RIGA GRADUATE SCHOOL OF LAW

MASTER THESIS

Accountability for crimes committed by Autonomous Weapon Systems under International Criminal Law

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DECLARATION OF HONOUR:

I declare that this thesis is my own work, and that all references to, or quotations from, the work of others are fully and correctly cited.

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ABSTRACT

With conventional weapons a human is responsible for the target selection and the pulling of the trigger. In contrast to this, AWS themselves are responsible for these tasks. The contemporary framework of International Law regulating this problem focuses on the conventional weapons and the human operator behind them. This thesis is trying to partake in the solution of the following legal problem: if the current International Criminal Law-framework sufficiently regulates accountability for proscribed acts committed by Autonomous Weapon Systems. To achieve this the thesis focuses on the research question: Which individual would be held accountable for proscribed acts committed by Autonomous Weapon Systems? We will see that the manufacturer cannot be held accountable for war crimes committed by AWS and that command responsibility is not applicable to AWS. The commander and the deployer can be seen as co-perpetrators in certain cases. In certain cases, the commander can be individually responsible as an aider and abettor.

keywords: Autonomous Weapon Systems, Lethal Autonomous Weapon Systems, Autonomous weapons, killer robots, AWS, LAWS, International Criminal Law

SUMMARY

The following thesis "Accountability for crimes committed by Autonomous Weapon Systems under International Criminal Law" is trying to partake in the solution of the problem if the current International Criminal Law-framework sufficiently regulates accountability for proscribed acts committed by Autonomous Weapon Systems (AWS). To achieve this the thesis focuses on the research question: Which individual would be held accountable for proscribed acts committed by Autonomous Weapon Systems?

To provide an answer to this question the first three chapters lay the theoretical foundation for the following analysis.

Chapter II. gives an overview of the different categories of weapons based on the decision-making capabilities of weapons. Subsequently, the different ways to define the term AWS are scrutinized. The AWS-definition of the majority of relevant International Organizations and scholars will be reviewed as well, and the main features of an AWS are discussed.

Chapter III. focuses on the proscribed acts an AWS could commit in general. Here the thesis focuses on war crimes, which are the most discussed international crimes in the context of AWS. Firstly, it is enquired if the war crime of employment of weapons which are of a nature to cause superfluous injury or unnecessary suffering or which are inherently indiscriminate could be applicable to AWS. It is shown that AWS are not contemporary prohibited by any International Convention or Customary International Law. Thus, the prior mentioned war crime is currently not applicable to AWS. Additionally, it will be discussed when an AWS will be potentially prohibited in the future, which conditions need to be fulfilled that the AWS falls under this war crime. Afterwards, the spotlight will switch to the war crimes this thesis will focus on. These are the war crimes of willful killing, attacking civilians, murder and the war crime of excessive incidental death, injury or damage. The essential material elements of these war crimes will be laid down. This chapter is concluded by discussing in detail the mental elements for the prior mentioned war crimes.

Chapter IV. examines the most important forms of participation under which a person can be individually responsible.

Chapter V. entails the answers to the prior mentioned research question. This chapter scrutinizes the accountability of the manufacturer, deployer, the commander and also looks on command responsibility pursuant to Article 28 of the Rome Statute.

For the manufacturers it is shown that they cannot be direct perpetrators. During an excursion into the idea of product liability for AWS, it will be shown that this concept is unsuited for AWS. Manufacturer responsibility for the design of AWS will be applicable where the AWS would be designed to violate International Human Rights Law, International Humanitarian Law or other relevant laws. Manufacturer responsibility for the design of AWS will most likely be achieved by domestic law. The manufacturer cannot be held accountable for the manufacture of an AWS under the current International Criminal Law. Only when AWS would become illegal per se in the future, the manufacturer might be accountable for the manufacture of AWS. When there exists a treaty obligation regarding the sale and transfer of certain kinds of weapons and the manufacturer acts in a way that is inconsistent with the international obligations of the state, the manufacturer can be sanctioned by the state in a few different ways. To view the AWS-manufacturers as indirect perpetrators for the use of AWS is unconvincing. The necessary

elements for indirect perpetration cannot be established (commission of a crime trough another person), and some of the material elements (intentionally directing an attack for the war crime of attacking civilians) and mental elements (knowledge) for the war crimes focused on in this thesis cannot be established. The manufacturer is missing intent in the sense of Article 30 (2) (b) Rome Statute regarding the crime committed by the principal perpetrator. The manufacturer can also not be accountable as aider and abettor, because the awareness that the crime will occur in the ordinary course of events is missing and probably one can not prove beyond reasonable doubt that the manufacturer meant to cause the commission of the crime committed by the principal perpetrator. If there is evidence of the common criminal purpose of the manufacturer and the deployer the manufacturer could be a contributor to a group acting with a common purpose under Article 25 (3) (d) Rome Statute. For this the constituent elements of a person committing the crime are not fulfilled. Programmers, designers and manufacturers have no effective command and control over AWS. Thus, they won't be accountable as commanders under Article 28 Rome Statute. The manufacturer cannot be held accountable for war crimes committed by AWS.

The deployer doesn't have immediate responsibility for the physical or material criminal acts, so they cannot be a direct perpetrator. The deployer doesn't commit a crime "trough another person" [Article 25 (3) (a) alternative 3 Rome Statute]. Some of the material (intentionally directing an attack for the war crime of attacking civilians) and mental elements (knowledge) for the war crimes focused on in this thesis cannot be established. Accordingly, the deployer cannot be accountable as indirect perpetrator. Probably one cannot prove beyond reasonable doubt that the deployer meant to cause the commission of the crime committed by the principal perpetrator. The deployer probably can also not be aware of the essential elements of the offence. The deployer is also no aider and abettor. The deployer can't be a contributor to a group acting with a common purpose if there is evidence of the common criminal purpose of the manufacturer and the deployer, because the constituent element of a person who committed the crime is not fulfilled. Deployers cannot be held accountable as commanders under Article 28 Rome Statute, they have no effective command and control over AWS. The deployer cannot be held accountable for war crimes committed by AWS.

Command responsibility pursuant to Article 28 Rome Statute will also not be applicable to AWS. AWS committed the war crimes but cannot be seen as 'forces/subordinates' in the sense of Article 28 Rome Statute. The manufacturer/ deployer could be seen as 'forces/subordinates', but they didn't commit the war crimes. AWS cannot be seen as 'subordinates', thus the commander cannot have known or basically should have known that the 'subordinates' were committing or about to commit war crimes. It is possible that the superior took all necessary and reasonable measures within his or her power to prevent the crimes or submit the matter to the competent authorities for investigation and prosecution. But a commander can't repress the commission of crimes. Possible measures to prevent crimes are the sufficient testing of the AWS prior to its use in the field and/or to abstain from the use of AWS. For the measure of abstaining from the use of AWS the author pleads for the requirement of proportionality/likelihood. When looking at the duty to repress, a commander can theoretically stop ongoing crimes by AWS from continuing to be committed. But as a matter of practicability the commander cannot punish AWS after the commission of crimes by them accordingly. Nevertheless, the commander has the power to prevent or to repress the commission of the crimes. If the commander/superior does not have the necessary ability to take the necessary measures probably he/she will have the power to refer the matter to the competent authorities.

AWS can probably be under the effective command and control, or effective authority and control of the commander. Command responsibility will not be applicable to AWS.

Regarding the individual responsibility of the commander, it needs to said that the commander cannot be a direct perpetrator, because of a lack of immediate responsibility for the criminal acts. The commander and the military planners cannot be seen as co-perpetrators. The military planners don't have the power to frustrate the commission of the crime by not performing their tasks. Accordingly, they don't have essential tasks assigned and cannot be co-perpetrators. The commander and the AWS-deployer can be seen as co-perpetrators, if both are aware that the AWS for the given circumstance or environment cannot distinguish between civilians and combatants with reasonable certainty and the AWS still will be deployed and commits war crimes. Where the AWS cannot distinct between civilians and military personnel, the likelihood is very high that the AWS will attack a civilian/ cause incidental death, injury or damage rather than fulfil the military purpose. The commander knows both beforementioned things. Nevertheless, he/she orders the activation of the AWS. In this case the commander can be an aider and abettor.

An AWS itself is not a natural person. Thus, an AWS cannot be individually criminally responsible pursuant to the Rome Statute according to Article 25 (1) Rome Statute.

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TABLE OF ABBREVIATIONS

AWS	Autonomous Weapon Systems
CCW	Convention on Certain Conventional Weapons
Eds.	Editors
GGE	Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems
IAC	international-armed conflict(s)
ICC	International Criminal Court
ICRC	International Committee of the Red Cross
ICTR	International Criminal Tribunal for Rwanda
IHL	International Humanitarian Law
IHRL	International Human Rights Law
ICTY	International Criminal Tribunal for the Former Yugoslavia
NIAC	non-international armed conflict(s)
UN	United Nations
VCLT	Vienna Convention on the Law of Treaties

I. INTRODUCTION

Discussions about Autonomous Weapon Systems (AWS) on the big international level are ongoing for nearly a decade. The Contracting Parties to the Convention on Certain Conventional Weapons (CCW)[1] have AWS on their agenda since 2014. 125 States are parties to the CCW.[2] Since 2016 a formal Group of Governmental Experts (GGE) on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems exists, which belongs to the CCW. About the topic of this thesis the GGE on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems only agreed that human responsibility for decisions on the use of weapons systems must be retained since accountability cannot be transferred to machines.[3] It is still unclear, which human exactly should be responsible for AWS-decisions and if the current legal framework is sufficient to rule about this human responsibility.

Nevertheless, many people argue that AWS are far away from becoming a reality. According to the Panel of Experts on Libya established pursuant to the UN-Security Council resolution 1973 (2011), AWS might have been used in 2020. Allegedly Turkey has used in Libya lethal autonomous weapon systems such as the STM Kargu-2.[4] These lethal autonomous weapon systems were programmed to attack targets without requiring data connectivity between the operator and the munition.[5] The Penal of Experts on Libya states that these lethal autonomous weapon systems had in effect, a true "fire, forget and find" capability.[6] It looks like AWS are not that far away from reality like many people think. It seems like Turkey uses lethal autonomous weapon systems from January 2020 on.[7] It might be just a matter of time till AWS will commit their first crimes. Thus, it's the perfect time to look at the individual criminal responsibility for proscribed acts committed by AWS. This is exactly what this thesis focuses on. In the following the legal problem, the research questions and the research methodology will be discussed.

With conventional weapons a human is responsible for the target selection and the pulling of the trigger. In contrast to this, AWS themselves are responsible for these tasks. The contemporary framework of International Law regulating this problem focuses on the conventional weapons and the human operator behind them. This thesis is trying to partake in the solution of the following legal problem: if the current International Criminal Law-

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[1] 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, entered into force 2.12.1983, U.N.T.S. vol. 1342, p. 137, amended 21 December 2001 [hereinafter Convention on Certain Conventional Weapons or in short form CCW].

[2] *UN Office for Disarmament Affairs*, High Contracting Parties and Signatories CCW.

[3] UN, Meeting of the High Contracting Parties to the CCW, Final report 13.12.2019, CCW/MSP/2019/9 Annex III Guiding Principles affirmed by the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System at (b).

[4] *UN Security Council*, Letter from the Panel of Exports on Libya to the President of the Security Council, para. 63 + Annex 30.

[5] *UN Security Council*, Letter from the Panel of Exports on Libya to the President of the Security Council, para. 63.

[6] *UN Security Council*, Letter from the Panel of Exports on Libya to the President of the Security Council, para. 63.

[7] *UN Security Council*, Letter from the Panel of Exports on Libya to the President of the Security Council, Annex 30.

framework sufficiently regulates accountability for proscribed acts committed by Autonomous Weapon Systems. Regarding the International Criminal Law this thesis will focus on the Rome Statute and the case law of the International Criminal Court (ICC). The ICC is currently the most known, respected, currently working International Court/Tribunal in the area of International Criminal Law in the world.

This problem is already widely discussed. But most of the scholars having discussed this problem in the past based their inquiry on a definition of AWS, which is not shared by the majority of the relevant International Organizations and scholars. In other words, their used definition of AWS is outdated, so their results are also outdated.

The research question of this thesis is the following: Which individual would be held accountable for proscribed acts committed by Autonomous Weapon Systems?

This thesis uses the research method of legal-dogmatic research. Legal-dogmatic research concerns researching current positive law as laid down in written and unwritten (inter)national rules, principles, concepts, doctrines, case law and annotations in the literature.[8] This thesis looks at the current International Criminal Law [in particular the law of war crimes of willful killing, attacking civilians, murder, the war crime of excessive incidental death injury or damage and employing weapons, projectiles and material and methods of warfare which are of a nature to cause superfluous injury]. And if the current International Criminal Law sufficiently regulates accountability for proscribed acts committed by Autonomous Weapon Systems. Where needed, case law of the International Criminal Court, relevant Commentaries and journals will be consulted.

Because of time and space constraints this thesis did not cover the following problems:
- If AWS are a phenomenon of today or the future. I.e. How many countries have weapons which fall under the definition of AWS and in which weapon category they fall under (weapon used on/in land, air, water)
- It did not scrutinize all possible international crimes an AWS could possibly commit. This thesis did not look on the crimes of genocide, the crime of aggression or crimes against humanity and only looked on particular war crimes.

The thesis topic will try to solve the legal problem and the research question by structuring the analysis in the following way: After looking at the definition of AWS (Chapter II.), the next steps will be to look at the proscribed acts an AWS could commit in general (Chapter III.) and the forms of participation for individual criminal responsibility (Chapter IV.). Afterwards the theory of the chapters before will be applied and we will inquire which individual is criminally responsibility for proscribed acts committed by AWS (Chapter V.). Finally, conclusions will round off the research.

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[8] *Vranken, Jan*: Exciting Times for Legal Scholarship, Recht en Methode in onderzoek en onderwijs 2012 (2) 2, at 3.

II. DEFINITION OF AUTONOMOUS WEAPON SYSTEMS

When we look at the decision-making capabilities of weapons on a spectrum, these range from inert to fully autonomous weapons.[9] Inert weapons need contemporaneous operation by a human being to be lethal.[10] In the middle between inert and fully autonomous weapons are automated weapons.[11] They only react to a trigger in the environment and become lethal based on parameters which were predetermined by a human operator.[12] Automated weapons include tripwires, spring guns and landmines, which after deployment explode when somebody steps on them.[13] Automated weapons don't have a choice if they will 'fire' or not, once they are triggered they will just 'fire'.[14] Autonomous weapon systems are on the other end of the spectrum.[15]

There is no clear definition of Autonomous Weapon Systems (AWS) yet. The prior mentioned GGE also didn`t agree on a definition of AWS.

One way to define Autonomous Weapon Systems is to divide them into three different categories, based on the different levels of human involvement in their actions: "Human-in-the-Loop Weapons", "Human-on-the-Loop Weapons" and "Human-out-of-the-Loop Weapons".[16] "Human-in-the-Loop Weapons" are those where the weapon system itself can select targets and deliver force only with a human command.[17] "Human-on-the-Loop Weapons" can select targets and deliver force by themselves, but only during the oversight of a human operator who

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[9] *Ma,* Autonomous Weapons Systems under International Law, New York University Law Review 95, 2020, p. 1441.

[10] *Crootof*, The Killer Robots Are Here. Legal and Policy Implications, Cardozo Law Review 36 (2015), p. 1864; *Ma,* Autonomous Weapons Systems under International Law, New York University Law Review 95, 2020, p. 1441.

[11] *Ma,* Autonomous Weapons Systems under International Law, New York University Law Review 95, 2020, p. 1441.

[12] *Ma,* Autonomous Weapons Systems under International Law, New York University Law Review 95, 2020, p. 1441.

[13] *Ma,* Autonomous Weapons Systems under International Law, New York University Law Review 95, 2020, p. 1441.

[14] *Ma,* Autonomous Weapons Systems under International Law, New York University Law Review 95, 2020, p. 1441.

[15] Also *Ma,* Autonomous Weapons Systems under International Law, New York University Law Review 95, 2020, p. 1441.

[16] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 2; *Heyns,* Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions. Report to the Human Rights Council, para 39 and 41; *Miller,* Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 536.

[17] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 2; *Miller,* Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 535 at I.

also can override the weapons systems actions.[18] "Human-out-of-the-Loop Weapons" can select targets and deliver force without any human input or interaction.[19]

The majority of relevant International Organizations and scholars describe AWS as weapons selecting and applying force to targets without human intervention.[20] After the initial activation or launch by a person, an AWS self-initiates or triggers an attack in response to information from the environment received through sensors and on the basis of a generalized target profile.[21] The AWS-operator does not choose, or even know, the specific target(s) and the precise timing and/or location of the resulting application(s) of force.[22] To put it into other words, the human is out of the loop.[23] There are also occasionally other definitions of AWS: These definitions see them as "Human-out-of-the Loop Weapons" and also those that allow a human on the loop, but that are effectively out-of-the-Loop Weapons, because the human supervision is so limited.[24] The US-Department of Defense even includes into their AWS-definition human-supervised AWS that are designed to allow human operators to override the operation of the weapon system, but where the AWS can select and engage targets without further input after activation.[25] In the authors view it is more useful to describe weapons which can select and engage targets on their own, but where the human operator can override the operation of the weapon system, as semi-autonomous weapon systems. Nevertheless, the majority of relevant International Organizations and scholars see AWS as "Human-out-of-the-Loop Weapons" rather than "Human-on-the-Loop Weapons". Therefore, in the following AWS will only describe "Human-out-of-the-Loop Weapons".

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[18] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 2; *US Department of Defense*, Directive 3000.09. Autonomy in Weapon Systems, 21.11.2012 with changes on 8.5.2017, Part II p. 13 f. at autonomous weapon system and human-supervised autonomous weapon system; *Heyns,* Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions. Report to the Human Rights Council, para 39 and 41; *Miller,* Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 536.

[19] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 2; *Miller,* Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 536.

[20] ICRC, Position on autonomous weapon systems, ICRC position and background paper, 2021, p. 2; also *Crootof*, The Killer Robots Are Here. Legal and Policy Implications, Cardozo Law Review 36 (2015), p. 1842; calling these Weapons Fully Autonomous Weapon Systems *Ekelhof/ Struyk,* Deadly decisions. 8 objections to killer robots, p. 4 + *Advisory Council on International Affairs & Advisory Committee on Public International Law:* Autonomous Weapon Systems, 2021, p. 1 + *Wagner,* Taking Humans Out of the Loop: Implications for International Humanitarian Law, Journal of Law, Information and Science 9, 2012 at 2.; calling them Lethal Autonomous Robotics: *Heyns,* Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions. Report to the Human Rights Council, para. 38; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 652 at 2.

[21] *ICRC*, Position on autonomous weapon systems, 2021, p. 2; Crootof, War Torts. Accountability for Autonomous Weapons, University of Pennsylvania Law Review 164, no. 6 May 2016, p. 1367.

[22] *ICRC*, Position on autonomous weapon systems, 2021, p. 2; *Ford*, Autonomous weapons and International Law, South Carolina Law Review 69 (2017), p. 419; *Wagner,* Taking Humans Out of the Loop: Implications for International Humanitarian Law, Journal of Law, Information and Science 9, 2012 at 2.

[23] *Ekelhof/ Struyk,* Deadly decisions. 8 objections to killer robots, p. 4.

[24] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 2; *US Department of Defense*, Directive 3000.09. Autonomy in Weapon Systems, 21.11.2012 with changes on 8.5.2017, Part II p. 13 f. at autonomous weapon system and human-supervised autonomous weapon system.

[25] *US Department of Defense*, Directive 3000.09. Autonomy in Weapon Systems, 21.11.2012 with changes on 8.5.2017, Part II p. 13 f. at autonomous weapon system and human-supervised autonomous weapon system; *Miller,* Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 536.

III. PROSCRIBED ACTS AN AWS COULD COMMIT IN GENERAL

1. Material elements of the possible crimes

AWS could possibly commit/ be used to commit genocide, the crime of aggression or crimes against humanity. Nevertheless, this thesis will focus on war crimes as they are the focus of most discussions on this subject in prior legal studies.[26]

One possible ground for individual criminal responsibility for proscribed acts committed by AWS could be Article 8 (2) (b) (xx) Rome Statute[27]. This provision defines as a war crime the employment of weapons, projectiles, material and methods of warfare which are of a nature to cause superfluous injury or unnecessary suffering, or which are inherently indiscriminate in violation of the international law of armed conflict. Additionally, these weapons, projectiles and methods of warfare must be subject to comprehensive prohibition and must be included in an annex to the Rome Statute [Article 8 (2) (b) (xx) second part Rome Statute]. But the State Parties to the Rome Statute haven't yet added the necessary annex to the Rome Statute.[28] Nevertheless, it makes sense to look at if AWS are comprehensive prohibited. AWS are not banned by the UN-Convention on Certain Conventional Weapons/their Protocols or any other International Convention. Even if AWS in the future would be banned by an International Convention like the CCW, this does not mean that the development, use, or transfer of AWS would be automatically prohibited and criminally sanctioned.[29] Sometimes the States Parties are responsible to impose penal sanctions by persons or on territory under its jurisdiction or control.[30] In other cases, the bans of certain weapons don't address penal sanctions at all[31] or only have a necessary measures-requirement for the states to implement the agreement[32]. Currently AWS could also be prohibited by Customary International Law.[33] But AWS are not proscribed by any treaty yet and there is no agreement whether they are prohibited by Customary International Law.[34] So, AWS are not prohibited by Customary International Law. Thus, AWS are currently not comprehensive prohibited. This conclusion needs to be done under the condition that specific AWS do not cross separate weapon prohibitions or restrictions (such

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[26] Nearly every of the legal studies quoted in this paragraph focuses on war crimes.

[27] Rome Statute of the International Criminal Court, 17.7.1998, U.N.T.S. vol. 2187, p. 3, entered into force 1.7.2022 [hereinafter Rome Statute].

[28] *International Criminal Court*, Rome Statute. Amendments, updated at 14.2.2022.

[29] *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 645.

[30] Art. 9 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, 18.9.1997, U.N.T.S. vol. 2056, p. 2011, entered into force 1.3.1999 [hereinafter Anti-Personnel Land Mine Treaty].

[31] *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 645 f.

[32] See Art. IV Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, 10.4.1972, U.N.T.S. vol. 1015, p. 163, entered into force 26.3.1975.

[33] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 41 at E; *ICRC*, Customary IHL. Rule 74. Chemical Weapons.

[34] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 41 at E.

as the restriction on the use of incendiary weapons from Protocol III to the CCW).[35] The employment of AWS is not a war crime under Article 8 (2) (b) (xx) Rome Statute.

Moreover, this thesis will scrutinize the war crimes of willful killing [Article 8 (2) (a) (i) Rome Statute], attacking civilians [Article 8 (2) (b) (i) and Article 8 (2) (e) (i) Rome Statute], murder [Article 8 (2) (c) (i) Rome Statute] and the war crime of excessive incidental death, injury or damage [Article 8 (2) (b) (iv) Rome Statute]. The war crime of willful killing is applicable in international-armed conflicts (IAC)[36], the war crime of murder only in non-international-armed conflicts (NIAC), and the war crime of attacking civilians under IAC and NIAC. Since there is no definition of an armed conflict in the Rome Statute or the Elements of Crimes, the International Criminal Court (ICC) has relied on jurisprudence by the International Criminal Tribunal for the Former Yugoslavia (ICTY) to define the terms 'armed conflict'.[37] „An armed conflict exists whenever there is a resort to armed force between states or protracted violence between governmental authorities and organized armed groups or between such groups within a State."[38]

The war crime of attacking civilians requires the fulfilment of the following elements:
1) The perpetrator directed an attack.
2) The object of the attack was a civilian population as such or individual civilians not taking direct part in hostilities.
3) The perpetrator intended the civilian population as such or individual civilians not taking direct part in hostilities to be the object of the attack.
4) The conduct took place in the context of and was associated with an international armed conflict[39]/non international armed conflict[40].
5) The perpetrator was aware of factual circumstances that established the existence of an armed conflict.[41] The war crime of attacking civilians is mainly targeted at violations of the principle of distinction occasioned by the targeting of civilians.[42] The principle of distinction means that the belligerents must at all times distinguish between combatants/military objectives (that may be targeted) and civilians/civilian objects (which are not allowed to be targeted).[43]

Elements 4 and 5 of the war crime of attacking civilians are identical to the elements applicable for war crimes of willful killing and murder. Hence, the elements 1 to 3 of the war crimes of willful killing and murder are different. The elements 1 to 3 of the war crimes of willful killing and murder are:

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[35] *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), page 84 footnote 113.

[36] See Art. 8 (2) Rome Statute "Other serious violations of the laws and customs applicable *in international armed conflict*".

[37] *Quénivet*, in: Klamberg/ Nilsson: Commentary on the Law of the International Criminal Court (CLICC), 2017, updated 13.5.2019, Art. 8 (2) (a) Rome Statute at General Remarks.

[38] ICC, *Prosecutor v. Lubanga*, Trial Chamber I, Judgment, 14 March 2012, ICC-01/04-01/06, para. 533; ICTY, *Prosecutor v. Tadić*, Case No. IT-94-1-AR72, Appeals Chamber, Decision on the Defence Motion for Interlocutory Appeal on Jurisdiction, 2 October 1995, para. 70.

[39] Article 8 (2) (b) (i) Rome Statute.

[40] Article 8 (2) (e) (i) Rome Statute.

[41] The elements 1. - 5. are from: *ICC*, Elements of Crimes, Doc No. ICC-PIDS-LT-03-002/11, Art. 8 (2) (b) (i) and Art. 8 (2) (e) (i).

[42] *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 65.

[43] *Bhuiyan/ Khan*: Revisiting the Geneva Conventions 1949-2019, 2020, p. 245 f. at 2.

1) The perpetrator killed one or more persons.

2) Such person or persons were

   (a) for the war crimes of willful killing: protected under one or more of the Geneva Conventions of 1949

   (b) for the war crime of murder: either hors de combat, or were civilians, medical personnel, or religious personnel taking no active part in the hostilities.

3) The perpetrator was aware of the factual circumstances that established

   (a) for the war crime of willful killing: that protected status

   (b) for the war crime of murder: this status.[44]

The war crime of excessive incidental death, injury or damage requires the fulfilment of the following elements:

1) The perpetrator launched an attack.

2) The attack was such that it would cause incidental death or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment and that such death, injury or damage would be of such an extent as to be clearly excessive in relation to the concrete and direct overall military advantage anticipated.

3) The perpetrator knew that the attack would cause incidental death or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment and that such death, injury or damage would be of such an extent as to be clearly excessive in relation to the concrete and direct overall military advantage anticipated.

4) The conduct took place in the context of and was associated with an international armed conflict.

5) The perpetrator was aware of the factual circumstances that established the existence of an armed conflict.

2. Mental elements for the possible crimes

The main controversy regarding AWS is the satisfaction of the mental elements of each crime. Article 30 of the Rome Statute refers to the mental elements. Article 30 (1) Rome Statute states that a person is criminally responsible and liable for punishment for a crime, only if the material elements are committed with intent and knowledge, unless provided otherwise. A person has intent in relation to the conduct, when that person means to engage in the conduct [Article 30 (2) (a) Rome Statute]. Whereas a person has intent in relation to a consequence where that person means to cause that consequence or is aware that it will occur in the ordinary course of events [Article 30 (2) (b) Rome Statute]. The reference to "means to" in Article 30 (2) (a) and (b) Rome Statute can be generally equated with direct intent or dolus directus in the first degree.[45] The reference to an awareness that a consequence will occur in the ordinary course of events is generally equated with oblique intent or dolus directus in the second degree.[46]

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[44] All before mentioned elements 1-5 are from: *ICC*, Elements of Crimes, Doc No. ICC-PIDS-LT-03-002/11, Art. 8 (2) (a) (i) and Art. 8 (2) (c) (i).

[45] *Finnin*, Mental elements under article 30 of the Rome Statute of the International Criminal Court, International & Comparative Law Quarterly 61 (2), 2012, p. 341, *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 66.

[46] *Finnin*, Mental elements under article 30 of the Rome Statute of the International Criminal Court, International & Comparative Law Quarterly 61 (2), 2012, p. 344, *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 66.

Knowledge is defined as "awareness that a circumstance exists or a consequence will occur in the ordinary course of events" [Article 30 (3) Rome Statute]. In the case *Katanga* the ICC Trial Chamber ruled that the second alternative of Article 30 (3) Rome Statute requires "virtual certainty".[47] "This form of criminal intent presupposes that the person knows that his or her actions will necessarily bring about the consequence in question, barring an unforeseen or unexpected intervention or event to prevent its occurrence.[48] In other words, it is nigh on impossible for him or her to envisage that the consequence will not occur."[49] To bear in mind is also that under Article 30 of the Rome Statute individual criminal responsibility for relevant war crimes cannot be established when there is only evidence of a mental element of recklessness or dolus eventualis.[50] Recklessness or dolus eventualis though was sufficient in the jurisprudence of the ICTY and the International Criminal Tribunal for Rwanda (ICTR).[51] From the wording of the provisions of Article 30 of the Rome Statute it must be concluded that negligence is clearly excluded from this article.[52]

The only exceptions from the mental elements from Article 30 Rome Statute are those crimes, which specifically provide a different threshold in their elements [Art. 30 (1) Rome Statute "Unless otherwise provided"]. Indeed, a handful of crimes specify a lower mental element threshold in their elements (like the war crime of using, conscripting or enlisting children)[53]. But these crimes with a lower mental element are irrelevant in the context of AWS.[54]

Worthy of mentioning is also that the legal terms "conduct" and "consequence" are not defined in the Rome Statute and also the Rome Statute does not specify how these two terms are to be categorized.[55] Additionally, the Elements of Crimes specify a mental element for some crimes that is not a special form of intent, but rather a reflection of an application of Article 30 Rome Statute.[56] This is the case for prior mentioned war crimes relevant in the context of AWS. For instance, in the *Kantanga*-case the ICC-Trial Chamber established that the third element of the

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[47] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07-3436, para. 776.

[48] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07-3436, para. 777.

[49] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07-3436, para. 777.

[50] ICC, *Prosecutor v. Lubanga*, Pre-Trial Chamber I, Decision on the confirmation of charges, 29.1. 2007, ICC-01/04-01/06, para. 355 footnote 438; ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 360; *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 630.

[51] For an overview of the relevant ICTY and ICTR-jurisprudence see: *Werle/ Jessberger*, Unless Otherwise Provided. Article 30 of the ICC Statute and the Mental Element of Crimes under International Criminal Law, Journal of International Criminal Justice, vol. 3 2005, p. 53 - 54.

[52] Also *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 67.

[53] Art. 8 (2) (b) (xxvi) Rome Statute; *ICC*, Elements of Crimes, Doc No. ICC-PIDS-LT-03-002/11, Art. 8 (2) (b) (xxvi) at element 3.

[54] Also *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 67.

[55] *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 67.

[56] *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 67.

war crime of attacking civilians[57] is a repetition of Article 30 (2) (a) Rome Statute.[58] Furthermore, the Trial Chamber sees the second element of the war crime of attacking civilians[59] as the conduct.[60] After having applied these principles to the war crimes of attacking civilians, the perpetrator must have the following mental elements:

1) intentionally directed an attack

2) intended the civilian population or individual civilians to be the object of the attack

3) been aware of the civilian character of the population or of civilians not taking direct part in the hostilities

and

4) been aware of the factual circumstances that established the existence of an armed conflict.[61]

For the war crime of murder the ICC-Trial Chamber held that:

"the perpetrator must have intentionally killed one or more persons. Such intent will be proven where the perpetrator acted deliberately or failed to act (1) in order to cause the death of one or more persons or (2) whereas he or she was aware that death would occur in the ordinary course of events."[62] The perpetrator must also have been aware of the factual circumstances that established the status of the victims [pursuant to Article 8 (2) (c) (i) - element 3].[63]

IV. FORMS OF PARTICIPATION FOR INDIVIDUAL CRIMINAL RESPONSIBILITY IN GENERAL

Article 25 of the Rome Statute differentiates between different forms of participation to be individually criminally responsible. This form of participation is of high importance for the Court to find the appropriate sentence.[64] . There can also be many perpetrators of one crime, as long as the actions of each person fulfil the substantive elements of the crime. In all cases, for the establishment of individual criminal liability actus reus and mens rea must be proven. In the following the most important forms of participation for the AWS-context will be depicted.

Article 25 (2) Rome Statute reiterates the basic principle of individual criminal responsibility: A person who commits a crime shall be individually responsible and liable for punishment. Punishment issues are listed in Part 7 of the Rome Statute. The term 'commission' is said to be synonymous with the term 'perpetration'.[65]

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[57] See III. 1.

[58] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07-3436, para. 806.

[59] See III. 1.

[60] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07-3436, para. 806.

[61] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07-3436, para. 808.

[62] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07-3436, para. 793.

[63] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07-3436, para. 793.

[64] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 19.

[65] *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 568 at Commission as an Individual […], quoted after: Cryer/ Friman/ Robinson/Wilmshurst, An Introduction to International Criminal Law and Procedure, 2007, p. 302.

1. Direct perpetrator - Article 25 (3) (a) alternative 1 Rome Statute

Direct perpetrators have immediate responsibility for the physical or material criminal acts [Article 25 (3) (a) alternative 1 Rome Statute].[66]

2. Co-perpetrator - Article 25 (3) (a) alternative 2 Rome Statute

A co-perpetrator is a person that commits a punishable crime jointly with another person [Article 25 (3) (a) alternative 2 Rome Statute].[67] A co-perpetrator is a person to whom essential tasks have been assigned, thus they have control over the offence along with others.[68] Additionally, there must be an agreement or common plan between two or more persons.[69] But the existence of the agreement or common plan does not need to be explicit and its existence can be inferred from the subsequent joint action of the co-perpetrators.[70] Co-perpetrators do not have to carry out the crime personally and directly.[71] This concept also encompasses leaders and organizers who do not physically perpetrate the criminal acts.[72] Every co-perpetrator must carry out essential contributions in a coordinated manner which result in the fulfilment of the material elements of the crime.[73]

3. Indirect perpetrator - Article 25 (3) (a) alternative 3 Rome Statute

Article 25 (3) (a) alternative 3 Rome Statute criminalizes perpetration through another person, regardless if that other person is criminally responsible [indirect perpetrator[74]]. The principal (the 'perpetrator-by-means') uses the executor (the direct perpetrator) as a tool or an instrument for the commission of the crime.[75] This mode of criminal responsibility is recognized by the world's major legal systems.[76] This form of indirect perpetration requires three conditions for the criminal responsibility of the principal:
1. A person exerts control over the crime whose material elements were brought about by one or more persons,

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[66] *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 566.

[67] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 20; *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 571.

[68] ICC, *Prosecutor v. Lubanga*, Pre-Trial Chamber I, Decision on the confirmation of charges, 29.1.2007, Case-No. ICC-01/04-01/06, para. 332; ICC, *Prosecutor v. Katanga and Ngudjolo Chui*, Pre-Trial Chamber I, Decision on the confirmation of charges, 30.9.2008, ICC-01/04-01/07, para. 488.

[69] ICC, *Prosecutor v. Lubanga*, Pre-Trial Chamber I, Decision on the confirmation of charges, 29.1.2007, Case-No. ICC-01/04-01/06, para. 343.

[70] ICC, *Prosecutor v. Lubanga*, Pre-Trial Chamber I, Decision on the confirmation of charges, 29.1.2007, Case-No. ICC-01/04-01/06, para. 345.

[71] ICC, *Prosecutor v. Lubanga*, Appeals Chamber, Judgment on the appeal of Mr Thomas Lubanga Dyilo against his conviction, 1.12.2014, Case-No. ICC-01/04-01/06, para. 458.

[72] *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 569.

[73] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 350.

[74] *Bowman*, in: Klamberg/ Nilsson: Commentary on the Law of the International Criminal Court (CLICC), 2017, Art. 25 (3) (a) Rome Statute at Indirect Perpetration.

[75] ICC, *Prosecutor v. Katanga and Ngudjolo Chui*, Pre-Trial Chamber I, Decision on the confirmation of charges, 30.9.2008, ICC-01/04-01/07, para. 495.

[76] ICC, *Prosecutor v. Katanga and Ngudjolo Chui*, Pre-Trial Chamber I, Decision on the confirmation of charges, 30.9.2008, ICC-01/04-01/07, para. 495.

2. The principal meets the mental elements prescribed by Article 30 of the Rome Statute and the mental elements specific to the crime at issue,
and
3. The principal is aware of the factual circumstances which allow the person to exert control over the crime.[77]

According to the wording of Article 25 (3) (a) alternative 3 Rome Statute the responsibility of the principal is not dependent on the responsibility of the executor. Meaning that there are cases where the executor will be criminally not responsible for his/her actions. The innocence of the executor is dependent on the availability of acceptable justification and/or excuses for his actions.[78] Acceptable justifications and/or excuses are, the executor: a) has acted under a mistaken belief, b) acted under duress and/or c) has not the capacity for blameworthiness.[79]

4. Aider, Abettor, or assists otherwise - Art. 25 (3) (c) Rome Statute

Article 25 (3) (c) Rome Statute requires that the offender aids, abets or otherwise assists in the commission of the crime or the attempted commission. And the offender needs to do this for the purpose of facilitating the commission of such a crime [Article 25 (3) (c) Rome Statute]. This amounts to a form of specific intent, where evidence of a particular motive must be demonstrated.[80] This specific intent of purpose is higher than the intent pursuant to Article 30 Rome Statute.[81] But this purpose standard only applies to the aider and abettor's own conduct.[82] With regard to the crime committed by the principal perpetrators, the aider and abettor only needs to have intent according to Art. 30 Rome Statute.[83] To put this into other words: For his/her own conduct an aider and abettor must act intentionally [means to engage in the conduct pursuant to Article 30 (2) (a) Rome Statute], be aware that he/she is carrying out his/her acts [according to Article 30 (3) Rome Statute] and act for the purpose of facilitating the crime [Article 25 (3) (c) Rome Statute].[84] Regarding the crime committed by the principal perpetrator the aider and abettor must only 'mean […] to cause' the commission or '[be] aware that [the crime] will occur in the ordinary course of events' [Article 30 (2) (b) Rome Statute].[85] To bear in mind is that the accessor does not need to know the precise offence intended and in the specific circumstances committed.[86] It's sufficient that the accessor is aware of the essential

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[77] The before mentioned criteria 1. - 3. are from: ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07, para. 1399.

[78] ICC, *Prosecutor v. Katanga and Ngudjolo Chui*, Pre-Trial Chamber I, Decision on the confirmation of charges, 30.9.2008, ICC-01/04-01/07, para. 495.

[79] ICC, *Prosecutor v. Katanga and Ngudjolo Chui*, Pre-Trial Chamber I, Decision on the confirmation of charges, 30.9.2008, ICC-01/04-01/07, para. 495.

[80] *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 578.

[81] ICC, *Prosecutor v. Bemba Gombo et. al.*, Trial Chamber VII, Judgment pursuant to Article 74 of the Statute, 19.10.2016, Case-No. ICC-01/05-01/13, para. 97.

[82] ICC, *Prosecutor v. Bemba Gombo et. al.*, Trial Chamber VII, Judgment pursuant to Article 74 of the Statute, 19.10.2016, Case-No. ICC-01/05-01/13, para. 97.

[83] ICC, *Prosecutor v. Bemba Gombo et. al.*, Trial Chamber VII, Judgment pursuant to Article 74 of the Statute, 19.10.2016, Case-No. ICC-01/05-01/13, para. 97.

[84] *Ventura*, Aiding and Abetting and the International Criminal Court's Bemba et al. Case: The ICC Trial and Appeals Chamber Consider Article 25(3)(c) of the Rome Statute (1998), SSRN p. 22.

[85] ICC, *Prosecutor v. Bemba Gombo et. al.*, Trial Chamber VII, Judgment pursuant to Article 74 of the Statute, 19.10.2016, Case-No. ICC-01/05-01/13, para. 98.

[86] ICC, *Prosecutor v. Bemba Gombo et. al.*, Trial Chamber VII, Judgment pursuant to Article 74 of the Statute, 19.10.2016, Case-No. ICC-01/05-01/13, para. 98.

elements of the offence.[87] Being aware of the essential elements of the offence means that it is sufficient if the aider and abettor is aware that one of a number of crimes will probably be committed, and one of those crimes is in fact committed.[88]

5. Contributor to a group acting with a common purpose - Article 25 (3) (d) Rome Statute

According to Article 25 (3) (d) Rome Statute the offender is criminally liable for contributing in any other way to the commission or attempted commission of a crime by a group of persons acting with a common purpose. The contribution does not need to intent to commit the specific crime.[89] It is sufficient that the contribution is intentionally made (i) with the aim of furthering the criminal activity or criminal purpose of the group, where such activity or purpose involves the commission of a crime within the jurisdiction of the Court; or (ii) is made in the knowledge of the intention of the group to commit the crime [Article 25 (3) (d) Rome Statute]. The offender will not be responsible for all the crimes which form part of the common purpose, but only for those to whose commission he/she contributed.[90]

According to the ICC the constituent elements of liability under Article 25 (3) (d) Rome Statute are:
(1) a crime under the jurisdiction of the Court was committed;
(2) the persons who committed the crime belongs to a group with a common purpose which was to commit the crime or involved in its commission, including in the ordinary course of events;
(3) the accused made a significant contribution to the commission of the crime;
(4) the contribution was made with intent, insofar as the accused meant to engage in the conduct and was aware that such conduct contributed to the activities of the group acting with a common purpose;
and
(5) the accused's contribution was made in the knowledge of the intention of the group to commit the crime forming part of the common purpose.[91]
The contribution of the accused is significant (Element 3) where it had a bearing on the occurrence of the crime and/or the manner of its commission.[92] This mode of liability is applicable irrespective of whether the offender is or is not a member of the group acting with a common purpose.[93] The group with the common purpose does not need to be an organization

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[87] ICC, *Prosecutor v. Bemba Gombo et. al.*, Trial Chamber VII, Judgment pursuant to Article 74 of the Statute, 19.10.2016, Case-No. ICC-01/05-01/13, para. 98.
[88] ICTY, *Prosecutor v. Blaškić,* Appeals Chamber, 29.7.2004, Case-No. IT-95-14-A, para. 50; ICTY, *Prosecutor v. Furundžija,* Trial Chamber, Judgment 10.12.1998, Case-No. IT-95-17/1-T, para. 246; ICC, *Prosecutor v. Bemba Gombo et. al.*, Trial Chamber VII, Judgment pursuant to Article 74 of the Statute, 19.10.2016, Case-No. ICC-01/05-01/13, para. 98.
[89] *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 579.
[90] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07, para. 1619.
[91] All the elements (1) – (5) are from: ICC, *Prosecutor v. Katanga*, Trial Chamber II, Decision transmitting additional legal and factual material (regulation 55(2) and 55(3) of the Regulations of the Court), 15.5.2013, Case-No. ICC-01/04-01/07, para. 16.
[92] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07, para. 1633.
[93] ICC, *Prosecutor v. Mbarushimana*, Pre-Trial Chamber I, 16.12.2011, Case-No. ICC-01/04-01/10, para. 275.

incorporated into a military, political or administrative structure.[94] The common purpose can be established spontaneously, i.e. it does not need to be arranged or formulated previously.[95] Article 25 (3) (d) Rome Statute is a residual mode of accessorial liability, which is triggered only when Article 25 (3) subparagraphs (a) - (c) Rome Statute are not satisfied.[96]

6. Command/ Superior responsibility - Article 28 Rome Statute

The term command and superior responsibility are sometimes used interchangeable. This thesis will use mostly the term command responsibility, because AWS will most likely be deployed by the military of states. Article 28 (a) Rome Statute deals with superior responsibility in the military context, and Article 28 (b) Rome Statute deals with superior responsibility in the civilian context[97].

The term 'military commander' out of Article 28 (a) Rome Statute refers to persons who are formally or legally appointed to carry out a military command function, namely de jure commanders.[98] The concept applies irrespective of the rank or level of the commander in the military hierarchy.[99] A military commander could be a person occupying the highest level in the chain of command or a mere leader with few soldiers under his/her command.[100] The notion of a military commander also captures those situations where the superior does not exclusively perform a military function[101] (e.g. has additionally a political function). A "person effectively acting as a military commander" in the meaning of Article 28 (a) Rome Statute refers to those who are not elected by law to carry out a military commander's role, yet they perform it de facto by exercising effective control over a group of persons through a chain of command.[102] This category of military-like commanders may generally encompass superiors who have authority and control over regular government forces such as armed police units, or irregular forces (non-government forces) such as rebel groups, paramilitary units, including inter alia armed resistance movements and militias that follow a structure of military hierarchy or a chain of command.[103]

The superior responsibility in the military context presumes that the superior must have 'effective command and control' or 'effective authority and control' [Article 28 (a) Rome Statute]. But there is no substantial difference between the required level or standard of control

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[94] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07, para. 1626.
[95] ICC, *Prosecutor v. Katanga*, Trial Chamber II, Judgment pursuant to article 74 of the Statute, 7.3.2014, Case-No. ICC-01/04-01/07, para. 1626.
[96] ICC, *Prosecutor v. Ruto et. al*, Pre-Trial Chamber II, 23.1.2012, Case-No. ICC-01/09-01/11, para. 354.
[97] *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 611.
[98] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 408.
[99] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 408.
[100] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 408.
[101] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 408.
[102] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 409.
[103] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 410.

between 'effective command and control' and 'effective authority and control' from Article 28 (a) Rome Statute.[104]. Article 28 (b) Rome Statute speaks of 'effective authority and control', whereas Article 28 (b) (ii) Rome Statute speaks of 'effective responsibility and control of the superior'. Article 28 (b) (ii) Rome Statute is an additional requirement under the doctrine of civilian superior responsibility in opposition to Article 28 (a) Rome Statute.[105] The concept of 'effective control' is mainly perceived as the material ability or power to prevent and punish the commission of offences and, as such, failure to exercise such abilities of control gives rise to criminal responsibility, if other requirements are met.[106] In the context of Article 28 (a) of the Rome Statute, 'effective control" also refers to the material ability to prevent or repress the commission of the crimes or submit the matter to the competent authorities.[107] Examples for the indication of existence of a superior's position of authority and effective control:

i) the official position of the subject,

ii) his/her power to give orders,

iii) the capacity to ensure compliance with the orders issued,

iv) his/her position within the military structure and the actual tasks carried out by him/her,

v) the capacity to order forces under his/her command to engage in hostilities,

vi) the capacity to re-subordinate units or make changes to command structure,

vii) the power to promote, replace, remove, or discipline any member of the forces,

viii) the authority to send forces where hostilities take place and withdraw them at any given moment.[108]

Pre-Trial Chamber II of the ICC considers that the chapeau of article 28 (a) of the Rome Statute includes an element of causality between a superior's dereliction of duty (failure to exercise control properly) and the underlying crimes.[109] A possible way to determine the level of causality of a positive act of the commander is for the ICC a "but for test".[110] But for the superior's failure to fulfil his duty to take reasonable and necessary measures to prevent crimes, those crimes would not have been committed by his forces.[111] For omissions of the superior it is only necessary to prove that the commander's omission to prevent crimes increased the risk

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[104] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 412.

[105] *Kortfält*, in: Klamberg/ Nilsson: Commentary on the Law of the International Criminal Court (CLICC), 2017, Art. 28 (b) (ii) Rome Statute.

[106] For Article 28 (a) Rome Statute: ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 415; for Article 28 (b) Rome Statute: *Kortfält*, in: Klamberg/ Nilsson: Commentary on the Law of the International Criminal Court (CLICC), 2017, Art. 28 (b) Rome Statute.

[107] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 415.

[108] All the examples i) – viii) are from ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 417.

[109] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 423.

[110] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 425.

[111] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 425.

of the commission of the charged crimes, to hold the superior liable under Article 28 (a) Rome Statute.[112]

The liability of a military commander under Article 28 (a) Rome Statute requires that he/she either knew or owing to the circumstances at the time, should have known that the forces were committing or about to commit such crimes [Article 28 (a) (i) Rome Statute]. Alternative 1 of Article 28 (a) (i) Rome Statute requires actual knowledge, which cannot be "presumed", rather it has to be presumed by way of direct or circumstantial evidence.[113] Factors to consider are: the number of illegal acts, their scope, whether their occurrence is widespread, the time during which the prohibited acts took place, the type and number of forces involved, the means of available communication, the modus operandi of similar acts, the scope and nature of the superior's position and responsibility in the hierarchal structure, the location of the commander at the time and the geographical location of the acts.[114] Actual knowledge may be also proven if a priori a military commander is part of an organized structure with established reporting and monitoring systems.[115] The should have known standard of Article 28 (a) (i) Alternative 2 Rome Statute requires the superior to "ha[ve] merely been negligent in failing to acquire knowledge of his subordinates" illegal conduct.[116] This standard requires more of an active duty on the part of the superior to take the necessary measures to secure knowledge of the conduct of his troops and to inquire, regardless of the availability of information at the time on the commission of the crime.[117] It is also necessary to keep in mind that the 'should have known'-standard of Article 28 (a) (i) Rome Statute is different than the 'had reason to know'-standard of the statutes of the ICTY, ICTR and the Statute of the Special Court for Sierra Leone (SCSL).[118] Nevertheless, the criteria or indicia developed by the ad hoc tribunals for the 'had reason to know'-standard may also be useful when applying the 'should have known'-standard.[119] In the view of the ICC the suspect is considered to have known, if inter alia, and depending on the circumstances of each case:
(i) he/she had general information to put him on notice of crimes committed by subordinates or of the possibility of occurrence of the unlawful acts
and
(ii) such available information was sufficient to justify further inquiry or investigation.[120]

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[112] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 425.

[113] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 430.

[114] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 431.

[115] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 431.

[116] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 432.

[117] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 433.

[118] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 434.

[119] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 434.

[120] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 434.

In the ICC's view the failure to punish past crimes committed by the same group of subordinates may be an indication of future risk.[121]

In the case of civilian superiors, the superior must either knew, or consciously have disregarded information which clearly indicated, that the subordinates were committing or about to commit such crimes [Article 28 (b) (i) Rome Statute]. The concept of 'consciously disregarding information' amounts to a form of recklessness.[122]

The superior also must have failed to take all necessary and reasonable measures within his or her power to prevent the crimes, repress the commission of the crimes or to submit the matter to the competent authorities for investigation and prosecution [Article 28 (a) (ii) and (b) (iii) Rome Statute]. The duty to prevent crimes encompasses measures such as:

(i) to ensure that the superior's forces are adequately trained in international humanitarian law;
(ii) to secure reports that military actions were carried out in accordance with international law;
(iii) to issue orders aiming at bringing the relevant practices into accord with the rules of war;
(iv) to take disciplinary measures to prevent the commission of atrocities by the troops under the superior's command.[123]

The duty to repress encompasses the duty to stop ongoing crimes from being continuing to be committed and the obligation to punish forces after the commission of crimes.[124] The obligation to punish forces after the commission of crimes can be done either by the superior taking himself/herself the necessary measures and reasonable measures to punish his/her forces, or to refer the matter to the competent authorities if the superior does not have the necessary ability to take the necessary measures.[125]

V. INDIVIDUAL CRIMINAL RESPONSIBILITY FOR PROSCRIBED ACTS COMMITTED BY AWS

This chapter focuses on individual criminal responsibility under International Criminal Law. Thus, it will not deal with or will only deal very superficial with administrative and disciplinary proceedings undertaken in response to violations of IHL (described as military justice[126]) or civil liability. This doesn't mean that these other forms of legal responsibility are irrelevant. Moreover, it pays tribute to the view that these other forms of legal responsibility are insufficient responses to reflect the seriousness of the wrong following out of inter alia the unlawful killing of a human/ the attacking of civilians' through AWS.[127]

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[121] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 434.
[122] Schabas, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 617.
[123] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 438.
[124] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 439.
[125] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 440.
[126] *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 64.
[127] *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 64.

1. Manufacturer/ Developer/ Roboticist/Programmer responsibility

This thesis will use the term manufacturer, but developer, roboticist, programmer and engineer are synonymous. These persons will define the behavior of an AWS[128], inter alia the generalized target profile. However, they will not activate the AWS on the battlefield.[129]

Under this definition manufacturers can never be direct perpetrators, they do not physically perpetrate the crime themselves. The weapon manufacturing can only potentially be responsible preparation of a proscribed physical act.[130]

One general problem could be that AWS would be highly sophisticated and would be developed by many teams of developers in many different organizations.[131] Complex weapon systems today in use are comprised of hundreds or thousands of subsystems constructed by large networks: military and governmental bodies; domestic, foreign and multinational corporations; academic institutions etc.[132] The attribution of individual responsibility just between the participating manufacturers for a flaw in the AWS (notwithstanding if the flaw was created deliberately or accidentally) would probably be very difficult.[133] Also, to find an individual most responsible for the behaviors that lead to war crimes may be very difficult.[134] The environment in which AWS are placed and the context in which they are used makes it for the manufacturer impossible to limit the potential uses or harms that AWS potentially cause.[135] This might make it inappropriate to attribute responsibility to manufacturers.[136] Later we will see if this hypothesis holds true.

There have been ideas to have a product liability with AWS.[137] In some countries (like the United States or Germany[138]) consumers can bring civil lawsuits against corporations for harm caused by articles manufactured or sold by them.[139] These product liability lawsuits are usually based on various types of negligence (like manufacturing and design defects, failure to take

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[128] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 375.

[129] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 375.

[130] Also *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 375.

[131] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 384.

[132] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 381 at III. E.

[133] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 381 at III. E.

[134] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 384.

[135] *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 651.

[136] *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 651.

[137] *Lin/ Bekey/ Abney,* Autonomous Military Robotics. Risks, Ethics and Design, Cal Poly, 20.2.2008, p. 55 f. at 5.1.

[138] § 1 deutsches Produkthaftungsgesetz {german product liability law}, Produkthaftungsgesetz vom 15. Dezember 1989 (BGBl. I S. 2198), zuletzt geändert durch Artikel 5 des Gesetzes vom 17. Juli 2017 (BGBl. I S. 2421).

[139] *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 647 at B. 1.

proper care or avoid foreseeable risks, failure to warn or provide reasonable instructions).[140] Product liability for AWS could incentivize manufacturers to produce highly reliable AWS to avoid liability.[141] But this concept also holds some problems in it. Private weapon manufacturers are generally not punished for how individuals or governments use their weapons.[142] This holds especially true if the manufacturer carefully discloses up front any risks of malfunctions to the purchasers of their weapons.[143] If product liability would be applicable to AWS it is also very unlikely that any company would produce and sell weapons which are inherently dangerous, knowing the company would be held liable for any use that violates International Humanitarian Law (IHL), International Human Rights Law (IHRL) or other relevant laws.[144] Product liability requires victims to pursue appropriate legal actions in front of the civil courts. It is unrealistic that the civilian victims of war will sue a manufacturer in a foreign court, even if the legal rules would allow them to receive remuneration.[145] In particular, because the civilian victims of war are often impoverished and geographically displaced. Thus, product liability for AWS seems to be unsuited.

Now we will look more in detail into the possible criminal liability of the manufacturer.

a) For the design of AWS

Manufacturer responsibility will be applicable where the AWS would be designed to violate IHRL, IHL or other relevant laws.[146] One possible example would be: the manufacturer intentionally designs an AWS that is incapable of distinguishing civilians and combatants or that causes unnecessary suffering.[147] The accountability will be most likely achieved through domestic law.[148] Most AWS would not be specifically designed to violate IHRL, IHL or other relevant laws. Various components of AWS have dual use, what makes it difficult, if not

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[140] *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 647 at B. 1.

[141] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 44.

[142] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 44; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 647 at B. 1.

[143] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 44; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 647 at B. 1.

[144] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 44; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 647 f. at B. 1.

[145] *Docherty,* Losing Humanity. The Case against Killer Robots, Human Rights Watch 2012, p. 44; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 648.

[146] Steinhardt, Ralph G., Weapons and the Human Rights Responsibilities of Multinational Corporations, in Casey-Maslen, Stuart, Weapons Under International Human Rights Law, 2014, 508; quoted after *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 40 at D.

[147] Similar *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 40 at D.

[148] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 40 at D.

impossible to impose an obligation on states to prescribe the design of such AWS-components.[149]

b) For the manufacture of AWS

If the manufacturer chooses to manufacture AWS which are illegal per se, the manufacturer would be responsible.[150] In the future AWS could become illegal per se by treaty law or Customary International Law.[151] How we saw before, AWS are currently not illegal by treaty law and also not by Customary International Law.[152] Nevertheless, even if AWS would be illegal by treaty law the manufacturer would only be criminally accountable, if with the ban of AWS penal sanctions at the same time would go hand in hand.[153] In the view of Chengeta when the manufacturer produces not per se illegal AWS, but these AWS are then used illegally, the manufacturer would be only liable if they have substantial knowledge of the illegal use of the AWS by the particular customer.[154] But here the question will be if AWS-buyers can use an AWS illegally or if the AWS itself is committing illegal conduct. Some scholars argue that neither the programming nor the command data inputted into the AWS will necessarily result in a specific outcome in response to any given set of circumstances.[155] Based on the AWS-definition of the majority[156], this scenario is very likely. Thus, it is very likely that the AWS will make choices other than those directly programmed into it.[157] A manufacturer probably cannot program an AWS in a way that it will for sure result in the commitment of crimes. Thus, it is more likely that an AWS itself is committing the illegal conduct and not the AWS-buyer. The AWS-buyer is not using the AWS illegally. And because of the missing connection between the programming/command data and the specific outcome the AWS-manufacturer cannot have substantial knowledge of the illegal conduct of the AWS. The prior mentioned view of Chengeta needs to be rejected.

Thus, the manufacturer probably currently cannot be held accountable for the manufacture of an AWS.

c) For the sale and transfer of AWS

When there exists a treaty obligation regarding the prohibition of sale and transfer of certain kinds of weapons, it is the duty of the state to ensure that these weapons are not sold or

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[149] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 40 at D.

[150] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 41 f. at E.

[151] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 41 at E.

[152] See II.

[153] See III. 1.

[154] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 41 at E.

[155] *Stewart,* New Technology and the Law of Armed Conflict, International Law Studies Series. US Naval War College 87, 2011; *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 68; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 651.

[156] See II.

[157] For autonomous Unmanned Vehicle Systems: Finn/ Scheding, Developments and Challenges for Autonomous Unmanned Vehicles. A Compendium, 2010p. 183 at developer. Nevertheless, in the view of the author this would hold also true for AWS.

transported.[158] The state has an obligation to introduce measures that govern natural and legal persons to act in a manner which is consistent with the international state obligations regarding the selling and transporting of weapons.[159] Where the manufacturer acts in a way that is inconsistent with the international obligations of the state (like arms embargos), the state can choose various forms of sanctions against the manufacturer.[160] These sanctions can include domestic criminal liability, reparations, the termination of the operation license or deregistration of the company.[161] To make this more practical, one example. Paragraph 9 of the UN-Security Council Resolution 1970 (2011)[162] lays down rules on an arms embargo to the Libyan Arab Jamahiriya. The UN-Security Council decided that all Member States shall immediately take the necessary measures to prevent the direct or indirect supply, sale or transfer of arms and related materiel of all types from or through their territories or by their nationals, or using their flag vessels or aircraft to the Libyan Arab Jamahiriya.[163] When Turkey deployed the lethal autonomous weapon systems STM Kargu-2 to the Libyan Arab Jamahiriya they infringed paragraph 9 of UN-Security Council resolution 1970 (2011).[164] The exceptions of paragraph 9 of UN-Security Council resolution 1970 (2011) seem to not apply in this case. Potentially Turkey could know choose the sanctions against the manufacturer.

The manufacturer can be punished for the sale and transfer of AWS when for instance an arms embargo will be infringed. But the manufacturer will only be punished through the domestic system.

d) For the use of AWS

aa) As indirect perpetrators

One of the elements of war crimes is that the conduct took place in the context of and was associated with an armed conflict.[165] Because of the complexity of an AWS their manufacturing process will probably take a long time and mostly will be done before the armed conflict even started. One of the main questions here is whether manufacturers can be held accountable for war crimes committed by AWS when they did their job before the armed conflict started.

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[158] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 41 at F, quoted after: Steinhardt, Ralph G., Weapons and the Human Rights Responsibilities of Multinational Corporations, in Casey-Maslen, Stuart, Weapons Under International Human Rights Law, 2014, 532.

[159] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 41 at F.

[160] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 41 f. at F.

[161] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 38 f. at B.

[162] *UN Security Council*, Resolution 1970, S/RES/1970 (2011).

[163] Paragraph 9 of UN-Security Council Resolution 1970 (2011).

[164] Also *UN Security Council*, Letter from the Panel of Exports on Libya to the President of the Security Council, Annex 30.

[165] See e.g. Element 4 of Article 8 (2) (a) (i) War crime of wilful killing of the Elements of crimes [*ICC*, Elements of Crimes, Doc No. ICC-PIDS-LT-03-002/11]; Element 4 of Article 8 (2) (b) (i) War crime of attacking civilians of the Elements of crimes; Element 4 of Article 8 (2) (b) (iv) War crime of excessive incidental death, injury, or damage of the Elements of Crimes; Element 4 of Article 8 (2) (c) (i)-1 War crime of murder of the Elements of Crimes; Element 4 of Article 8 (2) (e) (i) War crime of attacking civilians of the Element of Crimes.

A solution is to treat the person who intentionally programs an AWS to commit crimes as an indirect perpetrator of the war crime committed during the armed conflict.[166] Some scholars argue that this holds only true, if the deployer uses the AWS during an armed conflict without knowledge of the beforementioned defective programming.[167] If the deployer knows about the defective programming and still uses the AWS, then the programmer would be an accessory to the war crime.[168] Problematic is if it is even possible to program an AWS in a way that it will for sure result in the commission of crimes. Some scholars argue that neither the programming nor the command data inputted into the AWS will necessarily result in a specific outcome in response to any given set of circumstances.[169] It is very likely that the AWS will make choices other than those directly programmed into it.[170] Based on the AWS-definition of the majority[171], the last scenario is most likely (i.e. the programming and the command data do not result in a specific outcome). Thus, a manufacturer probably cannot program an AWS in a way that it will for sure result in the commitment of crimes. How we said before for the fulfillment of the mental elements of Article 30 Rome Statute recklessness or dolus eventualis is not sufficient.[172] The beforementioned opinion to view the manufacturer of AWS only as indirect perpetrator, when the deployer has no knowledge of the defective programming, needs to be rejected.

Nevertheless, it is still necessary to inquire if AWS-manufacturers can be seen as indirect perpetrators. Here it needs to be said that it would be very hard to establish the elements to prosecute the AWS-programmer as indirect perpetrator. Firstly, indirect perpetration from Article 25 (3) (a) alternative 3 Rome Statute speaks of commission of a crime "trough another person". Who could be the other person in the case of AWS? The only possible "another person" when an AWS commits a crime could be the deployer. We will later see (V. 2.) that the deployer has a very limited contribution to the commission of the crime of the AWS. The deployer only activates the AWS, but does not control it or has the possibility to override the AWS-actions.[173] There is no other person through which the crime would be committed. The only exception could be if we use an analogy here. Article 22 (2) sentence 1 Rome Statute states "The definition of a crime shall be strictly construed and shall not be extended by analogy.". According to the wording of Article 22 (2) sentence 1 Rome Statute this provision is only applicable to the

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[166] *Sassóli,* Autonomous Weapons and International Humanitarian Law. Advantages, open technical questions and legal issues to be clarified, International Law Studies 90 (2014), p. 325 at 2; *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 42 f.

[167] *Sassóli,* Autonomous Weapons and International Humanitarian Law. Advantages, open technical questions and legal issues to be clarified, International Law Studies 90 (2014), p. 325 at 2; *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 42 f.

[168] *Sassóli,* Autonomous Weapons and International Humanitarian Law. Advantages, open technical questions and legal issues to be clarified, International Law Studies 90 (2014), p. 325 at 2; *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 43.

[169] *Stewart,* New Technology and the Law of Armed Conflict, International Law Studies Series. US Naval War College 87, 2011; *McDougall*, Autonomous Weapon Systems and Accountability. Putting the Cart before the Horse, Melbourne Journal of International Law 20 (2019), p. 68; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 651.

[170] For autonomous Unmanned Vehicle Systems: Finn/ Scheding, Developments and Challenges for Autonomous Unmanned Vehicles. A Compendium, 2010p. 183 at developer. Nevertheless, in the view of the author this would hold also true for AWS.

[171] See II.

[172] See III. 2.

[173] See V. 2.

definitions of crimes. According to Schabas it makes sense to apply Article 22 (2) Rome Statute not only to the definitions of crimes, but also to relevant general principles that impact directly on their application, such as those governing participation in crimes and available excuses and justifications.[174] The ICC has so far not applied an analogy to Article 25 (3) Rome Statute, but how we will later see only to Article 28 Rome Statute[175]. It seems like Schabas is the only one having this opinion regarding the extended application of Article 22 (2) Rome Statute. The analog application of Article 25 (3) (a) alternative 3 Rome Statute seems to be disregarded by the absolute majority. There is no other person through which the manufacturer would commit possible crimes.

Establishing some of the material elements for the war crimes focused on in this thesis is as well hard. When looking for instance at the war crime of attacking civilians one of the elements for it is intentionally directing an attack.[176] If the programming of an AWS does not result in a specific outcome, the programmer also did not had the ability to program the AWS in the way that it will attack civilians. How could the programmer of an AWS intentionally direct an attack? In question is also, if the manufacturer in the above-mentioned case would have knowledge of the material elements of the war crime of attacking civilians [Article 30 (1) Rome Statute]. According to the second alternative of knowledge the person needs to have awareness that a consequence will occur in the ordinary course of events [Article 30 (3) sentence 1 alternative 2 Rome Statute]. This requires "virtual certainty".[177] This means that the person knows that his or her actions will necessarily bring about the consequence in question, barring an unforeseen or unexpected intervention or event to prevent its occurrence.[178] We are assuming again that neither the programming nor the command data inputted into the AWS will necessarily result in a specific outcome in response to any given set of circumstances. This would mean that a person who intentionally programs an AWS to commit crimes does not know that his/her programming will necessarily bring about the attacking of civilians. The programmer has not the awareness that a consequence will occur in the ordinary course of events. The programmer does not have knowledge according to Article 30 (3) sentence 1 alternative 2 Rome Statute. According to the first alternative knowledge means awareness that a circumstance exists [Article 30 (3) sentence 1 alternative 1 Rome Statute]. A strict interpretation of the wording "awareness that a circumstance exists" seems to limit the meaning of this standard of culpability to actual awareness of the relevant fact.[179] Being willfully blind regarding a circumstance does not fall under Article 30 (3) sentence 1 alternative 1 Rome Statute.[180] Willfully blindness means that the agent was aware that the fact probably existed, but deliberately refrained from obtaining the final confirmation.[181] Constructive knowledge (where a reasonable person would have recognized the circumstance) is also excluded from the notion of knowledge. For manufacturers of AWS who did their job prior to the conflict, it is most likely very hard to prove that they had actual awareness of the relevant facts of the war

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[174] *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 547.
[175] V. 3. a).
[176] See III. 2.
[177] See III. 2.
[178] See III. 2.
[179] *Badar/Porro*, in: Klamberg/ Nilsson: Commentary on the Law of the International Criminal Court (CLICC), 2017, Art. 30 (3) Rome Statute.
[180] *Ambos,* Treatise on International Criminal Law, under VII. (3) (c); *Badar/Porro*, in: Klamberg/ Nilsson: Commentary on the Law of the International Criminal Court (CLICC), 2017, Art. 30 (3) Rome Statute.
[181] *Badar/Porro*, in: Klamberg/ Nilsson: Commentary on the Law of the International Criminal Court (CLICC), 2017, Art. 30 (3) Rome Statute.

crimes. Manufacturers of AWS most likely also don't have knowledge according to Article 30 (3) sentence 1 alternative 1 Rome Statute]. Manufacturers who did their job prior to the conflict probably won't have knowledge of the material elements of the war crime of attacking civilians. To hold manufacturers accountable as indirect perpetrators for the war crimes of willful killing, attacking civilians and murder committed by AWS when they did their job before the armed conflict started is unconvincing.

In the authors view the prior result regarding the indirect perpetration of the manufacturer does not change when the manufacturer produced the AWS at a time where the armed conflict already started. For a prosecution of the manufacturer/roboticist/programmer for a war crime as a direct perpetrator, indirect perpetrator, co-perpetrator, aider or abettor, there must be a direct link with the armed conflict in question and the legal requirements of mens rea and actus reus must be satisfied.[182] When there is no direct link with the war crime in question, the manufacturer/roboticist may be prosecuted under domestic criminal law.[183] The beforementioned can be illustrated by the Bruno Tesch et. al.-case of the British Military Court 1946. Bruno Tesch was the owner of a company, which supplied poisonous gas to the German SS, and this gas was used to kill a lot of people in concentration camps.[184] Tesch and his authorized company signatory {in German "Prokurist"} Weinbacher were found guilty of war crimes.[185] According to the Military Court they fully know that the gas was used to commit war crimes.[186] The provided gas or the formular used to produce the gas may also have been produced or formulated before the outbreak of the war.[187] But this would not have excused Tesch and Weinbacher from being part of a war crime, as long as there is a direct link to the war crimes and mens rea.[188] Surely, the decision of the British Military Court can be criticized in different points. But this would lead to far to talk about this criticism when the topic of this work are AWS. Nevertheless, the case of the British Military Court illustrates an example of the beforementioned, surely not for AWS but for poisonous gas. In the case of the AWS-manufacturing during an armed conflict it will be fore sure much easier that the manufacturer could have foreseen the armed conflict. But still a manufacturer probably cannot program an AWS in a way that it will for sure result in the commitment of crimes. So, the beforementioned about the indirect perpetration of the manufacturer for the use of AWS would also hold true in this case.

Before we scrutinized the war crime of attacking civilians. The same result holds true for the other war crimes focused on in this thesis. The knowledge element is not sufficient also for these other war crimes. Accordingly, the manufacturer/roboticist/programmer can probably not

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[182] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 43.

[183] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 43.

[184] *British Military Court*, Case No. 9, Judgment of 8.3.1946, Trial of Bruno Tesch and Two others, p. 93 at 2. and p. 102 at 10.

[185] *British Military Court*, Case No. 9, Judgment of 8.3.1946, Trial of Bruno Tesch and Two others, mainly p. 93 at 2. and p. 102 at 10.

[186] *British Military Court*, Case No. 9, Judgment of 8.3.1946, Trial of Bruno Tesch and Two others, mainly p. 93 at 2. and p. 101 f. at 9 - 11.

[187] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 43.

[188] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 43 f.

be held accountable as an indirect perpetrator for the war crimes of willful killing, attacking civilians, murder and excessive incidental death, injury or damage committed by AWS.

bb) As aider and abettor

The problem concerning the conduct of the manufacturer before the armed conflict is also relevant here. How we saw before, regarding the crime committed by the principal perpetrator the aider and abettor must only 'mean […] to cause' the commission or '[be] aware that [the crime] will occur in the ordinary course of events' [Article 30 (2) (b) Rome Statute].[189] The accessor does not need to know the precise offence intended and in the specific circumstances committed.[190] It's sufficient that the accessor is aware of the essential elements of the offence.[191] Being aware of the essential elements of the offence means that it is sufficient if the aider and abettor is aware that one of a number of crimes will probably be committed, and one of those crimes is in fact committed.[192] We are assuming again that neither the programming nor the command data inputted into the AWS will necessarily result in a specific outcome in response to any given set of circumstances.[193] This would mean that a person who intentionally programs an AWS to commit crimes does not know that his/her programming will necessarily bring about the war crime of attacking of civilians, murder, willful killing or excessive incidental death. The manufacturer has not the awareness that the crime will occur in the ordinary course of events. Probably one can also not prove beyond reasonable doubt that the manufacturer meant to cause the commission of the crime committed by the principal perpetrator. The manufacturer probably can also not be aware of the essential elements of the offence. Simply because of the lack of connection between the programming and the specific actions by the AWS. The manufacturer cannot be aware that one of a number of crimes will probably be committed, and one of those crimes is in fact committed. Also, here we would have the problem of the principal perpetrator. The principal perpetrator will be the AWS.[194] But because of a lack of the legal personality of the AWS it will not be accountable. For his/her own conduct an aider and abettor must act intentionally [means to engage in the conduct pursuant to Article 30 (2) (a) Rome Statute], be aware that he/she is carrying out his/her acts [according to Article 30 (3) Rome Statute] and act for the purpose of facilitating the crime [Article 25 (3) (c) Rome Statute].[195] Once again, the manufacturer probably cannot be aware of the essential elements of the offence. The manufacturer of the AWS can probably not be punished as an aider and abettor.

cc) As a contributor to a group acting with a common purpose

Manufacturers could be contributors to a group acting with a common purpose if there is evidence of the common criminal purpose of the manufacturer and the deployer.[196] The common purpose would need to be committing war crimes. The significant contribution of the manufacturer would be the manufacturing, programming of the AWS and intentionally giving the deployer the AWS, which he/she will activate. The AWS would select and engage the

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[189] See IV. 4.
[190] See IV. 4.
[191] See IV. 4.
[192] See IV. 4.
[193] Like in V. 1. d) aa).
[194] See V. 1. b).
[195] See IV. 4.
[196] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 375.

civilian targets, civilian objects or the natural environment to commit the war crimes this thesis focuses on. This contribution has a bearing on the occurrence of the crime and/or the manner of its commission, i.e. is significant. Problematic is Element 2 of the constituent elements of liability under Article 25 (3) (d) Rome Statute, i.e. there needs to be a person who committed the crime. Who in this case would be the person who commits the war crimes - the deployer? But we saw before that it will not be the AWS-deployer and also not the commander.[197] The AWS itself will commit the crime.[198] Only natural persons can be criminally responsible under International Criminal Law [Article 25 (1) Rome Statute]. The AWS is not a natural person and could not be criminally responsible under International Criminal Law. The AWS is not a person. Manufacturers cannot be contributors to a group acting with a common purpose if there is evidence of the common criminal purpose of the manufacturer and the deployer.

dd) As responsible commanders

Marauhn is of the view that the programmer and operator come close to the "effective command and control" and thus should be responsible under Article 28 Rome Statute.[199] Whereas he thinks that the designer and manufacturer of AWS will not exercise "effective command and control".[200] It must be mentioned that Marauhn is very economical when it comes to the reasoning of his prior mentioned opinion. Also, for this reason it is necessary to enquire his opinions. We are going to start by recalling the most important things about the concept of "effective command and control" from Article 28 (a) Rome Statute. The concept of 'effective control' is mainly perceived as the material ability or power to prevent and punish the commission of offences.[201] In the context of Article 28 (a) of the Rome Statute, 'effective control' also refers to the material ability to prevent or repress the commission of the crimes or submit the matter to the competent authorities.[202] The duty to repress encompasses the duty to stop ongoing crimes from being continuing to be committed and the obligation to punish forces after the commission of crimes.[203] Examples for the indication of existence of a command's position of authority and effective control are: i) the official position of the subject, ii) his/her power to give orders, iii) the capacity to ensure compliance with the orders issued, iv) his/her position within the military structure and the actual tasks carried out by him/her, v) the capacity to order forces under his/her command to engage in hostilities, vi) the capacity to re-subordinate units or make changes to command structure, vii) the power to promote, replace, remove, or discipline any member of the forces, viii) the authority to send forces where hostilities take place and withdraw them at any given moment.[204] The author of this thesis sees absolutely no possibility that programmers, operators, designers or manufacturers of AWS will have the material ability or power to punish the commission of offences committed by AWS. The programmer, designer and manufacturer have no duty to repress. They don't have the duty to stop ongoing crimes from being continuing to be committed and the obligation to punish forces after the commission of crimes. To make assumptions about the material power to submit the

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[197] See V. 1. b).

[198] See V. 1. b).

[199] *Marauhn*, An Analysis of the Potential Impact of Lethal Autonomous Weapons Systems on Responsibility and Accountability for Violations of International Law, at D.

[200] *Marauhn*, An Analysis of the Potential Impact of Lethal Autonomous Weapons Systems on Responsibility and Accountability for Violations of International Law, at D.

[201] See IV. 6.

[202] See IV. 6.

[203] See IV. 6.

[204] See IV. 6.

matter to the competent authorities is very difficult. It is more likely that the programmer, operator, designer or manufacturer will have the material ability or power to prevent the commission of offences. The programmer has the power to prevent the commission of offences by ensuring his/her programming is complying with all necessary requirements of International Humanitarian Law, International Human Rights Law and Weapons Law. We saw before that neither the programming nor the command data inputted into the AWS will necessarily result in a specific outcome in response to any given set of circumstances.[205] It very likely that AWS will make choices other than those directly programmed into it.[206] Nevertheless, probably the more compatible the programming of an AWS is with IHL, IHRL and Weapons Law the lower the likelihood that an AWS commits a crime. The programmer probably will not have the full power to prevent the commission of offences. When we are looking at the previous mentioned examples for the indication of existence of a command's position of authority and effective control, for a programmer only the fourth example iv) his/her position within the military structure and the actual tasks carried out by him/her could be applicable. As mentioned before the task of the programmer is a very important one when it comes to the functioning of AWS. However, if the programmer will be part of the military his/her position within the military structure will probably be a pretty low one. The actual tasks could be an indicator of a command's position of authority and effective control, however the low military position is an indicator against this. If the programmer has a command's position of authority and effective control will be decided in the special case. However, it is more likely that the programmer, designer and manufacturer have no effective command and control over AWS.

Even if one would view the programmer/manufacturer as commanders, who are the forces/subordinates who are under the command and control of the commander, and which committed the war crimes? The only other options are to view either the deployer or the AWS itself as the forces/ subordinates which committed the war crimes. Whereas the deployer falls undoubtedly under the term "forces"/"subordinates", it is unclear for AWS. The deployer only activates the AWS but does not control the actions of the AWS. One cannot speak of the deployer having committed the war crimes. We will later see that the AWS cannot be seen as forces/subordinates.[207]

Another constituent element of command responsibility is if the commander/superior failed to take all necessary and reasonable measures within his or her power to prevent the crimes, repress their commission or to submit the matter to the competent authorities for investigation and prosecution. For the manufacturer/programmer the measures to prevent the crimes will probably be very limited. One of the main measures is to design and manufacture the AWS according to the contemporary rules of IHL, IHRL, Weapons Law and national law. Another measure is to be informed to a sufficient degree about the buyer of the AWS/for who the AWS is produced, and where and when they plan to use the AWS.

Article 28 Rome Statute probably will not be applicable to the programmer, designer and manufacturer. The reason for this is the missing effective command and control over the AWS

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[205] See V. 1. d) aa).
[206] See V. 1. d) aa).
[207] See V. 3. a).

and there are no forces/subordinates who are under the command and control of the programmer, designer and manufacturer, and which committed the war crimes.

2. Deployer/Operator responsibility

In the following the term deployer will be used. Other authors use the term operator, which refers to the same idea. The deployer activates the AWS on the battlefield[208], but does not control it.[209] The actions of the AWS are unpredictable to the deployer of the AWS.[210] Once the AWS was activated, there is no human overriding of the AWS-actions possible.[211]

Direct perpetrators have immediate responsibility for the physical or material criminal acts.[212] Thus, the deployer of AWS cannot be seen as direct perpetrator.[213] One of the reasons for this conclusion is that proving the mens rea of the deployer might be difficult, if not impossible.[214] The deployer does not mean to cause the consequence or is aware that it will occur in the ordinary course of events [intent according to Article 30 (2) (b) Rome Statute].[215] He/she also does not have awareness that a circumstance exists or a consequence will occur in the ordinary course of events [knowledge according to Article 30 (3) Rome Statute].[216]

The deployer cannot be seen as an indirect perpetrator. The indirect perpetrator needs to commit a crime "trough another person" [Article 25 (3) (a) alternative 3 Rome Statute]. The AWS cannot be seen as another person. Thus, if the AWS commits a crime the deployer of the AWS does not commit the crime "trough another person". An analog application of Article 25 (3) (a) alternative 3 Rome Statute seems to be not according to the current law.[217] Like in V. 1. d) aa), to establish some of the material elements for the war crimes focused on in this thesis is as well hard: When we are looking at the war crime of attacking civilians, how could the deployer of an AWS intentionally direct an attack? The deployer only activates the system but does not control it.[218] The person which deploys an AWS does not know that it will necessarily bring about the attacking of civilians. The deployer has not the awareness that a consequence will occur in the ordinary course of events. The programmer does not have knowledge according to Article 30 (3) sentence 1 alternative 2 Rome Statute. For deployers it is most likely very hard to prove that they had actual awareness of the relevant facts of the war crimes. Deployers of

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[208] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 375.

[209] *Ford*, Autonomous weapons and International Law, South Carolina Law Review 69 (2017), p. 466; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 652 at 2.

[210] Also *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 20; *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 384.

[211] See II.

[212] See IV. 1.

[213] Probably with the same conclusion, because of the high degree of autonomy of the inquired AWS in this thesis: *Ford*, Autonomous weapons and International Law, South Carolina Law Review 69 (2017), p. 466.

[214] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 20 - 21.

[215] Comparable to V. 1. d) aa).

[216] Comparable to V. 1. d) aa).

[217] See V. 1. d) aa).

[218] See prior in this paragraph.

AWS most likely also don't have knowledge according to Article 30 (3) sentence 1 alternative 1 Rome Statute. To hold deployers accountable as indirect perpetrators for the war crimes of willful killing, attacking civilians and murder committed by AWS is unconvincing.

The deployer of an AWS might also be an aider and abettor in the sense of Art. 25 (3) (c) Rome Statute. To briefly recall the requirements for an aider and abettor: For his/her own conduct an aider and abettor must act intentionally, be aware that he/she is carrying out his/her acts and act for the purpose of facilitating the crime.[219] Regarding the crime committed by the principal perpetrator the aider and abettor must only 'mean […] to cause' the commission or '[be] aware that [the crime] will occur in the ordinary course of events' [Article 30 (2) (b) Rome Statute].[220] To bear in mind is that the accessor does not need to know the precise offence intended and in the specific circumstances committed.[221] It's sufficient that the accessor is aware of the essential elements of the offence.[222] The AWS-deployer could be aiding and abetting through the activation of the AWS in a certain region during a certain time. It is likely that it can be proven beyond reasonable doubt that the deployer acted intentionally, was aware that he/she is carrying out his/her acts and acts for the purpose of facilitating the crime. Logically the acting for the purpose of facilitating the crime is only possible if the deployer is aware that a crime might be committed trough the AWS. Regarding the crime committed by the principal perpetrator we have again the problem of the principal perpetrator. How we saw before the principal perpetrator will be the AWS itself.[223] Probably one can also not prove beyond reasonable doubt that the deployer meant to cause the commission of the crime committed by the principal perpetrator. The deployer probably can also not be aware of the essential elements of the offence. Simply because of the lack of connection between the programming/command date and the specific actions by the AWS. The deployer of an AWS cannot be an aider and abettor in the sense of Art. 25 (3) (c) Rome Statute.

Deployers could be contributors to a group acting with a common purpose if there is evidence of the common criminal purpose of the manufacturer and the deployer.[224] The common purpose would need to be committing war crimes. The significant contribution of the manufacturer would be the activation of the AWS. The AWS would select and engage the civilian targets, civilian objects or the natural environment to commit the war crimes this thesis focuses on. This contribution by the deployer has a bearing on the occurrence of the crime and/or the manner of its commission. Without the activation of the AWS the AWS would not have committed potential crimes. I.e. the contribution of the deployer is significant. Problematic is Element 2 of the constituent elements of liability under Article 25 (3) (d) Rome Statute, i.e. there needs to be a person who committed the crime. Who in this case would the person be who commits the war crimes? The defining of the behavior of the AWS by the manufacturer is not enough. The commander ordered the activation of the AWS, so he/she didn't commit the crime themselves. Moreover, the AWS itself would commit the crimes themselves. Problematic is only natural persons can be criminally responsible under International Criminal Law [Article 25 (1) Rome Statute]. The AWS is not a natural person and could not be criminally responsible under

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[219] See IV. 4.
[220] See IV. 4.
[221] See IV. 4.
[222] See IV. 4.
[223] See V. 1. b).
[224] *McFarland/ McCormack,* Mind the gap. Can developers of Autonomous Weapon Systems be liable for war crimes?, International Law Studies 90 (2014), p. 375.

International Criminal Law. In the case of AWS there is no person who commits the war crimes. Deployers can't be contributors to a group acting with a common purpose if there is evidence of the common criminal purpose of the manufacturer and the deployer.

Marauhn has the opinion that the deployer comes close to the "effective command and control" and thus should be responsible under Article 28 Rome Statute.[225] One needs to make clear that the AWS-deployer has not the material ability or power to prevent and punish the commission of offences. The deployer only activates the AWS on the battlefield. The time and location of the AWS-activation the deployer will in almost all cases receive from the commander/superior. The only way to prevent the commission of offences for the deployer is to not deploy the AWS at all or deploy the AWS in a totally different location (e.g. where there are no people at all) or to a different time. But in this case the deployer would risk being dismissed from his/her job or face internal sanctioning. There is no scenario foreseeable where the deployer has the material ability or power to punish the commission of offences. The deployer has not the duty to stop ongoing crimes from being continuing to be committed and the obligation to punish forces after the commission of crimes, so no duty to repress. To make assumptions about the material power to submit the matter to the competent authorities is very difficult. The deployer most likely will not be responsible under Article 28 Rome Statute, because the effective command and control is missing.

3. Command/ Superior responsibility

Leaders who make irresponsible decisions about the deployment of AWS may also be held accountable. The commander will order the activation of the AWS to the deployer. This will include ordering the time and location of the AWS-activation.

a) AWS as forces/subordinates

One problem for command responsibility is: Who are the forces/subordinates which are under the command and control of the commander, and which committed the war crimes? The AWS might be the subordinate which committed the crime, but the AWS cannot be criminally punished. Can we still see the AWS as "forces" under Article 28 (a) Rome Statute? We need to make clear what the term "forces" under Article 28 (a) Rome Statute means. According to Article 31 (1) Vienna Convention on the Law of Treaties (VCLT)[226] a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose. According to the Cambridge dictionary the term 'force' in the military context describes an organized and trained military group.[227] Just concluding from this, an AWS can be part of an organized and trained military group. But according to Article 31 (1) VCLT the terms of the treaty need to be interpreted in their context and in the light of its object and purpose. The purpose of Article 28 Rome Statute is to punish commanders for crimes committed by their superiors for a failure to exercise proper control of their subordinates. Article 25 (1) Rome Statute states that the ICC shall have jurisdiction over natural persons pursuant to the Rome Statute. By reading Article 28 Rome Statute in

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[225] See V. 1. d) dd).
[226] Vienna Convention on the Law of Treaties, 23.5.1969, U.N.T.S. vol. 1155, p. 331, entered into force 27.1.1980.
[227] *Cambridge Dictionary,* force, at noun (military).

conjunction with Article 25 (1) Rome Statute the term "forces" under Article 28 (a) Rome Statute can only refer to subordinates which are natural persons. AWS are not natural persons. Thus, AWS are not forces under the effective command and control, or effective authority and control of the commander [Article 28 (a) Rome Statute].

The only exception to the prior said could be if the term "forces" of Article 28 (a) Rome Statute could be applied through the use of an analogy. Article 22 (2) sentence 1 Rome Statute states "The definition of a crime shall be strictly construed and shall not be extended by analogy.". According to the wording of Article 22 (2) sentence 1 Rome Statute this provision is only applicable to the definitions of crimes. According to Schabas it makes sense to apply Article 22 (2) Rome Statute not only to the definitions of crimes, but also to relevant general principles that impact directly on their application, such as those governing participation in crimes and available excuses and justifications.[228] Pre-Trial Chamber II of the ICC has in the case *Bemba* referred to the principles of nullum crimen sine lege and strict interpretation from Article 22 (2) Rome Statute when interpreting whether the chapeau of Article 28 (a) Rome Statute includes an element of causality between a superior's dereliction of duty and the underlying crimes.[229] This shows that it is at least possible to apply Article 22 (2) Rome Statute not only to the definitions of crimes, but also to Article 28 Rome Statute. Even if Article 22 (2) Rome Statute applies also to Article 28 Rome Statute, it would probably lead to the non-application of analogy to the term "forces" of Article 28 (a) Rome Statute. Because then Article 22 (2) sentence 1 Rome Statute needs to be read as "The definition of a crime [and Article 28 of the Rome Statute, addition by E.H.] shall be strictly construed and shall not be extended by analogy." Accordingly, AWS are not forces in the sense of Article 28 (a) Rome Statute. AWS can also not be subordinates in the sense of Article 28 (b) Rome Statute. According to the Cambridge dictionary a subordinate is a person who has a less important position than you in an organization.[230] By reading Article 28 Rome Statute in conjunction with Article 25 (1) Rome Statute the term "subordinates" under Article 28 (b) Rome Statute can only refer to subordinates which are natural persons. To use an analogy here is probably also not possible (the same as before with the term "forces").

The other two options are to see either the manufacturer or the deployer of the AWS as the subordinate. Here the question is if the manufacturer/deployer committed the war crimes. To see the manufacturer as the person which committed the war crime could be difficult. We saw before that even where a manufacturer intentionally programs an AWS to commit crimes does not know that his/her programming will necessarily bring about the war crime of attacking of civilians, murder, willful killing, or excessive incidental death.[231] The manufacturer has not the awareness that the crime will occur in the ordinary course of events.[232] We also saw before that the deployer did not commit the crimes.[233]

The manufacturer/ deployer could be seen as forces/subordinates, but they didn't commit the war crimes. AWS cannot be seen as subordinates, thus the commander cannot have known or

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[228] *Schabas*, The International Criminal Court. A Commentary on the Rome Statute, 2nd Edition 2016, p. 547.
[229] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 423.
[230] *Cambridge Dictionary,* subordinate, at noun.
[231] See V. 1. a).
[232] See V. 1. a).
[233] See V. 1. b).

basically should have known that the 'subordinates' were committing or about to commit war crimes.

b) The commander either knew or should have known

Another problem is if the commander either knew or basically should have known that the subordinates were committing or about to commit war crimes [Article 28 (a) (i) and (b) (i) Rome Statute]. Per definition an AWS self-initiates or triggers an attack in response to information from the environment received through sensors and on the basis of a generalized target profile.[234] To prove that a commander knew about the commission of the war crimes by the AWS is probably impossible.[235] For the commander to know about the commission of the war crimes he/she must fully understand the programming, the decision-making and must be able to predict the actions of the AWS in every scenario. AWS have such a high complexity that it probably will be very unlikely that the commander fulfils the prior mentioned criteria. Another situation in which the commander would have knowledge of the crimes committed by the AWS is: If an AWS would communicate its target selection prior to initiating the attack, and the "human on the loop" reviews the target and is able to stop the attack of the AWS.[236] But that is not included in the definition of AWS this thesis focuses on.

Now we're going to look if the commander should have known that the subordinates were committing or about to commit war crimes. How we have seen before for this the superior merely needs to have been negligent in failing to acquire knowledge of his subordinates illegal conduct.[237] This should have known-standard requires more of an active duty on the part of the superior to take the necessary measures to secure knowledge of the conduct of his/her troops and to inquire, regardless of the availability of information at the time of the commission of the crime.[238] Depending on the circumstances of each case the ICC considers inter alia the following criteria as 'should have known': (i) he/she had general information to put him/her on notice of crimes committed by subordinates or of the possibility of occurrence of the unlawful acts and (ii) such available information was sufficient to justify further inquiry or investigation.[239] In the ICC's view the failure to punish past crimes committed by the same group of subordinates may be an indication of future risk.[240]

Here we have again the question who the subordinates are which committed or were about to commit war crimes. We saw before that the AWS cannot be seen as subordinates, thus the commander cannot have known or basically should have known that the 'subordinates' were committing or about to commit war crimes. If we see the AWS as a subordinate (differing to the authors opinion), some questions during the assessment of the "should have known"-criteria are hard to answer. Firstly, does the knowledge of past unlawful acts committed by one AWS provide notice of the possibility of the occurrence of unlawful acts only for that particular AWS, or for all AWS of its make, model, and/or programming?[241] Would knowledge of one type of

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[234] See II.

[235] Also *Sehrawat*, Autonomous weapon system and command responsibility, Florida Journal of International Law 31 (2020), p. 325.

[236] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 22.

[237] See IV. 6.

[238] See IV. 6.

[239] See IV. 6.

[240] See IV. 6.

[241] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 23.

past unlawful act - such as the AWS mistaking a civilian for a combatant (a failure of distinction) - trigger notice of the risk of other types of unlawful acts, such as a failure to accurately determine the proportionality of a future strike?[242] Would fully autonomous weapons be predictable enough to provide commanders with the requisite notice of potential risk?[243] Would liability depend on a particular commander's individual understanding of the complexities of programming and autonomy?[244] Depending on those answers a commander might or might not have fulfilled the 'should have known'-standard. If we view the manufacturer as the subordinate, the questions to assess the "should-have-known"-standard are not easier and to find the necessary proof during potential future court proceedings is not easier. If the manufacturer has programmed the AWS to not distinct between military personnel and civilians, and the AWS gets deployed and exactly this problem will result in the field in the death of civilians, has the commander failed to acquire knowledge of the programmer's illegal conduct? This would most likely depend if the commander had information to put him/her on notice of the possibility of the wrongful programming of the AWS and thus the possible resulting in war crimes. And that such available information was sufficient to justify further inquiry or investigation. One possible example in which the "should have known"-standard would be fulfilled is: During the manufacturing of the AWS somebody of the manufacturing team noticed a potential wrongful programming of the AWS. Either through the official ways or through the word-of-mouth this information came into the area of knowledge of the commander. Such information would be sufficient for the commander to justify further inquiry or investigation. Even though neither the programming nor the command data inputted into the AWS will necessarily result in a specific outcome in response to any given set of circumstances[245] and the commander knows about this fact. Nevertheless, the wrongful programming and the likelihood of the possibility of committing crimes when deploying the AWS should have been enough information for the commander to further inquire this. Probably this holds also true if the commander already did all the necessary tests[246] for the AWS, but the information about the wrongful programming comes into the commander's area of knowledge after these tests. At least theoretically it seems possible that AWS are wrongfully programmed in that way that during test conditions the wrongful conduct does not show up. Only in real armed conflict the wrongful conduct might come into play. This might remind some people of the similar example, but in a different field. The author refers to the car company Volkswagen and their exhaust-emission scandal.[247] But if this is possible with cars, why shouldn't it also be possible with AWS?

The manufacturer and deployer could also be seen as subordinates. Nevertheless, the manufacturer and deployer do not commit the crimes themselves.[248] The manufacturer defines the behavior of an AWS[249], the deployer activates the AWS on the battlefield, but does not control it.[250] Command responsibility for the manufacturer and deployer is not fulfilled for the

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[242] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 23.

[243] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 23.

[244] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 23.

[245] See V. 1. d) aa).

[246] See V. 3. c).

[247] For more details about the Volkswagen-scandal see inter alia: *Stockrahm/ Uken,* Volkswagen. Was wir über den Abgasskandal wissen {Volkswagen. What we know about the exhaust emission scandal}.

[248] See V. 1. and V. 2.

[249] See V. 1.

[250] See V. 2.

essential element of either 'knew' or basically 'should have known that the subordinates were committing or about to commit war crimes' [Article 28 (a) (i) and (b) (i) Rome Statute].

c) Fail to take all necessary and reasonable measures

Problematic as well is if the superior failed to take all necessary and reasonable measures within his or her power to prevent the crimes, repress their commission or to submit the matter to the competent authorities for investigation and prosecution [Article 28 (a) (ii) and (b) (iii) Rome Statute].

The measures the ICC considered in the *Bemba Gombo*-case[251] won't help us in the case of AWS. One potential measure to prevent war crimes by AWS is to abstain from the use of AWS. But is this a reasonable measure? According to the ICC that what constitutes a reasonable and necessary measure will be assessed on the basis of the commander's de jure power as well as his de facto ability to take such a measure.[252] If this is the case, the assessment of the reasonable and necessary measures will occur in every case individually. This thesis can't make that assessment for the case of AWS. Mostly because of insufficient information to make a case-per-case analysis. Rather this thesis is going to debate another point. Let's assume the assessment in the particular case came to the conclusion that the commander has the de jure power and the de facto ability to abstain from the use of AWS. In the authors opinion it is still questionable if this would be a reasonable measure. If we assume further that the manufacture, sale and use of AWS is at the current time of the assessment of the particular case not forbidden. Then there will be potentially in the future dozens of nations, armed groups etc. who have AWS in their possession. Abstaining from the use of AWS for a particular nation/armed group etc. will be a big military disadvantage for them. Especially when the other nations/armed groups etc. do not abstain from the use of AWS. In the authors view it should also play a role how likely it is that the AWS will commit war crimes. The commander should be in any case obliged to look at all the AWS that nations/armed groups etc. have used before, how alike/different to one's own AWS they are and how likely it was that these committed crimes. Or at least information on those nations/armed groups etc. where the obtainment of these AWS-information is possible with a reasonable amount of trouble. The commander should be obliged to compare this to the likelihood that the AWS will reach the military objective which possibly should be reached by it. The author of this thesis pleads for the requirement of proportionality/likelihood when assessing the reasonableness of the measures to prevent crimes for the commander. I.e. the commander and later the national courts, International Courts/Tribunals need to assess if the military objective achieved by the AWS is proportional to the likelihood of the AWS to commit crimes. If there is little disproportionality/no disproportionality between these, the commander could have used the AWS. Thus, there was no need for the commander to abstain from the use of AWS and forbid his subordinates to use AWS. If there is a high disproportionality between the military objective achieved by the AWS and the likelihood of the AWS committing crimes, the commander needed to abstain from the use of AWS and forbid his subordinates to use AWS.

Another measure to prevent AWS from committing crimes is the sufficient testing of the AWS prior to its use in the field. The commander must look what the AWS is designated to do and

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[251] See IV. 6.
[252] ICC, *Prosecutor v. Bemba Gombo*, Pre-Trial Chamber II, Decision Pursuant to Article 61(7)(a) and (b) of the Rome Statute on the Charges of the Prosecutor, 15.6.2009, Case-No. ICC-01/05-01/08, para. 443.

what prior testing has shown the AWS to be able to reliably and consistently do.[253] This information will be obtained when an AWS is tested prior to the review of the new weapon system of the state. Article 36 of Additional Protocol I to the 1949 Geneva Conventions[254] requires States to determine if new weapons would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the state. This review involves also to determine whether the new weapon would be inherently indiscriminate or requires legal restrictions on its use.[255] This determination is done through the review of the technical performance of the weapon.[256] The assessment of the technical performance includes:

- the accuracy and reliability of the targeting mechanism (including e.g. failure rates, sensitivity of unexploded ordnance, etc.),
- the area covered by the weapon,
- whether the weapons' foreseeable effects are capable of being limited to the target or of being controlled in time or space (including the degree to which a weapon will present a risk to the civilian population after its military purpose is served).[257]

This initial need to test the capabilities of an AWS is the same than with any new weapon that enters the military's arsenal.[258] But to appropriately comply with the principles of distinction and proportionality, commanders need to understand how reliable an AWS can identify military targets and its tested rates of falsely identifying civilian objects as military targets.[259] The commander needs to assess as well the circumstances in which the AWS will be deployed, and the nature and type of operations in which the system can be expected to function appropriately.[260]

We saw before that the duty to repress encompasses the duty to stop ongoing crimes from being continuing to be committed and the obligation to punish forces after the commission of crimes.[261] A commander could infringe his duty to repress if he has knowledge of ongoing crimes of AWS and does not stop the commitment of these (e.g. by taking the AWS out of the field). If one views the AWS as the offender committing the crimes, the commander usually would have the obligation to punish his forces after the commission of crimes. Unclear is how an AWS can be punished? Sure, an AWS can be destroyed after having committed war crimes. But this will not fulfil the most important functions of punishment after committing international crimes. These are retribution and general deterrence.[262] Retribution leads to rectifying of the moral balance by infliction of punishment, in particular through condemnation

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[253] *Meier*, phone interview with Miller, quoted after: Miller, Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 539 at III.

[254] Protocol Additional to the Geneva Conventions of 12. August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, entry into force 7.12.1978 [Additional Protocol I to the 1949 Geneva Conventions].

[255] *Miller*, Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 540.

[256] *ICRC,* A Guide to the Legal Review of New Weapons, p. 18 at 1.3.2.

[257] *ICRC,* A Guide to the Legal Review of New Weapons, p. 18 at 1.3.2.

[258] *Miller*, Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 540.

[259] *Miller*, Command Responsibility. A model for defining meaningful human control, Journal of National Security Law & Policy 11 (2021), p. 540.

[260] *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 653.

[261] See IV. 6.

[262] *Drumbl*, in: Kastner, International Criminal Law in Context, 2018, p. 312 + 314.

of the criminal conduct.[263] This might be fulfilled by destroying the AWS after having committed an international crime. However, general deterrence won't be fulfilled by destroying the AWS. General deterrence is understood as dissuading others from offending in the future.[264] When an AWS is being destroyed for having committed a crime, this will not dissuade other AWS from committing international crimes. In the authors view destroying an AWS could only lead to other states manufacturing/buying/deploying less AWS in the future. But this will only indirectly dissuade others from offending in the future. In the authors view an AWS cannot be punished accordingly for committing crimes to fulfil the most important functions of punishment after committing international crimes. Some authors argue that an AWS cannot be punished at all.[265] The commander might have the obligation to punish forces after the commission of crimes. As a matter of practicability, it needs to be said that the commander cannot punish AWS after the commission of crimes by them. From the duty to repress the commander can fulfil the duty to stop ongoing crimes from being continuing to be committed, but not the obligation to punish forces after the commission of crimes.

It is possible that the superior took all necessary and reasonable measures within his or her power to prevent the crimes or to submit the matter to the competent authorities for investigation and prosecution. But a commander can't repress the commission of crimes. However, according to the wording of Article 28 (a) (ii) and (b) (iii) Rome Statute only one of these three things needs to be fulfilled.

d) AWS under the effective control of the commander

The matter of effective control is also not that simply to determine in the context of AWS. So, there is a need to settle the question if AWS are forces under the effective command and control, or effective authority and control of the commander [Article 28 (a) Rome Statute]. We saw before that AWS are not forces in the sense of Article 28 (a) Rome Statute.[266]
The second question is if AWS are under the effective command and control, or effective authority and control of the commander [Article 28 (a) Rome Statute]. The concept of 'effective control' is mainly perceived as the material ability or power to prevent and punish the commission of offences.[267] In the context of Article 28 (a) of the Rome Statute, 'effective control' also refers to the material ability to prevent or repress the commission of the crimes or submit the matter to the competent authorities.[268] The duty to repress encompasses the duty to stop ongoing crimes from being continuing to be committed and the obligation to punish forces after the commission of crimes.[269] Examples for the indication of existence of a superior's position of authority and effective control: i) the official position of the subject, ii) his/her power to give orders, iii) the capacity to ensure compliance with the orders issued, iv) his/her position within the military structure and the actual tasks carried out by him/her, v) the capacity to order forces under his/her command to engage in hostilities, vi) the capacity to re-subordinate units or make changes to command structure, vii) the power to promote, replace, remove, or discipline any member of the forces, viii) the authority to send forces where hostilities take

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[263] *Drumbl*, in: Kastner, International Criminal Law in Context, 2018, p. 313.
[264] *Drumbl*, in: Kastner, International Criminal Law in Context, 2018, p. 313.
[265] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 23.
[266] See V. 3. a).
[267] See IV. 6.
[268] See IV. 6.
[269] See IV. 6.

place and withdraw them at any given moment.[270] We saw before at V. 3. c) that the commander can prevent AWS from committing crimes by refraining from their use or through the sufficient testing of the AWS prior to its use in the field. The commander has probably the material ability or power to prevent the commission of offences by AWS. The commander might have the obligation to punish forces after the commission of crimes. Before it was also stated that as a matter of practicability the commander cannot punish an AWS after the commission of crimes by them.[271] The commander might have the power to punish AWS as potential forces (when agreeing with the author and his conclusion from V. 3. a)) after the commission of crimes, but practically he/she cannot punish AWS accordingly. Nevertheless, the commander has the power to prevent or to repress the commission of the crimes. If the commander/superior does not have the necessary ability to take the necessary measures probably he/she will have the power to refer the matter to the competent authorities. A definite answer to this can only be given in the specific case. Nevertheless, it's likely that the commander/superior will have the power to refer the matter to the competent authorities. Additionally, the commander/superior probably will also have the power to give orders, at least to deploy an AWS, where to deploy it and when the deployment of the AWS will be over. The commander/superior will also probably have the capacity to order forces (if one sees AWS as the force in agreement with the author) under his/her command to engage in hostilities, i.e. if the AWS will be deployed in an area where hostilities are going on. Not to forget the power to replace and remove any member of the forces, i.e. the commander can decide if and when to replace AWS system XYZ and when to remove it from the forces. AWS can probably be under the effective command and control, or effective authority and control of the commander.

However, it needs to be kept in mind that prosecuting command responsibility is usually difficult.[272] Because it requires state cooperation and provision of internal military evidence to prove the elements of knowledge and effective control.[273]

4. Individual responsibility of the commander

The position of a commander or superior can also be used to establish individual responsibility for them outside of Article 28 Rome Statute, for example where the commander ordered, aided and abetted the commission of a crime.[274]

a) As direct perpetrator

Direct perpetrators have immediate responsibility for the physical or material criminal acts.[275] The commander orders the activation of the AWS (including ordering the time and location of

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[270] See IV. 6.
[271] See V. 3. c).
[272] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 21; *Bishai,* Superior Responsibility, Inferior Sentencing: Sentencing Practice at the International Criminal Tribunals, Northwestern University Journal of International Human Right, vol. 11 issue 3, 2013, p. 86 - 87.
[273] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 21; *Bishai,* Superior Responsibility, Inferior Sentencing: Sentencing Practice at the International Criminal Tribunals, Northwestern University Journal of International Human Right, vol. 11 issue 3, 2013, p. 86 - 87.
[274] *Chengeta*, Accountability gap. Autonomous Weapon Systems and modes of responsibility in International Law, Denver Journal of International Law and Policy 45 (2016), p. 28.
[275] See IV. 1.

the AWS-activation).[276] The AWS commits the criminal acts themselves. In this constellation a commander can never be a direct perpetrator, because of a lack of immediate responsibility for the criminal acts. The mental elements of a commander as direct perpetrator will probably never be proven beyond reasonable doubt. For the war crime of willful killing and murder the perpetrator needs to be aware of the protected status of the victim.[277] Because of the high autonomy of AWS and the complexity of their decision-making processes, the commander could probably not have been aware of the protected status of the victim.[278] These elements of the crimes will not be fulfilled. The commander cannot be a direct perpetrator.

b) As co-perpetrators

Military planners and commanders may coordinate to employ an AWS despite the fact that for the given circumstance or environment, it cannot distinguish between civilians and combatants with reasonable certainty. According to Ford if commanders and planners know this, arguably they could be considered co-perpetrators (with one another) if the autonomous system commits a war crime.[279] A co-perpetrator is a person to whom essential tasks have been assigned, thus they have control over the offence along with others.[280] Questionable in this case is if the commander(s) and planner(s) have an essential task. This would be the case when those persons have the power to frustrate the commission of the crime by not performing their tasks.[281] The commander will order the activation of the AWS to the deployer (this includes ordering the time and location of the AWS-activation).[282] If the commander does not order the activation of the AWS to the deployer the AWS probably will not be activated. This holds at least true if the deployer does not decide by him-/herself (i.e. without orders of the commander) to activate the AWS. It can be said that the commander has the power to frustrate the commission of the crime by not performing the beforementioned tasks. The military planners plan the time and location of the AWS-activation together with the commander. If the military planners do not perform their task, this would not be a big of a problem. The commander could plan the time and location of the AWS-activation themselves. Thus, the military planners do not have the power to frustrate the commission of the crime by abstaining from performing their task. Another problem is that the AWS as direct perpetrator cannot be criminally responsible. But this should not be a problem. In the case of indirect perpetrators, it is also possible that the executor/direct perpetrator will be criminally not responsible for his/her actions because of a to young age to reach the capacity for blameworthiness.[283] According to this, it should not be a problem if the co-perpetrators are criminally responsible, but the AWS as direct perpetrator will not be criminally responsible. The existence of the agreement or common plan between the commander and planner in the prior mentioned example should be existing. To view the commander and the military planners as co-perpetrators is unconvincing.

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[276] See V. 3.
[277] See III. 1.
[278] Partly also: *Ford*, Autonomous weapons and International Law, South Carolina Law Review 69 (2017), p. 467.
[279] *Ford*, Autonomous weapons and International Law, South Carolina Law Review 69 (2017), p. 469.
[280] See IV. 2.
[281] ICC, *Prosecutor v. Lubanga*, Pre-Trial Chamber I, Decision on the confirmation of charges, 29.1.2007, Case-No. ICC-01/04-01/06, para. 347; *Prosecutor v. Lubanga*, Trial Chamber I, Judgment pursuant to Article 74 of the Statute, 14.3.2012, Case-No. ICC-01/04-01/06, para. 994.
[282] See V. 3.
[283] See IV. 3.

Another option is to consider the commander(s) and the AWS-deployer as co-perpetrators. For this an agreement or common plan between them needs to exist. How we saw before the existence of the agreement/common plan can be inferred from the subsequent joint action of the co-perpetrators.[284] For the sake of simplicity we will assume a scenario where the commander and the deployer are aware that the AWS for the given circumstance or environment cannot distinguish between civilians and combatants with reasonable certainty. We prior assumed that neither the programming nor the command data inputted into the AWS will necessarily result in a specific outcome in response to any given set of circumstances.[285] We also assumed that it is very likely that the AWS will make choices other than those directly programmed into it.[286] Nevertheless, before the deployment of the AWS the commander needs to have tested the AWS sufficiently.[287] In almost all cases the commander should be able to assess how the AWS will react in a real battlefield situation. Prima facie the only exception to this is a situation like in the Volkswagen exhaust-emission scandal, but with AWS.[288] This should be sufficient for the mens rea of the commander. In this case without the activation of the AWS by the deployer the AWS would not commit crimes. It is likely that the activation of the AWS is that complicated that without prior special training a person cannot activate the AWS properly. Most likely the commander will be missing this special training and thus cannot activate the AWS by himself/herself properly. The deployer has the power to frustrate the commission of the crime by not performing his/her tasks. Without the order of the commander the AWS-deployer in most cases will not activate the AWS, subsequently the AWS would not commit the war crimes focused on in this thesis. The contributions of the commander and deployer probably will be essential ones. We also saw before that every co-perpetrator must carry out essential contributions in a coordinated manner which result in the fulfilment of the material elements of the crime.[289] With the prior mentioned example it is very likely that the material elements of the war crime of attacking are fulfilled. To view the commander and the deployer as co-perpetrator seems reasonable.

c) As aider and abettor

The commander could aid, abet, or otherwise assist in the commission of the crime or the attempted commission and he/she needs to do this for the purpose of facilitating the commission of such a crime.[290] The only possible scenario where this is the case seems to be: Where the AWS cannot distinct between civilians and military personnel, the likelihood is very high that the AWS will attack an civilian/ cause incidental death, injury or damage rather than fulfil the military purpose. The commander knows both beforementioned things. Nevertheless, he/she orders the activation of the AWS. For the commander to be an aider and abettor for the own conduct, he/she must act intentionally [mean to engage in the conduct pursuant to Article 30 (2) (a) Rome Statute], be aware that he/she is carrying out his/her acts and act for the purpose of facilitating the crime.[291] The commander must act intentionally for the purpose of facilitating the war crimes of attacking civilians or the war crime of excessive incidental death, injury or

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[284] See IV. 2.
[285] See for instance V. 1. b).
[286] See for instance V. 1. b).
[287] See V. 3. c).
[288] See V. 3. b).
[289] See IV. 2.
[290] See IV. 4.
[291] See IV. 4.

damage. Those two war crimes have the highest likelihood of being committed of the war crimes focused on in this thesis. With the prior mentioned example these essential elements should be fulfilled. Regarding the crime committed by the principal perpetrator the aider and abettor must only 'mean […] to cause' the commission or '[be] aware that [the crime] will occur in the ordinary course of events' [Article 30 (2) (b) Rome Statute].[292] In the prior mentioned example the commander can either mean to cause the commission of the crimes. The awareness that the crime will occur in the ordinary course of events presupposes that the person knows that his or her actions will necessarily bring about the consequence in question, barring an unforeseen or unexpected intervention or event to prevent its occurrence.[293] In other words, it is nigh on impossible for him or her to envisage that the consequence will not occur.[294] With the prior mentioned example the commander has awareness that the two beforementioned crimes will necessarily bring about the consequence in question. Because of prior testing etc. the commander has awareness that the likelihood is very high that the AWS will attack a civilian/ cause incidental death, injury or damage rather than fulfil the military purpose. The commander is at least aware that that the crime will occur in the ordinary course of events.
To view the commander in the prior mentioned example as aider and abettor is reasonable.

5. Responsibility of the AWS itself

According to Article 25 (1) Rome Statute only natural persons are individually criminally responsible pursuant to the Rome Statute. An AWS it not a natural person. Thus, an AWS cannot be individually criminally responsible pursuant to the Rome Statute. Additionally, an AWS cannot satisfy the mens rea elements of a crime, and thus cannot be charged with a crime even if they commit criminal acts.[295]

The GGE noted that "human responsibility for decisions on the use of weapons systems must be retained since accountability cannot be transferred to machines".[296]

VI. CONCLUSION

The research question of this thesis is: Which individual would be held accountable for proscribed acts committed by Autonomous Weapon Systems (AWS)? To answer this question, it is important to define the term AWS. This thesis was based on the view of the majority of the relevant International Organizations and scholars that AWS are "Human-out-of-the Loop Weapons". To be more precise, AWS are weapons which select and apply force to targets without human intervention.[297] After the initial activation or launch by the deployer, an AWS

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[292] See IV. 4.
[293] See III. 2.
[294] See III. 2.
[295] *Docherty,* Mind the Gap. The Lack of Accountability for Killer Robots, Human Rights Watch, p. 21.
[296] *GGE*, Meeting of the High Contracting Parties to the CCW, 13.12.2019, CCW/MSP/2019/9, Annex III at b).
[297] ICRC, Position on autonomous weapon systems, ICRC position and background paper, 2021, p. 2; also *Crootof*, The Killer Robots Are Here. Legal and Policy Implications, Cardozo Law Review 36 (2015), p. 1842; calling these Weapons Fully Autonomous Weapon Systems *Ekelhof/ Struyk,* Deadly decisions. 8 objections to killer robots, p. 4 + *Advisory Council on International Affairs & Advisory Committee on Public International Law:* Autonomous Weapon Systems, 2021, p. 1 + *Wagner,* Taking Humans Out of the Loop: Implications for International Humanitarian Law, Journal of Law, Information and Science 9, 2012 at 2.; calling them Lethal

self-initiates or triggers an attack in response to information from the environment received through sensors and on the basis of a generalized target profile.[298] The AWS-operator does not choose, or even know, the specific target(s) and the precise timing and/or location of the resulting application(s) of force.

We saw that the manufacturer and deployer cannot be held accountable for war crimes committed by AWS. There is only one exception to this: The commander and the deployer can be seen as co-perpetrators if both are aware that the AWS for the given circumstance or environment cannot distinguish between civilians and combatants with reasonable certainty and the AWS still will be deployed and commits war crimes. Where the AWS cannot distinct between civilians and military personnel, the likelihood is very high that the AWS will attack a civilian/ cause incidental death, injury or damage rather than fulfil the military purpose. The commander knows both beforementioned things. Nevertheless, he/she orders the activation of the AWS. In this case the commander can be an aider and abettor. Command responsibility pursuant to Article 28 Rome Statute is also not applicable to AWS.

The legal problem this thesis focused on is: if the current International Criminal Law-framework sufficiently regulates accountability for proscribed acts committed by Autonomous Weapon Systems. We saw that the commander can be accountable as aider and abettor, and the commander and the deployer as co-perpetrators. This should be sufficiently to hold individuals accountable for the commitment of proscribed acts by AWS. Thus, there is no need for a ban of AWS and the current law doesn't need to be amended to have sufficient accountability for the use of AWS.

In further research the responsibility of states for international crimes committed by AWS could be enquired. Another interesting thing to enquire is how many states/armed groups etc. have contemporary already AWS and for which tasks they are used. Additionally, further research could scrutinize how the national law of the states - which currently have/will potentially have in the future the most AWS - deals with the individual criminal accountability for proscribed acts committed by AWS.

Autonomous Robotics: *Heyns,* Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions. Report to the Human Rights Council, para. 38; *Beard,* Autonomous Weapons and Human Responsibilities, Georgetown Journal of International Law, vol. 45 no. 3, 2014, p. 652 at 2.

[298] *ICRC*, Position on autonomous weapon systems, 2021, p. 2; Crootof, War Torts. Accountability for Autonomous Weapons, University of Pennsylvania Law Review 164, no. 6 May 2016, p. 1367.

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