the laws of war. If an AI-driven system identifies a target as a combatant based on certain pre-programmed criteria but the human operator recognizes that the target is, in fact, a civilian or protected person under IHL, the operator must have the authority and ability to override the AI's decision. This would also allow a more clear pathway to accountability of the individual who sent a strike to civilians on their own accord. The design itself of AI systems must, therefore, ensure that humans have both the technical capability and legal authority to intervene when necessary, reinforcing the principle that decisions about life and death in armed conflict must ultimately rest with humans, not machines.<sup>122</sup> As warfare evolves, it is essential that AI systems are designed in a way that preserves this concept.

## 4.2 Filling the Gap: Martens Clause

Ethics, as a reflection of societal values and moral judgments, tend to develop more quickly than legal frameworks, which are often slower to adapt due to formal processes and institutional inertia. When ethical standards change but the law lags behind, there is a risk that the legal system may become outdated or irrelevant in the eyes of those it governs.<sup>123</sup> For laws to remain effective and relevant, they should be periodically revised to reflect progress in society. This is particularly important in rapidly changing fields, such as in military technology, where advancements in robotics and autonomous weapons are moving quickly. However, since there are no specific laws to govern AWS and LAWS with respect to IHL, that is where the Martens Clause comes in. In this context, the Martens Clause, is one way for States and treaty bodies to address the gaps left by existing legal frameworks.<sup>124</sup> While the Clause plays an important role in ensuring that fundamental humanitarian principles continue to apply even in the absence of specific treaty provisions, its ability to fully close these gaps is a matter of critical debate. The narrow interpretation of the Martens Clause, often favored by powerful States, holds that the Clause is of

<sup>&</sup>lt;sup>121</sup> Convention on Certain Conventional Weapons - Group of Governmental Experts on Lethal Autonomous Weapons Systems (10 January 2024) CCW/GGE.1/2024/CRP.1

 <sup>&</sup>lt;sup>122</sup> Human Rights Watch, 'Mind the Gap: The Lack of Accountability for Killer Robots' (*Human Rights Watch*, 9 April 2015) < <a href="https://www.hrw.org/report/2015/04/09/mind-gap/lack-accountability-killer-robots">https://www.hrw.org/report/2015/04/09/mind-gap/lack-accountability-killer-robots</a>> accessed 8 July 2024.
 <sup>123</sup> Natalia Diaz-Rodriguez, 'Conencting the dots in trustworthy artificial intelligence: from AI principles, ethics and key

<sup>&</sup>lt;sup>123</sup> Natalia Diaz-Rodriguez, 'Conencting the dots in trustworthy artificial intelligence: from AI principles, ethics and key requirements to responsible AI systems' [2023] 99 Information Fusion

<sup>&</sup>lt; https://www.sciencedirect.com/science/article/pii/S1566253523002129> accessed 3 July 2024.

<sup>&</sup>lt;sup>124</sup> Bonnie Docherty, 'Banning killer robots: the legal obligations of the martens clause' (*Arms Control Association*, October 2018) https://www.armscontrol.org/act/2018-10/features/remarks-banning-killer-robots-legal-obligations-martens-

clause#:~:text=The%20Martens%20clause%20requires%20in,for%20human%20life%20and%20dignity. accessed 19 July 2024.

limited or minimal significance.<sup>125</sup> This interpretation suggests that the Martens Clause merely reaffirms that High Contracting Parties to treaties remain bound by customary international law, making the Clause somewhat redundant.<sup>126</sup> According to this interpretation, the Clause does not provide any new legal obligations or serve as an independent source of law.

For the sake of the IHL issues with AWS, the broad interpretation of the Martens Clause serves to fill the legal gap. According to this view, the Clause invokes customary international law and works as a standalone legal standard.<sup>127</sup> This interpretation suggests that even if a particular practice is not explicitly prohibited by treaty law, it could still be deemed unlawful under IHL if it violates these broader humanitarian principles. This view has been used, for example, in arguments against the use of AWS. Notably, advanced in the CCW High Contracting Parties meeting in 2022 which argued for a human element to AWS based on the Clause.<sup>128</sup> The Clause was initially introduced to address areas of warfare that had not yet been legally codified, ensuring that, fundamental humanitarian norms would still govern the conduct of hostilities.<sup>129</sup> In essence, the Martens Clause is a legal safety net and a crossroads for ethics in the debate regarding the application of IHL. In an era where technological advancements outpace legal development, the Clause provides a way to ensure that new forms of warfare, such as those involving AWS and LAWS, do not operate in a legal vacuum. In the arguments surrounding autonomous systems, the Clause has been interpreted to mean that human oversight remains necessary to meet these legal and moral standards.<sup>130</sup> The Martens Clause suggests that technologies that cannot respect these human-centred values should be constrained or prohibited, thereby creating a legal and ethical boundary for the use of AWS and LAWS. Furthermore, this gap-filling verbiage of the Martens Clause helps to ensure that AWS and LAWS remain subject to legal accountability to some degree, although it has not been invoked. Specifically, it reads:

<sup>129</sup> Protocol Additional to the Geneva Conventions of 12 August 1949 and relating to the Protection of Victims of International Armed Conflicts (Protocol I) (adopted 8 June 1977, entered into force 7 December 1978) 1125 UNTS 3, art 1(2).

<sup>&</sup>lt;sup>125</sup> Rob Sparrow, 'Ethics as a source of law: the martens clause and autonomous weapons' (*Humanitarian Law & Policy*, 14 November 2017) < <u>https://blogs.icrc.org/law-and-policy/2017/11/14/ethics-source-law-martens-clause-autonomous-weapons/#:~:text=Powerful%20States%20have%20typically%20preferred,governed%20by%20customary%20international%20l aw.> accessed 7 July 2024.</u>

<sup>&</sup>lt;sup>126</sup> Ibid.

<sup>&</sup>lt;sup>127</sup> Ibid.

<sup>&</sup>lt;sup>128</sup> 'Convention on Certain Conventional Weapons - Group of Governmental Experts (2022)' (14 July 2022) CCW/GGE.1/2022/WP.3.

<sup>&</sup>lt;sup>130</sup> Rob Sparrow, 'ethics as a source of law: the martens clause and autonomous weapons' (*ICRC*, 14 November 2017) < <u>https://blogs.icrc.org/law-and-policy/2017/11/14/ethics-source-law-martens-clause-autonomous-weapons/</u>> accessed 3 August 2024.

Until a more complete code of the laws of war has been issued, the High Contracting Parties deem it expedient to declare that, in cases not included in the Regulations adopted by them, the inhabitants and the belligerents remain under the protection and the rule of the law of nations, as they result from the usages established among civilized peoples, from the laws of humanity and the dictates of public conscience.<sup>131</sup>

The interpretation of the Martens Clause is inherently subjective. The dictates of public conscience are not uniform across cultures, legal systems, or even time periods. What one State may consider acceptable or humane may differ greatly from the standards of another. This is similar to the failures of the application of the rules-based order. It is concerning to normalize inconsistent application, especially in the context of rapidly evolving military technologies. States with more advanced AWS capabilities might argue that their systems comply with the principles of humanity, while others might perceive those same systems as violating the spirit of IHL.<sup>132</sup> The Clause, in this sense, offers moral guidance but lacks the bite for legal precision required for regulating highly technical systems. The Martens Clause has been applied to nuclear weapons in the past, opening a gateway for its application against LAWS. In the 1996 ICJ Advisory Opinion on nuclear weapons, the Clause was invoked to argue that nuclear weapons are inconsistent with these humanitarian principles due to their catastrophic effects on civilians and the environment.<sup>133</sup> Since the case studies in Ukraine and Gaza have shown that LAWS operate in ways that result in indiscriminate harm or lack accountability, the Martens Clause could be used to argue that, even in the absence of a comprehensive treaty banning such weapons, their use must be constrained by the principles of humanity and public conscience.

<sup>&</sup>lt;sup>131</sup> Hague Convention (IV) respecting the Laws and Customs of War on Land (adopted 18 October 1907, entered into force 26 January 1910) preamble.

<sup>&</sup>lt;sup>132</sup> Tim McFarland, 'Autonomous weapon systems and IHL compliance: a constrained legal optimization problem' [2024] 12 Journal of Military Studies 75, 78.

<sup>&</sup>lt;sup>133</sup> Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion) [1996] ICJ Rep 226.

## CONCLUSION

As modern warfare increasingly integrates AI, the challenge of applying IHL becomes more pressing. The impact of modern military technologies, including drones, AWS/LAWS, and cyber warfare, on the application and enforcement of IHL is evident. The case studies explored in this research demonstrated that AI in LAWS introduce significant challenges in adhering to core IHL principles like distinction and proportionality. Autonomous systems, particularly those that function without human oversight, complicate the distinction between combatants and civilians. As the case study of Israel's operations in Gaza revealed, thousands of Palestinian civilians were targeted due to algorithmic errors, raising concerns about indiscriminate attacks.<sup>134</sup> The case highlights the urgent need for updated legal frameworks to address the growing reliance on AIdriven decisions in warfare. Unfortunately, geopolitics play a significant role in the challenges facing the failure of rules-based order and the adherence to international law. Major powers selectively adhere to international laws based on strategic interests, leading to inconsistencies in enforcement and erosion of legitimacy. Conflicts, economic sanctions, and military interventions driven by national interests rather than legal principles or human rights weakens the system's credibility. A possible solution is issue-based coalitions, where like-minded States form alliances on specific issues bypassing deadlocked institutions while still upholding international norms. The solution to this issue requires emphasis on the need for a more inclusive, flexible, and enforceable system to mitigate geopolitical disruptions and strengthen global stability. Another potential solution to the accountability vacuum left by AI-driven systems lies in the application of the Martens Clause, which has historically been used to fill gaps in IHL. The Martens Clause emphasizes that even in the absence of specific treaties or laws, military actions must adhere to the principles of humanity and the dictates of public conscience.<sup>135</sup> By applying the Martens Clause to conversations about regulation, the international community may come to the consensus that AI-driven systems must still comply with fundamental human values, even if specific legal provisions do not yet exist. This could serve as a legal and ethical backstop for regulating AWS and LAWS in the absence of concrete laws.

 <sup>&</sup>lt;sup>134</sup> Marwa Fatafta, 'Artificial genocidal intelligence: how Israel is automating human rights abuses and war crimes' (*Access Now*, 9 May 2024) < <u>https://www.accessnow.org/publication/artificial-genocidal-intelligence-israel-gaza/></u> accessed 20 August 2024.
 <sup>135</sup> Bonnie Docherty, 'Banning killer robots: the legal obligations of the martens clause' (*Arms Control Association*, October 2018) https://www.armscontrol.org/act/2018-10/features/remarks-banning-killer-robots-legal-obligations-martensclause#:~:text=The%20Martens%20clause%20requires%20in,for%20human%20life%20and%20dignity, accessed 19 July 2024.

AI advancements in warfare technology also have influenced accountability and the interpretation of IHL. A major finding is the accountability gap created by autonomous systems, due to the sheer fact that they can function with minimal human oversight. At the time of the creation of Hague Laws, Geneva Laws, and the rules-based order, in traditional warfare, accountability is assigned to individuals or States who make decisions about the use of force.<sup>136</sup> The absence of a clear legal framework governing LAWS leaves open the question of whether the responsibility lies with the system's operator, its Big Tech/defense company developer, or the State that deploys it. This gap in responsibility was notably present in the Russia-Ukraine conflict, where Orlan-10 drones were deployed, resulting in civilian casualties due to AI's inability to distinguish between military and civilian targets.<sup>137</sup> The traditional mechanisms of accountability, such as state responsibility (ICJ) and individual responsibility (ICC) were designed post-World War II when mostly humans made the critical decisions. At the core is the dilemma of entrusting life-and-death decisions to machines that lack the moral and ethical judgment that human operators provide. In some instances, as seen in Israel's use of Lavender and Gospel, human operators are relegated to passive supervision, serving as mere stamps of approval for algorithmic decisions.<sup>138</sup> This passive role undermines meaningful human control and makes it easier for humans to defer responsibility to machines.

The introduction of AI into warfare signals a precarious present and future, one in which unchecked State power could undermine the very principles that international law seeks to protect. Only through proactive legal reforms and global cooperation can we ensure that technological progress serves humanity rather than repeating the tragic mistakes of the past. *Fiat justitia ruat caelum*, let justice be done though the heavens fall.

<sup>&</sup>lt;sup>136</sup> Amos N. Guiora, 'Accountability and decision making in autonomous warfare: who is responsible?' [2017] 2 Utah Law Review 393, 404.

<sup>&</sup>lt;sup>137</sup> Samuel Bendett, 'Roles and implications of AI in the Russian Ukrainian conflict' (*CNAS*, 20 July 2023) <<u>https://www.cnas.org/publications/commentary/roles-and-implications-of-ai-in-the-russian-ukrainian-conflict</u>> accessed 24 August 2024.

<sup>&</sup>lt;sup>138</sup> Elidrissi, R. 'How AI tells Israel who to bomb' (*Vox*, 7 May 2024) <<u>https://www.vox.com/videos/24151531/israel-ai-gaza-gospel-lavender</u>> accessed 27 July 2024.