

**Autonomous Weapons Systems &
Accountability:
Rethinking Criminal Responsibility for War
Crimes at the ICC**

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The ongoing development and future deployment of Autonomous Weapons Systems (AWS) has spurred intense debate within the international community. Scholars and global policymakers have recently begun to consider the various legal and logistical ramifications of such weapons systems. However, there is currently no adequate legal framework in place to attribute individual criminal responsibility for the conduct of AWS in armed conflict. The purpose of this research is to explore the problematic nature of attributing individual criminal liability for the actions of AWS, and subsequently evaluate proposals to provide accountability when an AWS commits a war crime. An examination of these proposed accountability schemes, the relevant jurisprudence, and the existing scholarship suggests that legal

mechanisms could be established to effectively attribute criminal responsibility under international criminal law. Accordingly, this paper ultimately advocates for an amendment to the Rome Statute of the International Criminal Court (ICC) to establish individual criminal liability for human agents who deploy AWS that perpetrate war crimes. Support for this amendment is based primarily on the ICC's unique construction as the world's first permanent international criminal tribunal and the success of previous efforts to amend the Rome Statute.

Introduction

While certain artificial intelligence experts and non-governmental organisations (NGOs) have advocated against the development of AWS, other prominent voices highlight the possible benefits of these new technologies.¹ Today,

1. The Future of Life Institute, 'An Open Letter to the United Nations Convention on Certain Conventional Weapons,' (21 August 2017) <<https://futureoflife.org/autonomous-weapons-open-letter-2017>> accessed 28 June 2018; Michael N. Schmitt, 'Unmanned Combat Aircraft Systems (Armed Drones) and International Humanitarian Law: Simplifying the Oft Benighted Debate' (2012) 30 Boston University International Law Journal 595, 599.

countries with advanced technological prowess have already deployed weapons with autonomous targeting capabilities, and others are actively developing fully autonomous weapon systems (AWS).² Due to this trend, international institutions such as the United Nations have begun to examine the impact that AWS will have on international security and the existing legal framework regulating armed conflicts.³ According to Amandeep Gill, the current chair of the United Nations' Convention on Certain Conventional Weapons (CCW) expert body on autonomous weapons systems, the most pressing issues relating to these new technologies include defining and characterising AWS, examining the level of human involvement when deploying lethal AWS, and considering options for future regulations under international law.⁴ The objective of this research is to contextualise the aforementioned issues, and then determine

² UN High Representative for Disarmament Affairs, 'AI for Global Good Summit Plenary 1: State of Play' (7 June 2017) <https://gallery.mailchimp.com/bbc5cfb1d102722bdde24480d/files/fa5294a2-1c2a-4124-bdc3-336c23a85428/HR_AI_summit_remarks_June_2017.pdf> accessed 17 June 2018.

³ CCW 'Report of the 2014 Informal Meeting of Experts on Lethal Autonomous Weapons Systems (LAWS)' (11 June 2014) UN Doc CCW/MSP/2014/3.

⁴ Sono Motoyama, 'Inside the United Nations Effort to Regulate Autonomous Killer Robots: Meet the UN Diplomat Heading up the Coming Killer Robot Conference' *The Verge* (27 August 2018) <<https://www.theverge.com/2018/8/27/17786080/united-nations-un-autonomous-killer-robots-regulation-conference>> accessed 28 August 2018.

how the international community might establish individual accountability for war crimes committed by AWS.

Chapter 1 introduces the subject of AWS and explores the often-vague terminology surrounding their characterisation and classification. In order to provide a more thorough understanding of these technologies, this section discusses the importance of examining AWS through the lens of meaningful human control. The second part of the Chapter provides a historical overview of AWS' development, which centres on technological advances during the past few decades. It also discusses the reality of fully autonomous weapons systems and their deployment in future armed conflicts.

Chapter 2 will analyse the current international legal framework relevant to the AWS. It unpacks key tenets of international humanitarian law, such as the principles of distinction, proportionality, and the obligation to test new means and methods of warfare. This is followed by a brief summary of international criminal law, the prosecution of war crimes, and common criticisms of international tribunals.

Chapter 3 highlights the accountability gap caused by AWS and focuses on the difficulties of attributing individual criminal responsibility for the illicit conduct of AWS. It then transitions to an exploration of proposals made by legal scholars in an attempt to close this accountability gap. The Chapter also examines indirect perpetration and command (or superior) responsibility to demonstrate that modified or new legal regimes can in fact provide accountability for the

conduct of AWS within the existing international legal framework, and specifically at the ICC level.

Chapter 4 builds on the conclusions drawn in Chapter 3 and considers how these proposals could be adopted to effectively prosecute individuals who deploy AWS that commit war crimes. It advocates for an amendment to the Rome Statute of the ICC to accomplish such a goal. This argument, despite its bold nature, is supported by the ICC's unique mechanisms and construction as the world's first permanent international criminal tribunal, and the success of the previous efforts to amend the Rome Statute.

I. Autonomous Weapons Systems (AWS)

i. Terminology

As yet, there is no global consensus on how one defines an AWS, which can be problematic for those who attempt to discuss their international governance and the related individual criminal accountability. In 2016, the United Nations Convention on Certain Conventional Weapons (CCW) established an open-ended Group of Government Experts (GGE) to examine the characterisation of these weapons systems and create a working definition, but they have yet to provide a universally accepted terminology.⁵

⁵ 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 (adopted

Countries such as Switzerland are convinced that the GGE must develop a common understanding and preliminary working definition of AWS before deciding upon acceptable or unacceptable systems.⁶ Others in the GGE delegation respond to this sentiment, stating that the ‘lack of an agreement on definitional matters should not hinder progress on other issues’.⁷ Nonetheless, the autonomous weapons’ expert Paul Scharre argues that ‘without a common lexicon, countries can have heated disagreements talking about completely different things’.⁸ Other academics, like Rebecca Crootof, build on this concern believing that a shared legal definition of autonomy is required in order to allow for a productive conversation about these emerging technologies.⁹

In the absence of an internationally accepted definition on AWS, States and NGOs have taken it upon themselves to classify these systems. Unfortunately, these classification schemes are rather problematic and reductionist in nature. The US Department of Defence has created a three-tiered

10 April 1981, entered into force 2 December 1983) 1342 UNTS 137 (as amended) (CCW); CCW, ‘Report of the 2017 Group of Government Experts on Lethal Autonomous Weapons Systems’ (22 December 2017) UN Doc CCW/GGE.1/2017/3 1,7.

⁶ CCW, ‘A Compliance-Based Approach to Autonomous Weapon Systems –Working Paper Submitted by Switzerland’ (10 November 2017) UN Doc CCW/GGE.1/2017/WP.9 6-7.

⁷ UN Doc CCW/GGE.1/2017/3 (n 5) 2.

⁸ Paul Scharre, *Army of None: Autonomous Weapons and the Future of War* (W.W. Norton & Company 2018) 347.

⁹ Rebecca Crootof, ‘The Killer Robots Are Here: Legal and Policy Implications’ (2015) 36 *Cardozo Law Review* 1837, 1843.

classification scheme that specifies “autonomous weapons systems” as weapon systems that ‘once activated, can select and engage targets without further intervention by a human operator’.¹⁰ A “human-supervised autonomous weapon systems” refers to a weapon system ‘that is designed to provide human operators with the ability to intervene and terminate engagements’.¹¹ Lastly, a “semi-autonomous weapon system” is one that is ‘intended to only engage individual targets or specific target groups that have been selected by a human operator’.¹² On one hand, some argue these definitions are useful because they include the words “once activated”, demonstrating that humans are the original decision makers when deploying AWS.¹³ Michael N. Schmitt and Jeffrey S. Thurnher, in their work “Out of the Loop: Autonomous Weapon Systems and the Law of Armed Conflict”, maintain that even a fully autonomous weapon system is not completely human-free because someone, either an operator or designer, must decide to programme and deploy that particular weapon system.¹⁴ On the other hand, scholars such as Dan Saxon have criticised the US

¹⁰ United States Department of Defence (DoD) Directive 3000.09. ‘Autonomy in Weapon Systems’ (21 November 2012) 13-14 <www.dtic.mil/whs/directives/corres/pdf/300009p.pdf> accessed 20 June 2018.

¹¹ *ibid* 14.

¹² *ibid* 14.

¹³ Crootof (n 9) 1847.

¹⁴ Michael N. Schmitt and Jeffrey S. Thurnher, ‘Out of the Loop: Autonomous Weapon Systems and the Law of Armed Conflict’ (2013) 4 *Harvard National Security Journal* 231, 235.

Department of Defence classification scheme because of its vague construction and lack of focus on human supervisory control or responsibility.¹⁵

Unlike the US Department of Defence, Human Rights Watch has categorised AWS with a greater focus on their degree of autonomy, or respective level of human control.¹⁶ For example, “human-in-the-loop” refers to a system where a human operator must select and attack a target, “human-on-the-loop” is a system that selects and engages the target with human oversight, and “human-out-of-the loop” is a system that can target and attack with no human oversight.¹⁷ Unfortunately, this classification system is equally problematic because the current defensive systems, including the French Shark or the Dutch Goalkeeper, provide extremely short windows for operators to terminate an engagement making it inaccurate to define these systems as truly “human-in-the-loop”.¹⁸ Furthermore, some of these types of weapons

¹⁵ Dan Saxon, ‘A Human Touch: Autonomous Weapons, DoD Directive 3000.09 and the Interpretation of Appropriate Levels of Human Judgment Over the Use of Force’ in Nehal Bhuta, Susanne Beck, Robin Geib, Hin-Yan Liu and Claus Kreb (eds), *Autonomous Weapons Systems: Law, Ethics, Policy* (Cambridge University Press 2016) 185, 200-202.

¹⁶ Human Rights Watch, *Losing Humanity: The Case Against Killer Robots* (19 November 2012)

<<https://www.hrw.org/report/2012/11/19/losing-humanity/case-against-killer-robots>> accessed 2 July 2018.

¹⁷ *ibid.*

¹⁸ Paul Scharre and Michael C. Horowitz, ‘An Introduction to Autonomy in Weapon Systems’ CNAS Working Paper (Center

systems simply react to triggers, as opposed to selecting amongst a number of potential targets, and should be considered “automated” rather than “autonomous” systems.¹⁹ It is for these reasons that scholars like Noel Sharkey argue that an appropriate classification of AWS should ‘reframe autonomy in terms of the type and quality of human control afforded by the different types of computerised weapons systems’.²⁰ Sharkey is indeed convinced this would assist in the proper allocation of responsibility of AWS.²¹

It is clear that the international legal community has a long way to go before reaching a universally accepted and commonly understood classification scheme for AWS. However, this lack of consensus might also provide the United Nations with an opportunity to properly characterise these technologies and ensure they fit within the existing international legal framework. For the purposes of this paper, I will utilise the term “autonomous weapons system”, as adopted by Rebecca Crootof, to signify a weapons’ system that, ‘based on conclusions derived from gathered

for a New American Security 2015) 12-13.

<https://www.files.ethz.ch/isn/188865/Ethical%20Autonomy%20Working%20Paper_021015_v02.pdf> accessed 1 July 2018.

¹⁹ Crootof (n 9) 1855.

²⁰ Noel Sharkey, ‘Staying in the Loop: Human Supervisory Control of Weapons’ in Nehal Bhuta, Susanne Beck, Robin Geib, Hin-Yan Liu and Claus Kreb (eds), *Autonomous Weapons Systems: Law, Ethics, Policy* (Cambridge University Press 2016) 23, 26.

²¹ *ibid* 23.

information and preprogrammed constraints, is capable of independently selecting and engaging targets'.²² This definition provides clarity to many of the aforementioned ambiguities and problematic classification schemes, including the autonomous vs. automatic distinction. In addition, this terminology provides a starting point to consider the ramifications of deploying AWS that commit war crimes and the problematic nature of attributing individual criminal liability.

ii. Historical Development of AWS

The means and methods of warfare have undergone a dramatic transformation within the past few decades. By tracing the historical development of AWS, one can confidently claim that these technologies have moved from the realm of science fiction to become a permanent fixture of modern armed conflict. It is important to understand the development of these new technologies to truly appreciate the impact they will have on battlefields and the related need to discuss their international governance. According to TY McCormick, there have been rapid scientific advancements in the fields of machine learning and robotic warfare since World War II.²³ McCormick further notes how the Cold War

²² Crootof (n 9) 1854.

²³ TY McCormick, 'Lethal Autonomy: A Short History' *Foreign Policy* (24 January 2014)

<<https://foreignpolicy.com/2014/01/24/lethal-autonomy-a-short-history/>> accessed 4 July 2018.

tensions in the 1960s prompted the United States to fund universities such as the Massachusetts Institute of Technology with millions of dollars to begin researching 'machine-aided cognition'.²⁴ In the following decade, the United States deployed laser guided "smart" missiles and unmanned aerial surveillance vehicles during the second half of the Vietnam War.²⁵ By the late 1980s, the United States introduced to the Middle East the Aegis air-defence, which could target and engage aircraft on a semi-automatic setting.²⁶ Remotely operated drone warfare, automatic sentry systems, and semi-automatic or "on-the-loop" weapon systems have been commonly employed by a number of modern militaries since the beginning of the 21st century.²⁷ For instance, South Korea has installed the Samsung Techwin SGR-A1 weapon system along the border with North Korea, equipped with autonomous tracking and targeting capabilities, despite currently requiring human approval.²⁸

In contrast to the aforementioned weapon systems, most agree that the technology to produce fully autonomous

²⁴ *ibid.*

²⁵ *ibid.*

²⁶ *ibid.*

²⁷ McCormick (n 23).

²⁸ Vincent Boulanin & Maaike Verbruggen, 'Mapping the Development of Autonomy in Weapon Systems' Stockholm International Peace Research Institute (November 2017) 45-46 <https://www.sipri.org/sites/default/files/2017-11/siprireport_mapping_the_development_of_autonomy_in_weapon_systems_1117_1.pdf> accessed 29 July 2018.

weapon systems on the far end of the autonomy continuum does not yet exist.²⁹ Nevertheless, both critics and proponents of these weapon systems agree that their development has already begun.³⁰ According to the Stockholm International Peace Research Institute, the United States has the ‘most visible, articulated and perhaps successful military research and development (R&D) efforts on autonomy’.³¹ This seems to have prompted other countries such as Russia and China to focus their efforts on machine learning and the development of AWS.³² Many within the field, such as James Barret, describe the development of artificial intelligence as a competition with a first-mover advantage.³³

The United States Department of Defence Unmanned Systems Integrated Roadmap FY2011-2036 states that lethal force will remain under human control in unmanned systems for the foreseeable future.³⁴ Notwithstanding, this same document notes that the Department of Defence plans to

²⁹ Tyler D. Evans, ‘At War with the Robots: Autonomous Weapon Systems and the Martens Clause’ (2013) 41 Hofstra Law Review 697, 706.

³⁰ *ibid* 709.

³¹ Boulanin & Verbruggen (n 28).

³² *ibid*.

³³ James Barrat, *Our Final Invention: Artificial Intelligence and the End of the Human Era* (Thomas Dunne Books 2013) 11.

³⁴ United States Department of Defence (DoD), *Unmanned Systems Integrated Roadmap FY2011-2036* (2011) 16-17 <<https://fas.org/irp/program/collect/usroadmap2011.pdf>> accessed 17 June 2018.

gradually reduce the degree of human control required.³⁵ In addition, as indicated by the AWS expert Ted W. Schroder, the US Secretary of Defence signed the 3000.09 Directive on autonomy with a sunset clause, dictating that the Directive and its components will expire in 2022.³⁶ Schmitt and Thurnher are convinced that the official policy of keeping a “human-in-the-loop” for the deployment of lethal force will likely change due to operational realities.³⁷ This is largely due to the myriad of logistical and political incentives to introduce increasingly autonomous weapon systems to the battlefield.³⁸ These weapon systems act as a force multiplier, which can lead to a more efficient fighting force while simultaneously reducing casualties by removing human soldiers from the battlefield.³⁹ In fact, scholars like William H. Boothy maintain that certain technological advances such as the invention of precision munitions can be used to address humanitarian concerns conferring both military and

³⁵ *ibid* 14.

³⁶ Ted W. Schroeder, *Lethal Autonomous Weapon Systems in Future Conflicts* (Schroeder 2017) 59.

³⁷ Schmitt and Thurnher (n 14) 237.

³⁸ Crootof (n 9) 1865-1866.

³⁹ Amitai Etzioni and Oren Etzioni, ‘Pros and Cons of Autonomous Weapons Systems’ (May-June 2017) *Military Review* 72, 73-74
 <<https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/May-June-2017/Pros-and-Cons-of-Autonomous-Weapons-Systems/>> accessed 17 August 2018.

humanitarian benefits during armed conflict.⁴⁰ These technologies represent a paradigm shift that will ultimately transform our conception of modern warfare. As a result, the international community must consider the consequences of this shift and evaluate how AWS will fit into the international legal framework regulating armed conflict.

II. International Legal Framework

i. International Humanitarian Law & Compliance

In order to discuss liability for war crimes committed by AWS, it is necessary first to analyse a number of international humanitarian law principles, since individual criminal accountability for war crimes is directly relevant to this field. International humanitarian law is a body of international law that seeks to limit the means and methods of warfare and protect civilians during armed conflict.⁴¹ It was established by the International Committee of the Red Cross in 2014 that autonomous weapons systems fall within the realm of international humanitarian law, but that additional

⁴⁰ William H. Boothy, *Weapons and the Law of Armed Conflict* (2nd edn, Oxford University Press 2016) 358-359.

⁴¹ Hortensia D. T. Gutierrez Posse, 'The Relationship between International Humanitarian Law and International Criminal Tribunals' (2006) 88(861) *International Review of the Red Cross* 65

<https://www.icrc.org/eng/assets/files/other/irrc_861_gutierrez.pdf> accessed 3 August 2018.

codification was required to adequately regulate these new weapons systems.⁴² However, the most pressing concern for the development and deployment of any novel weapon is whether that technology is inherently unlawful under international humanitarian law.⁴³ The outcome of this debate will greatly impact any framework relating to accountability for the conduct of AWS.

According to the AWS expert Jeffrey S. Thurnher, one can begin to substantiate the legality of an AWS by determining whether it is indiscriminate by nature.⁴⁴ The prohibition on weapons indiscriminate by nature, as per Article 51(4)(b) of the Additional Protocol I of the Geneva Convention, forbids the deployment of a weapon that cannot ensure that an attack can be directed at a specific military objective as opposed to civilians or civilian objects.⁴⁵ Although commentators have

⁴² International Committee of the Red Cross, 'Autonomous Weapon Systems: Technical, Military, Legal, and Humanitarian Aspects' Expert Meeting Report Geneva, Switzerland (March 2014) 20-21.

⁴³ Yoram Dinstein, *The Conduct of Hostilities under the Law of International Armed Conflict* (3rd edn, Cambridge University Press 2016) 99-100.

⁴⁴ Jeffrey S. Thurnher, 'The Law That Applies to Autonomous Weapons Systems' (2013) 17(4) ASIL Insights <<https://www.asil.org/insights/volume/17/issue/4/law-applies-autonomous-weapon-systems>> accessed 2 June 2018.

⁴⁵ Additional Protocol to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (adopted 12 December 1977, entered into force 7 December 1978) 1125 UNTS 3 (Additional Protocol I) Art 51(4).

argued that machine learning is not adequate for this type of decision making,⁴⁶ Thurnher states that an AWS would not be incompatible with this requirement if supplied 'with sufficiently reliable and accurate data'.⁴⁷ Moreover, the AWS would be precluded from causing unnecessary suffering and superfluous injury, which Thurnher notes is rooted in customary international law.⁴⁸ Accordingly, as evidenced by Emily Crawford and Alison Pert, most weapons treaties are based on a principle that forbids means or methods of warfare that result in 'injury against combatants greater than that strictly necessary to achieve the military objectives, which uselessly aggravate the suffering of wounded personnel, or otherwise render their death inevitable'.⁴⁹ Here, it is important to recognise that this prohibition pertains solely to what Scharre refers to as 'the mechanism of injury',⁵⁰ suggesting that an AWS would only infringe this principle if supplied with certain munitions. In order to determine whether the AWS is compatible with the two regulations above, a State must engage in a thorough legal review as mandated by Article 36 of Additional Protocol I.⁵¹

⁴⁶ Peter Asaro, 'On Banning Autonomous Weapon Systems: Human Rights, Automation, and the Dehumanization of Lethal Decision-Making' (2012) 94 (2012) *International Review of the Red Cross* 687, 697-670.

⁴⁷ Thurnher (n 44).

⁴⁸ *ibid.*

⁴⁹ Emily Crawford & Alison Pert, *International Humanitarian Law* (Cambridge University Press 2015) 45.

⁵⁰ Scharre (n 8) 258.

⁵¹ Thurnher. (n 44); Additional Protocol I (n 45) Art 36.

If an AWS is able to satisfy the aforementioned criteria, it will still face challenges in terms of targeting. The cardinal principles of international humanitarian law relevant to AWS targeting are those of distinction and proportionality.⁵² The principle of distinction requires militaries to differentiate between combatants and civilians; it forbids the intentional targeting of the latter and requires attacks to only be made against military objects and objectives.⁵³ A pressing issue for AWS deployment is whether they can be programmed to properly make such distinction, as artificial intelligence can fall victim to ‘fooling image’ attacks that occur when legitimate military targets attempt to blend into their environment.⁵⁴ Moreover, the principle of proportionality also presents problems for AWS, as a violation of this principle takes place when ‘an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated’.⁵⁵ This principle allows for some collateral civilian casualties and is only violated when this collateral or incidental damage outweighs the specific military advantage.⁵⁶ This balancing is not an exact science and will involve what Pablo Kalmanovitz refers to as ‘hard,

⁵² International Committee of the Red Cross (n 42) 21-22.

⁵³ Crawford and Pert (n 49) 42; Additional Protocol I (n 45) Art 48.

⁵⁴ Scharre (n 8) 253.

⁵⁵ Protocol I (n 45) Art 51(5)b.

⁵⁶ Crawford and Pert (n 49) 45.

indeed incalculable, choices'.⁵⁷ Paul Scharre acknowledges that an AWS might comply with this principle if deployed in remote areas with few citizens, but the reality of modern combat would likely require the AWS to engage in a 'complex moral reasoning' that would be difficult to program and automate.⁵⁸

ii. International Criminal Law & War Crime Prosecution

Many in the field, especially those from military backgrounds such as P.W. Singer, are convinced that AWS will eventually be introduced in armed conflicts.⁵⁹ Moreover, nearly all experts agree that there will not be a ban on AWS and that existing law will be utilised in order to regulate their usage.⁶⁰ Taking that into consideration, this paper focuses not solely on the possible prohibition of AWS under international humanitarian law, but instead speculates on the ramifications of the legal consequences for individuals who commit

⁵⁷ Pablo Kalmanovitz, 'Judgment, Liability and the Risks of Riskless Warfare' in Nehal Bhuta, Susanne Beck, Robin Geib, Hin-Yan Liu and Claus Kreb (eds), *Autonomous Weapons Systems: Law, Ethics, Policy* (Cambridge University Press 2016) 145, 149.

⁵⁸ Scharre (n 8) 256.

⁵⁹ P.W. Singer, 'Special Report: Autonomous Weapons are a Game-Changer' *The Economist* (25 January 2018) <<https://www.economist.com/special-report/2018/01/25/autonomous-weapons-are-a-game-changer>> accessed 22 June 2018.

⁶⁰ Boothy (n 40) 252.

international crimes through the deployment of AWS that are not illegal *per se*.

States or international criminal tribunals may prosecute individuals if they commit what are considered grave breaches of international humanitarian law.⁶¹ International criminal law is a unique branch of public international law, closely intertwined with international human rights law and international humanitarian law.⁶² It deals with the individual criminal responsibility of those who have committed such serious violations, often referred to as international crimes.⁶³ There is no universal definition of “international crime”, instead, four core crimes have been identified within international law.⁶⁴ These are commonly designated to be genocide, war crimes, crimes against humanity, and the crime of aggression.⁶⁵ War crimes, which will be the singular focus of this research, are serious violations of the law of armed conflict.⁶⁶ They are identified in either customary international law or international instruments such as the Geneva Conventions.⁶⁷ There has been significant effort to

⁶¹ Gutierrez Posse (n 41) 65.

⁶² Roger O’Keefe, *International Criminal Law* (1st edn, Oxford University Press 2015) 49.

⁶³ *ibid*.

⁶⁴ *ibid* 47.

⁶⁵ *ibid* 62-63.

⁶⁶ *ibid* 62.

⁶⁷ Geneva Convention Relative to the Protection of Civilian Persons in Time of War (adopted 12 1949, entered into force 21 October 1950) 75 UNTS 973 (Geneva IV); International Committee of the Red Cross, ‘War Crimes Under the Rome

define and codify these crimes since the Nuremberg Trials following World War II.⁶⁸ Originally, Article 6(b) of the 1945 Charter of the International Military Tribunal, also known as the London Charter, specified a number of acts to constitute war crimes, including murder and the killing of hostages.⁶⁹ Yoram Dinstein notes that the Nuremberg Judgment of the International Military Tribunal would also recognise more war crimes under international law, adding that the violations enumerated in Article 6(b) did not represent a comprehensive list of crimes.⁷⁰ The most modern war crime definition is referenced in Article 8(2) of the Rome Statute of the International Criminal Court.⁷¹ The Rome Statute, enforced in 2002, represents the first successful establishment of a permanent international tribunal that has the ability to prosecute individuals who have committed serious international crimes.⁷²

Statute of the International Criminal Court and their Source in International Humanitarian Law –Table’ Legal Factsheet (31 October 2012).

⁶⁸ Dinstein (n 43) 298-299.

⁶⁹ Charter of the International Military Tribunal – Annex to the Agreement for the Prosecution and Punishment of the Major War Criminals of the European Axis Art (adopted 8 August 1945, entered into force 8 August 1945) 82 UNTS 279 (London Charter) Art 6(b).

⁷⁰ Dinstein (n 43) 299; *Judgment of the Nuremberg International Military Tribunal 1946*, (1947), 41 AJIL 172, 218.

⁷¹ Rome Statute of the International Criminal Court (adopted 17 July 1998, entered into force 1 July 2002) 2187 UNTS 3 (Rome Statute) Art 8(2).

⁷² O’Keefe (n 62) 529.

However, the prosecution of international crimes such as war crimes is not a simple endeavour; this is especially true for the prosecution of war crimes before the International Criminal Court and the ad hoc tribunals such as the International Criminal Tribunal for Yugoslavia (ICTY) and the International Criminal Tribunal for Rwanda (ICTR).⁷³ In fact, these tribunals have all been criticised as expensive, inefficient, and marred by political bias.⁷⁴ For example, ad hoc tribunals have consistently gone beyond their timelines and required hundreds of millions of dollars to initially establish and continue to operate.⁷⁵ The ICC alone has costed over 1 billion dollars during its first 12 years of operation, and resulted in only two convictions.⁷⁶ The ICTR and ICTY have seen similar issues in that they have only been able to prosecute a few individuals.⁷⁷ This is largely because war

⁷³ Sandra L. Hodgkinson, 'Are Ad Hoc Tribunals an Effective Tool for Prosecuting International Terrorism Cases' (2010) 24 *Emory International Law Review* 515.

⁷⁴ *ibid* 521.

⁷⁵ UN International Residual Mechanism for Criminal Tribunals, 'The Cost of Justice' ICTY (2016)

<<http://www.icty.org/en/about/tribunal/the-cost-of-justice>> accessed 23 August 2018.

⁷⁶ David Davenport, 'International Criminal Court: 12 Years, \$1 Billion, 2 Convictions' *Forbes* (12 March 2014)

<<https://www.forbes.com/sites/daviddavenport/2014/03/12/international-criminal-court-12-years-1-billion-2-convictions-2/#3b256ef24053>> accessed 3 July 2018.

⁷⁷ Richard Dicker and Elise Keppler, 'Beyond the Hague: Challenges of International Justice' in *Human Rights Watch* 2004, 9-10

crimes are collective in nature and often involve a great deal of convoluted evidence that needs to be organised and put into a coherent strategy by the prosecutorial team.⁷⁸ Moreover, these trials are conducted far away from the crime scene and gathering evidence can be complicated by political pressures.⁷⁹

III. Proposals for Individual Accountability

i. The Accountability Gap

The attribution of individual criminal responsibility and the prosecution of war crimes under international criminal law becomes increasingly convoluted when AWS are introduced to the equation. The UN Special Rapporteur Christof Heyns has acknowledged that a vast number of individuals could possibly be held legally responsible for the illicit conduct of an AWS, including those who sell the hardware or the political leaders that authorise deployment.⁸⁰ However, he also acknowledges that ‘if everyone is responsible, then no one is’, and claims that this uncertainty may ultimately

<<https://www.hrw.org/legacy/wr2k4/download/10.pdf>>
accessed 4 June 2018.

⁷⁸ *ibid.*

⁷⁹ *ibid.*

⁸⁰ OHCHR, ‘Report of the Special Rapporteur Christof Heyns on extrajudicial, summary or arbitrary executions’ (2013) UN Doc. A/HRC/23/47, para 77

widen the accountability gap.⁸¹ Moreover, a myriad of organisations, such as Human Rights Watch and the Harvard Law School’s International Human Rights Clinic, are convinced that AWS ‘would create an accountability gap because it would be difficult to hold anyone responsible for the unforeseen harm caused by an autonomous robot’.⁸² In their 2012 report “Losing Humanity: Case Against Killer Robots”, Human Rights Watch cites the arguments made by Robert Sparrow to dismantle the possibility of establishing responsibility – primarily because autonomous weapons systems act ‘autonomously’ and therefore qualify as moral agents.⁸³ Thus, neither the commander, the programmer, nor the manufacturer of the AWS could be assigned legal responsibility for the unlawful acts committed by the AWS in a fair and effective way.⁸⁴ Human Rights Watch followed this report with a 2015 publication entitled “Mind the Gap” that builds on its previous assertions to claim that ‘existing mechanisms for legal accountability are ill suited and inadequate to address the unlawful harms fully autonomous

⁸¹ Christof Heyns, ‘Autonomous Weapons Systems: Living a Dignified Life and Dying a Dignified Death’ in Nehal Bhuta, Susanne Beck, Robin Geib, Hin-Yan Liu and Claus Kreb (eds), *Autonomous Weapons Systems: Law, Ethics, Policy* (Cambridge University Press 2016) 3, 13

⁸² Human Rights Watch, *Heed the Call: A Moral and Legal Imperative to Ban Killer Robots* (21 August 2018) <<https://www.hrw.org/report/2018/08/21/heed-call/moral-and-legal-imperative-ban-killer-robots>> accessed 2 September 2018

⁸³ Human Rights Watch, *Losing Humanity*: (n 16)

⁸⁴ *ibid.*

weapons might commit'.⁸⁵ In addition, the organisation is convinced that entirely new legal regimes would not be able to ensure accountability as enshrined by international humanitarian law and international human rights law.⁸⁶

In response to these arguments, a variety of scholars and AWS experts have come to challenge Human Rights Watch and reframe the debate on accountability. For instance, Schmitt and Thurnher criticise the assertions made in "Losing Humanity" by noting that humans can remain accountable for the conduct of an AWS even as these technologies become increasingly autonomous; because the legal responsibility for their use will remain with those who decide to deploy such systems as enshrined by the law of armed conflict.⁸⁷ They follow by stating that 'any recklessness or criminal misuse will result in accountability through the same war crimes mechanisms that already exist',⁸⁸ but refuse to mention the current inefficiencies of existing mechanisms or inherent unpredictability of such weapons systems. Others such as Dunlap have gone on to criticise the "Mind the Gap" report as an unproductive effort to establish something inherent about AWS that frustrates accountability for their actions—

⁸⁵ Human Rights Watch, *Mind the Gap: The Lack of Accountability for Killer Robots* (9 April 2015)

<<https://www.hrw.org/report/2015/04/09/mind-gap/lack-accountability-killer-robots>> accessed 6 July 2018.

⁸⁶ *ibid.*

⁸⁷ Schmitt and Thurnher (n 14) 280.

⁸⁸ *ibid.*

described by the author to be 'simply untrue'.⁸⁹ Dunlap points to particular elements of the report, including its assertion that criminal liability would only apply where humans had the blatant intention of utilising an AWS to commit international crimes, and dismantles them by presenting evidence of criminal liability imposed in the absence of intention, with particular reference to US Military law.⁹⁰

Although some have criticised Human Rights Watch for discussing AWS in an overly alarmist or imprecise manner, even these critics note the importance of discussing accountability for AWS in the absence of blatant intentionality.⁹¹ The debate and discussions surrounding AWS are relatively new; yet there are a number of legal scholars who have directly challenged the notion that new or modified legal regimes would be unable to ensure accountability. Through their respective scholarship, Nena Jain, Peter Margulies, and Jens David imagine new frameworks for individual responsibility and examine how traditional doctrines and legal mechanisms can be adapted to close the theoretical accountability gap.

⁸⁹ Charles J. Dunlap Jr., 'Accountability and Autonomous Weapons: Much Ado About Nothing?' (2016) 30 *Temple International & Comparative Law Journal* 63, 75-76.

⁹⁰ *ibid* 71-73.

⁹¹ Schmitt and Thurnher (n 14) 276-277.

ii. Indirect Perpetration

International criminal law has numerous modes of liability that could provide adequate accountability for the conduct of AWS. However, one of the most convincing arguments for providing accountability is that an individual could be liable through the doctrine of indirect perpetration. Professor Jens David Ohlin expands upon this proposition in his work “The Combatant’s Stance: Autonomous Weapons on the Battlefield”, where he argues that indirect perpetration enables military commanders to ‘be held responsible for perpetrating war crimes through an AWS regardless of the moral status of the AWS as a culpable or non-culpable agent’.⁹² According to Ohlin, the relevant framework for AWS liability was first articulated at the Nuremberg Trials when international criminal law involved modes of liability ‘designed for convicting those who indirectly perpetrate war crimes through a machine or organised apparatus of power’.⁹³ Ohlin references the Israel Supreme Court’s conviction of Adolf Eichmann to demonstrate how a commander was prosecuted for war crimes through the deployment of massive bureaucratic or social machinery; he then points to the development of the *Organisationsherrschaft* doctrine, known as indirect perpetration through an

⁹² Jens David Ohlin, ‘The Combatant’s Stance: Autonomous Weapons on the Battlefield’ (2016) 92 *International Law Studies* 1, 3.

⁹³ *ibid* 2-3.

organised apparatus of power, to effectively draw a parallel to the assignment of responsibility for AWS.⁹⁴

As articulated by Neha Jain, indirect perpetration involves the recognition of various instances in criminal law ‘where the immediate agent who most directly realises the elements of the offence is “autonomous” in the material sense, but for whose conduct another (human agent) can still be held responsible’.⁹⁵ In essence, one can be held criminally responsible by acting through another person or, in this case, through a system as the chain of causation and the *mens rea* element of the offence is traced back to a final human agent.⁹⁶ Article 25(3)a of the Rome Statute outlines varying modes of assigning individual criminal liability, specifying that a person shall be criminally responsible and liable when they commit a crime ‘whether as an individual, jointly with another or through another person, regardless of whether that other person is criminally responsible’.⁹⁷ Accordingly, the current conception of acting through a “person”, as specified by Article 25(3)a of the Rome Statute, would need to

⁹⁴ *ibid* 8; *Attorney General of the Government of Israel v Adolf Eichmann*, 36 International Law Reports 1968, 331-334.

⁹⁵ Neha Jain, ‘Autonomous Weapons Systems: New Frameworks for Individual Responsibility’ in Nehal Bhuta, Susanne Beck, Robin Geib, Hin-Yan Liu and Claus Kreb (eds), *Autonomous Weapons Systems: Law, Ethics, Policy* (Cambridge University Press 2016) 303, 307-308.

⁹⁶ *ibid* 307-309.

⁹⁷ Rome Statute, (n 71) Art 25(3)a.

be expanded to include AWS for the proper application of this doctrine.⁹⁸

iii. Command & Superior Responsibility

A second proposal to provide accountability for war crimes committed by AWS is the doctrine of command or superior responsibility. It stipulates that a person in command is responsible for the crimes committed by subordinates, pending the presence of certain conditions.⁹⁹ There is a dual nature to this doctrine as the person in command is both directly responsible for not exercising control of their forces and failing to prevent the commission of a crime, and indirectly liable for the actual crime committed by the subordinate.¹⁰⁰ Due to this construction, command or superior responsibility is often represented as both a mode of liability or a separate offence in and of itself.¹⁰¹ Regardless of the characterisation, the doctrine requires the existence of a superior-subordinate relationship with control, sufficient

⁹⁸ Ohlin (n 92); Jain (n 95).

⁹⁹ Peter Margulies, 'Making Autonomous Weapons Accountable: Command Responsibility for Computer-Guided Lethal Force in Armed Conflict' in Jens David Ohlin (eds), *Research Handbook on Remote Warfare* (Edward Elgar Press 2016) 405.

¹⁰⁰ Kai Ambos, 'Joint Criminal Enterprise and Command Responsibility' (2007) 5 *Journal of International Criminal Law* 159, 176.

¹⁰¹ Elies van Sliedregt, 'Article 28 of the ICC Statute: Mode of Liability and/or Separate Offense?' (2009) 12 *New Criminal Law Review* 420.

mens rea, and an omission on the part of the commander.¹⁰² As seen in the ICC's *Prosecutor v Jean-Pierre Bemba Gombo* case,¹⁰³ international law recognises that the accused must exercise control over the crime, which is evaluated on a case-by-case basis.¹⁰⁴

This proposal of utilising command responsibility for AWS has received considerable attention amongst academics as command responsibility would target those most responsible for sanctioning the use of such weapons.¹⁰⁵ Professor Peter Margulies, in his work "Making Autonomous Weapons Accountable: Command Responsibility for Computer-Guided Lethal Force in Armed Conflicts", argues that the doctrine of command responsibility can be used to fill the AWS accountability gap.¹⁰⁶ He states that 'a human in command should have responsibility for autonomous decisions, just as a commander is currently held responsible for an unreasonable failure to prevent a subordinate's IHL

¹⁰² Jain (n 95) 310-311.

¹⁰³ *Prosecutor v. Jean Pierre Bemba Gombo* (Bemba), case no. ICC-01/05-01/08, Decision pursuant to Article 61(7)(a) and (b) of the Rome Statute on the charges of the prosecutor against Jean-Pierre Bemba Gombo (Pre-Trial Chamber II, 15 June 2009).

¹⁰⁴ O'Keefe (n 62) 180-181; Jain, (n 95) 311; *Prosecutor v. Jean-Pierre Bemba Gombo* ICC-01/05-01/08, Judgment pursuant to Article 74 of the Statute (ICC Trial Chamber, 26 March 2016), para 183, 188-189.

¹⁰⁵ Stephen E. White, 'Brave New World: Neurowarfare and the Limits of International Humanitarian Law' (2008) 41(1) *Cornell International Law Journal* 177, 209-210.

¹⁰⁶ Margulies (n 99) 406-408.

violations'.¹⁰⁷ In essence, the author suggests that an AWS should be considered as a subordinate soldier, who the commander would have effective control over irrespective of whether the respective military command structure embraces what Margulies calls 'dynamic diligence'.¹⁰⁸ Margulies argues that the doctrine, if modified, could assist in the prosecution of war crimes because 'one could interpret command responsibility as making the interpretability of an AWS's outputs or the presence of a dynamic temporal parameter substantive components of the commander's duties'.¹⁰⁹ In other words, while the prosecution would ultimately bear the burden of proof, an international tribunal could consider a commander's failure to provide 'interpretable and transparent' information on the AWS as evidence of a violation.¹¹⁰

As indirect perpetration is immune from the confusion caused by varying conceptions of human agency and robot autonomy,¹¹¹ command or superior responsibility enables one to effectively resolve the issue of control over AWS and their unpredictability. Human Rights Watch contends that AWS are inherently unpredictable and that 'a commander would not always have the sufficient reason or technological knowledge' to either anticipate or prevent an unlawful act.¹¹²

¹⁰⁷ *ibid.*

¹⁰⁸ *ibid.*

¹⁰⁹ Margulies (n 99) 437-440.

¹¹⁰ *ibid.*

¹¹¹ Jain (n 95) 307-309.

¹¹² Human Rights Watch, *Mind the Gap* (n 85).

Nonetheless, the new interpretation of command responsibility as articulated by Margulies allows militaries to establish 'effective control' as required under international law.¹¹³ This is because dynamic diligence requires commanders to be conversant with all aspects of an AWS, mandates constant testing, and provides for the reprogramming or decommission of an AWS.¹¹⁴ Dynamic diligence is a standard that requires constant adjustments to the AWS machine-human interface, periodic assessments and the regular updating of the weapon systems to ensure compliance with international law, and 'a presumption favouring interpretability of the AWS's outputs'.¹¹⁵ Other scholars, such as Neha Jain, have supported this theory despite noting that this modification represents 'a departure from the temporal coincidence of the commander's control and the criminal conduct of the human subordinate normally required by the doctrine'.¹¹⁶ Margulies defends this departure from a historical point of view as he highlights how weapons systems previously introduced to armed conflicts, such as cyber weapons, have also required a high degree of specialisation and modification to the existing command doctrine.¹¹⁷ Ultimately, the control element can be theoretically satisfied by shifting the focus of control from the respective violation to the original decision-making by the commander, and subsequently embracing a modified

¹¹³ Rome Statute (n 71) Art 28.

¹¹⁴ Margulies (n 99) 406-408.

¹¹⁵ *ibid.*

¹¹⁶ Jain (n 95) 314.

¹¹⁷ Margulies (n 99) 432-434.

understanding of prevention and form of punishment relevant to a non-human subordinates.

iv. Recklessness

Even if international criminal law may feasibly adopt the doctrine of indirect perpetration to prosecute commanders for the illegal conduct of AWS as instruments of criminality, one must equally consider the arguments raised by Human Rights Watch claiming that ‘a commander would nevertheless still escape liability in most cases’ since they can only be accountable if the requisite *mens rea* is proven.¹¹⁸ According to Article 30 of the Rome Statute, a person can only be held liable for punishment if the *Actus reus* is committed with intent or knowledge.¹¹⁹ Therefore, to hold a commander liable as an indirect perpetrator for intentionally deploying an AWS that committed a war crime at the ICC, the prosecutor would have to demonstrate that the commander either meant to engage in the conduct and to cause the consequences or was aware that such consequences would occur in the ordinary course of events.¹²⁰ To effectively prosecute on the mental element of “knowledge”, the prosecutor would have to prove that the commander had awareness that a circumstance existed or a consequence would occur in the ordinary course of events.¹²¹ Even the critics of Human Rights Watch concede that the

¹¹⁸ Human Rights Watch, *Mind the Gap* (n 85).

¹¹⁹ Rome Statute (n 71) Art 30.

¹²⁰ *ibid* Art 30(2).

¹²¹ *ibid* Art 30(3).

aforementioned requirement is unlikely to be satisfied when applied to unintentional situations.¹²² It is therefore essential that international criminal law recognises other forms of mental culpability to close the accountability gap and effectively provide accountability.

Command or superior responsibility could provide accountability even in absence of any intentionality since it requires a lower level of mental culpability. Article 28(a) of the Rome Statute specifies that a military commander is liable when they either knew or should have known the crime was to occur, and Article 28(b) requires knowledge or the conscious disregarding of information for a civilian superior.¹²³ Neha Jain discusses this contrast, claiming that the “should have known” requirement for a military commander could suggest a negligence standard for prosecution, as affirmed by the *Bemba* decision,¹²⁴ and the conscious disregarding of information can be interpreted as a recklessness standard for a civilian superior.¹²⁵ He then states that criminal law generally ‘favours purpose, knowledge or at least some form of recklessness as the minimum standard for culpability’.¹²⁶ Nevertheless, the existing support for lowering the *mens rea* requirements in the case of international crimes is controversial. Some lawyers advocate

¹²² Schmitt and Thurnher (n 14) 278.

¹²³ Rome Statute (n 71) Art 28.

¹²⁴ *Prosecutor v. Jean Pierre Bemba Gombo* (Bemba) (n 103) para 420-433.

¹²⁵ Jain (n 95) 311.

¹²⁶ *ibid* 324.

the prosecution of war crimes based on a recklessness standard, and argue that this level of culpability is supported in customary international law – as evidenced in the Nuremberg Trials and the ICTY *Prosecutor v. Blaskic* case.¹²⁷ On the other hand, Neha Jain Ohlin claims that ‘international criminal law’s treatment of crimes of recklessness remains wholly inadequate, mostly because there is no international equivalent to manslaughter or a similar crime that meets any reasonable standard of fair labelling’.¹²⁸ Ohlin then suggests that one way to bring about accountability for AWS is with the codification of a new criminal offence for recklessly perpetrating an international crime, enabling a commander who recklessly deployed an AWS to be found guilty of a specific offence.¹²⁹ This idea is not exactly novel as Nathan Reitering had already noted that a court can convict in the absence of knowledge – specifically as seen in the ICTY and ICTR trials where commanders were held liable without full knowledge of the actions of subordinates.¹³⁰ If this concept

¹²⁷ Alex Whiting, ‘Recklessness, War Crimes, and the Kunduz Hospital Bombing’ (2 May 2016) Just Security at New York University School of Law
 <<https://www.justsecurity.org/30871/recklessness-war-crimes-kunduz-hospital-bombing/>> accessed 6 September 2018;
Prosecutor v. Blaskic (Judgement) ICTY 95-14-T (3 March 2000) para 152.

¹²⁸ Ohlin (n 92) 3.

¹²⁹ *ibid* 28.

¹³⁰ Nathan Reitering, ‘Algorithmic Choice and Superior Responsibility: Closing the Gap Between Liability and Lethal Autonomy by Defining the Line Between Actors and Tools’ (2015) 51(1) *Gonzaga Law Review* 79, 117.

was to be applied to AWS, the prosecutorial burden would be low enough to capture crimes committed in the absence of blatant purpose – as is likely to occur with the future deployment of such complex weapons systems.

IV. Policy Considerations for an Amendment to the Rome Statute

Despite all the attention given to the AWS accountability gap, there are still legal scholars such as Ohlin who argue that ‘the basic structure of international criminal law is already well-suited to prosecuting military commanders for deployment of an AWS that commits a war crime’.¹³¹ As outlined in the previous Chapter, there are various conceivable frameworks that can be established or modified to provide individual accountability for the conduct of AWS. In addition, the biggest obstacles to attributing individual accountability, such as control and *mens rea*, exist independently of AWS. The most pressing issue for the international community now is to identify universally accepted legal standards, and subsequently raise political capital for the codification of respective regulations. The final section of this paper proposes one means of accomplishing this goal – through an amendment to the Rome Statute of the International Criminal Court.

¹³¹ Ohlin (n 92) 3.

i. Advantages of Existing Mechanisms

Support for an amendment to the Rome Statute as a means of providing accountability for AWS is based primarily on the ICC's unique construction as the world's first permanent international criminal tribunal. With binding obligations on 139 State Parties already in place,¹³² there is arguably no need for a new international instrument to cover war crimes perpetrated by AWS. A future amendment would simply reinforce existing duties on State Parties, as outlined in the Preamble of the Rome Statute whereby States must 'exercise its criminal jurisdiction over those responsible for international crimes' and ensure effective prosecution by 'taking measures at the national level and by enhancing international cooperation'.¹³³ Olympia Bekou, in her work "Building National Capacity for the ICC," describes how the establishment of the ICC marked the creation of an international system of justice that is centred on the principle of complementarity, 'which gives priority to national courts provided they are both willing and able genuinely to deal with a case'.¹³⁴ Complementarity is referenced in Article 1 of

¹³² Rome Statute, (n 71); Assembly of State Parties, 'State Parties to the Rome Statute-Chronological List' International Criminal Court <https://asp.icc-cpi.int/en_menus/asp/states%20parties/pages/the%20states%20parties%20to%20the%20rome%20statute.aspx> accessed 3 September 2018.

¹³³ Rome Statute, (n 71) Preamble.

¹³⁴ Olympia Bekou, 'Building National Capacity for the ICC: Prospects and Challenges' in Triestino Mariniello (eds), *The*

the Statute and contributes to the idea of the ICC as a court of 'last resort'.¹³⁵ Critics often address the inefficient or flawed nature of the ICC as a stand-alone institution, but do not properly address how this court instead forms the centre of a global effort for accountability that is inherently dependent on the support of State Parties.¹³⁶

First, the unique construction of the ICC as complementary system is beneficial for the prosecution of war crimes committed by AWS as these international crimes may occur in countries that do not have the capacity to effectively prosecute the accused, nor the ability to properly support victims. In fact, the World Health Organization states that 'one-third of countries with low human development are in conflict, with the impact spilling across borders into neighbouring regions'.¹³⁷ Moreover, those countries which

International Criminal Court in Search of its Purpose and Identity (Routledge 2015) 133.

¹³⁵ Rome Statute, (n 71) Art 1; Paul Seils, 'What is Complementarity: National Courts, the ICC, and the Struggle Against Impunity' (2016) International Center for Transitional Justice <<https://www.ictj.org/publication/handbook-complementarity>> accessed 4 September 2018.

¹³⁶ William W. Burke-White, 'Proactive Complementarity: The International Criminal Court and National Courts in the Rome System of International Justice' (2008) 49 *Harvard International Law Journal* 53, 60-62.

¹³⁷ Peter S Hill, Ghulam Farooq Mansoor, and Fernanda Claudio, 'Conflict in Least-Developed Countries: Challenging the Millennium Development Goals' (2010) 88(8) *Bulletin of the World Health Organization* 561, 562.

are more likely to deploy AWS in future armed conflicts, including the United States and the Russian Federation, are also the most involved in protracted military conflicts in the developing world.¹³⁸ It is then perhaps unsurprising how most of the countries calling for a ban or restrictions on fully autonomous weapons are either developing nations or those in the Non-Aligned Movement.¹³⁹ Post-conflict societies face a myriad of problems when prosecuting international crimes as they often lack a high level of legal expertise, financial resources, or political will to effectively carry out said prosecution.¹⁴⁰ This would be further complicated with the introduction of AWS, and would likely require assistance from the ICC to conduct such technical investigations or complex prosecutions.

¹³⁸ Sergey Karaganov, 'Global Challenges and Russia's Foreign Policy' (2016) 40 *Strategic Analysis* 461 <<https://doi.org/10.1080/09700161.2016.1224063>> accessed 1 September 2018; Andrew S. Bowen, 'What Recent Taliban Advances Reveal About the State of Afghanistan's Military' *World Politics Review* (4 September 2018) <<https://www.worldpoliticsreview.com/articles/25716/what-recent-taliban-advances-reveal-about-the-state-of-afghanistan-s-military>> accessed 6 September 2018.

¹³⁹ UNDP, '2016 Human Development Report' (2016) 198-200 <http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf> accessed 3 August 2018; Campaign to Stop Killer Robots, 'Country Views on Killer Robots' (13 April 2018) 1-2 <https://www.stopkillerrobots.org/wp-content/uploads/2018/04/KRC_CountryViews_13Apr2018.pdf> accessed 4 August 2018.

¹⁴⁰ Bekou, (n 134) 137.

Second, the Rome Statute already allows for the prosecution of high-level officials and provides numerous measures to support and protect victims and witnesses.¹⁴¹ This is vital for the safe and effective prosecution of individuals who deploy AWS that commit war crimes. AWS will presumably involve vast military command structures,¹⁴² and as articulated by US Deputy Defence Secretary Robert Work, authoritarian regimes might utilise these AWS as a means of consolidating power amongst a few individuals.¹⁴³ The ICC is therefore uniquely situated to provide sufficient protection to those who fall victim to AWS, especially when the deployment of the AWS originated from a dangerous individual or regime.

Third, the Rome Statute, as originally constructed, allows the ICC to expand its jurisdictional reach and investigate crimes perpetrated by nationals who are not State Parties as provided by Article 12(2)(a).¹⁴⁴ This is imperative to provide accountability for the illicit conduct of AWS because the commanders of these advanced weapons systems are likely to come from nations that are not State Parties to the Rome

¹⁴¹ O’Keefe, (n 62) 533-534; Rome Statute (n 71) Art 27(1),63,68,75.

¹⁴² Kalmanovitz, (n 57) 158.

¹⁴³ Dan Lamothe, ‘The Killer Robot Threat: Pentagon Examining How Enemy Nations Could Empower Machines’ *The Washington Post* (30 March 2016)

<https://www.washingtonpost.com/news/checkpoint/wp/2016/03/30/the-killer-robot-threat-pentagon-examining-how-enemy-nations-could-empower-machines/?noredirect=on&utm_term=.b138fe207c45> accessed 11 June 2018.

¹⁴⁴ Rome Statute (n 71) Art 12(2).

Statute, particularly the United States, Russian Federation, and China.¹⁴⁵ Jurisdictional mechanisms and the principle of complementarity were originally conceived and built into the Rome Statute due to concerns over State sovereignty by certain parties in the negotiations.¹⁴⁶ Today, one could argue that they are instead utilised as a tool to counter State sovereignty as a means of covering up international crimes, and this practice subsequently would extend to those international crimes perpetrated through the deployment of autonomous weapons systems. This is substantiated through an examination of the ongoing general efforts at the ICC to address war crimes in Afghanistan, which acceded to the Rome Statute of the International Criminal Court on the 10th of February 2003.¹⁴⁷ Ascending to the treaty gave the ICC jurisdiction over international crimes on the Afghan territory or by Afghanistan nationals from that date onwards.¹⁴⁸ According to human rights organisations such as Amnesty International, there is evidence that United States military forces and their NATO allies committed war crimes in Afghanistan during military operations between 2009 and 2013.¹⁴⁹ Amnesty International's report, titled "Left in the

¹⁴⁵ Assembly of State Parties (n 132).

¹⁴⁶ John T. Holmes, 'The Principle of Complementarity' in Roy S. Lee (eds), *The International Criminal Court: The making of the Rome Statute- Issues, Negotiations, Results* (Kluwer Law International 1999) 41, 40-42.

¹⁴⁷ Assembly of State Parties (n 132).

¹⁴⁸ Rome Statute (n 71) Art 11-13.

¹⁴⁹ Amnesty International, *Left in the Dark: Failures of Accountability for Civilian Casualties Caused by International Military Operations in Afghanistan* (Amnesty International Ltd

Dark: Failures of Accountability for Civilian Casualties Caused by International Military Operations in Afghanistan”, discusses the blatant flaws in the US military justice system in relation to war crime prosecution, and lambasts the slow moving nature of the ICC’s preliminary inquiry into a situation that began in 2007, which was described as ‘the longest-standing inquiry to remain at this early stage’.¹⁵⁰ Despite this slow progress, an official “Request for authorisation of an investigation pursuant to Article 15” was made by the ICC Prosecutor in November 2017 in accordance with Article 15(3) of the Rome Statute.¹⁵¹ This could enable the ICC Pre-trial Chamber to grant the Prosecutor’s request and open an official investigation into alleged war crimes committed by US military forces and individuals in the Central Intelligence Agency (CIA).¹⁵² The decision to grant the request was ultimately rejected in 2019,¹⁵³ but the initial

2014) ASA 11/006/2014

<<https://www.amnesty.org/download/Documents/4000/asa110062014en.pdf>> accessed 1 August 2018.

¹⁵⁰ Amnesty International, *Left in the Dark* (n 149) 84.

¹⁵¹ ICC Office of the Prosecutor, ‘Request for Authorization of an Investigation Pursuant to Article 15’ Pre-Trial Chamber III (20 November 2017) No. ICC-02/17 <https://www.icc-cpi.int/courtrecords/cr2017_06891.pdf> accessed 1 September 2018.

¹⁵² *ibid.*

¹⁵³ ICC, ‘Decision Pursuant to Article 15 of the Rome Statute on the Authorisation of an Investigation into the Situation in the Islamic Republic of Afghanistan’ Pre-Trial Chamber III (12 April 2019) No. ICC-02/17 <<https://www.icc->

request for authorisation has resulted in strong reactions from the Trump Administration.¹⁵⁴ For example, National Security Advisor John Bolton has gone as far as to propose banning, sanctioning, and even criminally prosecuting ICC judges in the United States should the investigation proceed.¹⁵⁵ The United States government could have challenged the ICC's intervention on various grounds, particularly on the Status of Forces Agreement (SOFA).¹⁵⁶ Nonetheless, the fact that such a request of unprecedented nature was even made and taken into consideration by the ICC and further pursued following the visceral reaction of the Trump Administration suggests that the ICC is capable of flexing its machinery to pursue international criminal justice. This could naturally extend to war crimes involving AWS in the future, as officially investigating the nationals of a powerful non-State Party is no longer in the realm of theory.

[cpi.int/courtrecords/cr2017_06891.pdf](https://www.cpi.int/courtrecords/cr2017_06891.pdf)> accessed 19 September 2019.

¹⁵⁴ Steve Holland, 'Trump Administration Takes Aim at International Criminal Court, PLO' *Reuters* (10 September 2018) <<https://www.reuters.com/article/us-usa-trump-icc/trump-administration-to-take-tough-stance-against-international-criminal-court-idUSKCN1LQ076>> accessed 11 September 2018.

¹⁵⁵ *ibid.*

¹⁵⁶ Luis Moreno Ocampo, 'The ICC's Afghanistan Investigation: The Missing Option' *Lawfare* (24 April 2017) <<https://www.lawfareblog.com/iccs-afghanistan-investigation-missing-option>> accessed 2 September 2018.

ii. Precedent of Amending the Rome Statute

The proposal for an amendment to the Rome Statute as a means of providing accountability for AWS can be further supported in light of the success of the previous efforts to amend the Rome Statute. Unlike *ad hoc* tribunals, the International Criminal Court is a permanent tribunal that is able to respond to the needs of a rapidly changing world and evolve to bring about justice. Article 121 of the Rome Statute outlines the procedure for amending the Rome Statute with a non-institutional amendment, which can be proposed by any State Party before being directly taken up or dealt with at a Review Conference. The adoption of such an amendment at either a meeting of the Assembly of State Parties or at a Review Conference requires two-thirds majority to pass and enters into force a year later for State Parties.¹⁵⁷ However, amendments to Articles 5,6,7 and 8, if not accepted by a State party, will render the Court unable to exercise jurisdiction regarding a crime covered by the respective amendment.¹⁵⁸

In 2010, State Parties gathered in Kampala, Uganda to successfully amend the Rome Statute for the first time in history.¹⁵⁹ This Review Conference resulted in substantial

¹⁵⁷ Rome Statute (n 71) Art 121 (3)(4).

¹⁵⁸ *ibid* Art 121(5).

¹⁵⁹ Assembly of State Parties, 'Review Conference of the Rome Statute of the International Criminal Court Kampala, 31 May – 11 June 2010' (2010) ICC Official Records, RC/11 <<https://asp.icc->

changes to the Rome Statute, such as the adoption of a new international crime that the Court would have jurisdiction over – the crime of aggression – and expanded the ICC jurisdiction over war crimes involving the use of certain weapons in both international and non-international conflicts.¹⁶⁰ While some see this amendment as relatively uncontroversial, Amal Alamuddin and Philippa Webb argue that ‘the process by which the amendment was successfully adopted is also instructive for future efforts to modify the ICC Statute’.¹⁶¹ In fact, the State parties at the Review Conference were able to reach a consensus for the crime of aggression, including its definition and conditions for jurisdiction, within the span of a few weeks.¹⁶² This is a remarkable feature for any international meeting, and suggests that future debates on AWS amendments are not set for failure. Moreover, scholars have noted that the expanded jurisdiction over the aforementioned war crimes will depend on future ICC interpretation.¹⁶³ The undefined nature of this amendment is equally pertinent to a future amendment pertaining to AWS, as any respective amendment would also require further interpretation by the ICC. Although Christopher Greenwood had noted that ‘the remarkable

api.int/iccdocs/asp_docs/ASP9/OR/RC-11-ENG.pdf> accessed 1 September 2018.

¹⁶⁰ *ibid*, 13-17.

¹⁶¹ Amal Alamuddin and Philippa Webb, ‘Expanding Jurisdiction over War Crimes under Article 8 of the ICC Statute’ (2010) 8 *Journal of International Criminal Justice* 1219.

¹⁶² Assembly of State Parties, ‘Review Conference’ (n 154) 1-4.

¹⁶³ Alamuddin and Webb, (n 161) 1219.

progress in the development of weaponry and methods of warfare during the twentieth century was unmatched by development in the law',¹⁶⁴ the success of this amendment to the Rome Statute seems to rebut this notion, and instead provides a glimmer of hope for the codification in providing accountability for AWS in the twenty-first century.

V. Conclusion

In sum, it is an undeniable fact that AWS are being actively developed, and that fully autonomous weapons systems may soon become commonplace in armed conflict. This stark realisation has spurred the international community into action as NGOs, international institutions, and legal scholars are attempting to understand AWS, and debate whether these new technologies can fit within the present-day international legal framework. As explored in Chapter 1, global policymakers need to adequately address the characterisation of AWS and reconcile the varying perspectives on autonomy and meaningful human control to arrive at universally acceptable nomenclature. Chapter 2 of this paper has elucidated the international regulatory system relevant to AWS and reflected upon the challenges and complicated nature of war crime prosecution under international criminal law. In the first section of Chapter 3, one can see that a paramount concern regarding the deployment of AWS is that of accountability. As highlighted by human rights organisations and certain commentators,

¹⁶⁴ Boothy (n 40) 539

our current conception of individual criminal liability and respective legal framework is ill-suited to provide accountability for individuals who deploy AWS that perpetrate international crimes. Fortunately, through an exploration of novel frameworks for individual responsibility as proposed by various legal scholars, it is evident that new legal mechanisms can be adopted to fairly attribute criminal liability to a human agent for the unlawful conduct of an AWS. These new means of assigning individual criminal liability are both innovative and feasible, as they are largely rooted in existing international legal traditions and modern military practice. In consequence, Chapter 4 of this paper has considered the adoption of the aforementioned accountability schemes in the form of an amendment to the Rome Statute of the International Criminal Court. While this paper posits such an amendment, it has not considered its exact construction, which will require future research. Instead, a modification of the Rome Statute has been defended through an examination of the ICC's existing architecture and the success of previous efforts to amend the Rome Statute.

Regardless of this position, it is important to acknowledge that any attempt to establish individual criminal liability for human agents who deploy AWS that perpetrate war crimes will be met with diverging opinions. Also, it will undoubtedly require a significant amount of political will and creativity to craft effective solutions that will close the AWS accountability gap. With that being said, it is my hope that this research has served as a minor contribution to that effort. As cleverly stated by British mathematician Alan Turing in his seminal work, "Computing Machinery and

Intelligence” ‘We can only see a short distance ahead, but we can see plenty there that needs to be done’.¹⁶⁵

¹⁶⁵ Alan M Turing, “Computing Machinery and Intelligence” (1950) LIX (236) *Mind: A Quarterly Review of Psychology and Philosophy* 433, 460

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