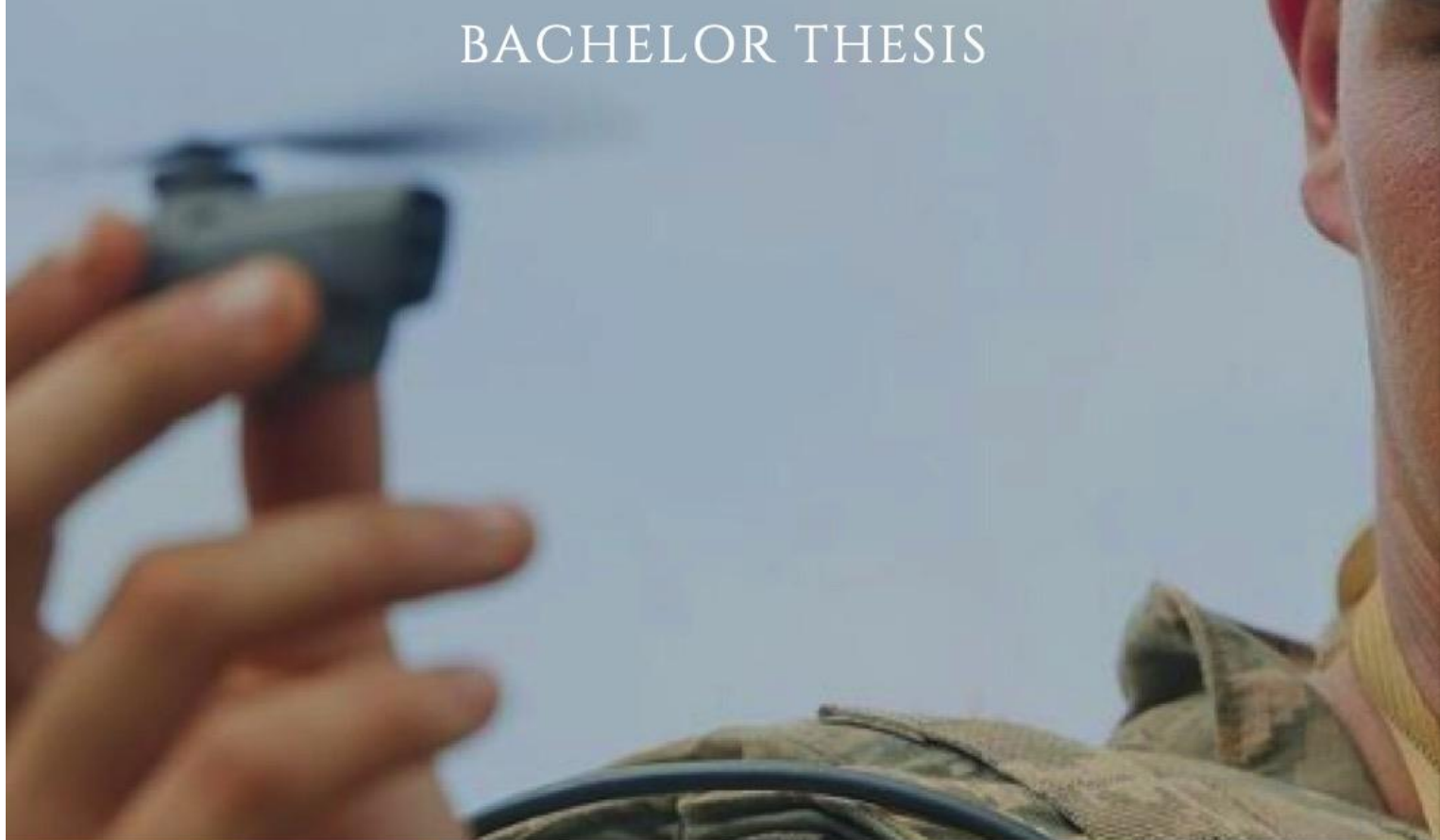


BACHELOR THESIS



BEYOND THE GENEVA CONVENTIONS

An Analysis of Different Approaches for a
Reinvention of International Humanitarian
Law

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Abstract

The rise in military AI has led scholars and policy-makers alike to question the sufficiency of the Geneva Conventions and International Humanitarian Law more generally. With increasing development of these emerging technologies, many are left wondering about the future of International Humanitarian Law. For that purpose, this research examines the current discussions on the issue and provides an overview on the different approaches to a revision of International Humanitarian Law fit for regulating military AI. This is done by conducting a content analysis of the discussions in the Group of Governmental Experts on Lethal Autonomous Weapons Systems. The group's sessions from 2017 to 2020 are taken into account. By analyzing the various contributions to and outputs of the group a clear picture of the dynamics, discussions, and potential outcomes of the regulatory process is given. The research finds that disagreement on the defining characteristics and the appropriate means to regulate military AI remains.

Table of Contents

<u>1. INTRODUCTION.....</u>	<u>1</u>
1.1 BACKGROUND OF THE PROBLEM	1
1.2 RESEARCH QUESTION.....	2
1.3 RESEARCH APPROACH.....	2
<u>2. THEORETICAL FRAMEWORK</u>	<u>4</u>
2.1 THE RISE OF HUMAN-LESS WARFARE.....	4
2.2 REGULATING HUMAN-LESS WARFARE	6
2.3 BEYOND GENEVA?	7
2.4 CONCLUDING REMARKS.....	8
<u>3. METHODS</u>	<u>10</u>
3.1 CASE DESCRIPTION.....	10
3.2 METHOD OF DATA COLLECTION	11
3.3 METHOD OF ANALYSIS.....	11
<u>4. ANALYSIS</u>	<u>14</u>
4.1 THREE APPROACHES FOR DEFINING THE ISSUE OF MILITARY AI AT THE GGE	14
4.2 THE SHORTCOMINGS OF IHL IN LIGHT OF MILITARY AI.....	17
4.3 NEW APPROACHES TO INTERNATIONAL HUMANITARIAN LAW DISCUSSED IN THE GGE ON LAWS	19
4.3.1 GUIDING PRINCIPLES	19
4.3.2 APPROACHES TO REGULATING LAWS IN THE GGE	21
4.4 CONCLUDING REMARKS	23
<u>5. CONCLUSION</u>	<u>25</u>
5.1 ANSWERING THE RESEARCH QUESTION.....	25
5.2 FURTHER DISCUSSIONS	26
5.3 PRACTICAL IMPLICATIONS	27
<u>6. LIST OF REFERENCES</u>	<u>28</u>
<u>7. APPENDIX</u>	<u>33</u>

List of Abbreviations

AI	Artificial Intelligence
AP I	Additional Protocol I to the Geneva Conventions
AWS	Autonomous Weapons Systems
CCW	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
EU	European Union
HRW	Human Rights Watch
GGE	Group of Governmental Experts
LAWS	Lethal Autonomous Weapons Systems
IGO	Intergovernmental Organization
IHL	International Humanitarian Law
ICRC	International Committee of the Red Cross
KRC	Campaign to Stop Killer Robots
NAM	Non-Aligned Movement
NGO	Non-Governmental Organization
OODA	Observe – Orient – Decide – Act
UN	United Nations
UNODA	United Nations Office for Disarmament Affairs

List of Figures

Figure 1	The OODA-loop
Figure 2	Semiautonomous Operation
Figure 3	Supervised Autonomous Operation
Figure 4	Fully Autonomous Operation

1. Introduction

Intelligent machines are taking over; taking over tedious tasks humans have commonly had to endure. We encounter algorithms, automations, and artificially intelligent machines in many areas of life already – our homes, our phones, our drones. After assuming a plethora of responsibilities in everyday life, Artificial Intelligence (AI) is gaining importance in military affairs. This advent of military AI is encouraged by some but viewed critically by most. These new combat technologies have sparked the interest of security scholars and ignited debates among legal and martial experts. Skeptics of autonomous warfare base their opposition on a variety of factors. Some refer to strategic apprehension and the fear of an arms race in the domain, others name military matters and the incompatibility of autonomous weapons with chains of command, or relate their hesitation to ethical arguments that center around human dignity (Rosert and Sauer 2019). However, there is one problem overarching all these other concerns. The predominant issue with military AI is that current International Humanitarian Law (IHL) is not suitable to regulate it (Rosert and Sauer 2019).

1.1 Background of the problem

International Humanitarian Law is the “means by which humankind endeavors to reduce the damage caused by war-making” (Canning 2009, p. 13). The Geneva Conventions are the most notable body of IHL; they provide minimum protections and standards of humane treatment to victims of armed conflict (Khan and Bhuian 2020). Within these Conventions, the signatories submit themselves to humanitarian principles of war that must be obeyed under any circumstances. Any transgression is considered a war crime and can be prosecuted as such (Khan and Bhuian 2020). Geneva Law introduces three main principles to guide military operations: distinction, proportionality, precaution (Scharre 2018). “To be used lawfully [...] autonomous weapons would need to meet the IHL principles” (Scharre 2018, p. 252). While these principles all institute different requirements for a lawful attack, they are connected by one underlying constant: human judgment. As military AI removes the human element from combat, it is obvious how the new technology conflicts with IHL regulations.

This irreconcilability of Geneva law and novel autonomous warfare has been of interest to security and legal scholars. The Conventions’ core values and their applicability have been discussed (Pasquale 2020; Scharre 2018); the principles’ traditional – human-centric – nature has been thoroughly analyzed (Bhuiyan and Khan 2020). Some have even taken the contradictions between military AI and IHL as evidence to proclaim the beginning of a new era of non-conventional warfare (Liiboja 2015) that moves beyond the psychological essence of conflict (Payne 2018). In sum, the problems military AI presents for IHL have found academic attention; what is missing is a look at the solutions. Some have tried inventing new approaches to IHL, but they tend to propose unrealistic, utopian regulations (Canning 2009) because they do not take military realities into account. What is needed is research into the actual, practical approaches to reconciling military AI with the laws of war. This thesis

will fill this knowledge gap by analyzing the content of expert discussions on the future of IHL. This not only advances scientific understanding but also supports policy-makers by summarizing and contextualizing the advances.

1.2 Research Question

Since this research aims to provide innovative insights into the characteristics of new IHL able to regulate military AI as discussed among experts, these expert rounds will be the focal point as evidenced by the research question:

To what extent does an analysis of the content of expert discussions suggest considerations of a new approach to International Humanitarian Law ignited by the advent of military AI?

Understanding the content of the expert proposals requires an immersion into the language of the discussions. Language determines meaning; recognizing the utilization of terminology is a crucial step in understanding content. A first descriptive sub-question, therefore, asks:

How is the term military AI understood in expert discussions?

This thesis hopes to explain how experts envision overcoming the current shortcomings of Geneva law triggered by an introduction of autonomous warfare. It should be made clear where these inadequacies lie. A second sub-question, thus, inquires:

To what extent do experts perceive shortcomings in the rules of war of the Geneva Conventions for regulating military AI?

Finally, to answer whether there is a new approach of IHL distinguishable in expert discussions, it is important to compare and contrast the characteristics of a new body of law being discussed. The third sub-question achieves this:

How do experts envision the characteristics of the new approach to International Humanitarian Law?

1.3 Research Approach

To answer these questions, this thesis will consider theoretical frameworks for military AI and IHL before conducting a content analysis of the proposals and statements made in expert discussion rounds. In 2014, the Convention of Certain Conventional Weapons (CCW) mandated the formation of a Group of Governmental Experts (GGE) to discuss issues around Lethal Autonomous Weapons Systems (LAWS). This forum was attended by nation-state experts, but also invited representatives from NGOs and international organizations like the European Union (EU) or the United Nations (UN) to debate solutions. The GGE on LAWS is the case studied for this research. The participants' suggestions will be explored thoroughly. Language and terminology, as well as external circumstances – like power dynamics – will be considered in the analysis. The qualitative, textual data used includes reports and

conference proceedings published by the GGE on LAWS, statements from participants, and papers commissioned for this purpose.

2. Theoretical Framework

This chapter introduces key concepts necessary for understanding a move beyond the Geneva Conventions. Therefore, explanations of the history and purpose of the Conventions are required. This will be done by embedding the treaties in the sphere of international law. However, since the topic of this thesis is not the Conventions themselves, but whether there are approaches to update contemporary International Humanitarian Law, this chapter will also address possibilities of regulating warfare beyond what the Geneva Conventions offer. Yet, before potential revisions of IHL are discussed, it is first essential to look at the source of the debates. The conceptualization of military AI as the trigger for hypothetical revisions of the laws of war will take precedence. Only by considering the characteristics of military AI first, can this chapter show how emerging technologies alter conventional warfare and ignite academic debate about the suitability of current IHL.

2.1 The Rise of Human-less Warfare

Military AI is the application of artificial intelligence technologies within the military sphere (Cummings 2017). With the increasing importance of AI in civilian domains, “[w]ar [as] a consumer of science and technology” (Roland 1995, p. 95) has also become more reliant on AI. Considering some of the advantages AIs have compared to humans, the interest in military AI is in no way surprising. AI excels in anomaly detection, data classification, prediction, faster-than-human reaction times, and precision (Horowitz and Scharre 2018). These are all highly desirable qualities for combat application, that are already utilized in existing military AIs. Autonomous functions in systems such as drones, defensive anti-missile contraptions, and – though rarely – offensive weapons have been established military practice since the introduction of the supervised autonomous MK15 Phalanx Weapon System in 1980 (Horowitz and Scharre 2015). While military AI as such is not a brand-new concept, what constitutes a revolution in military affairs is the category of Lethal Autonomous Weapons Systems (LAWS) (Missiroli 2020). This increase in autonomy especially in combination with a license to kill has sparked much debate among academics and civil society alike (Pasquale 2020).

While the notion of lethality is straightforward, autonomy is not as clear-cut; the academic community is still working on a concrete definition. What has been established is the categorization of systems into dimensions. Yet, before conceptualizing the dimensions of AI, a further distinction between autonomy and automation of weapons systems is necessary. Automatic weapons (e.g., landmines) operate as threshold-based (Missiroli 2020). Automated systems are a comparatively recent phenomenon, but their functions (i.e., drone autopilots) quickly became military standard (Missiroli 2020). Autonomy, in comparison, describes “the ability for a machine to perform a task or function on its own” (Scharre 2018, p. 27). By taking on more tasks a system can become more autonomous, resulting in different dimensions of autonomy. Understanding these dimensions of military AI and the tasks weapons systems can take on requires an excursus into military practice and decision-making. The OODA-loop (Figure

1), abbreviating the jobs observe, orient, decide, and act, describes the cognitive process of combatants when engaging in a strike against enemy targets. “In the OODA-loop paradigm, victory on the battlefield goes to whichever side can complete the [...] cycle faster” (Scharre 2018, p. 23); the advantages of automation are clear.

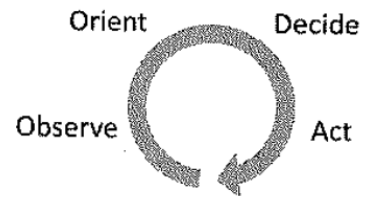


Figure 1: The OODA-loop (Scharre 2018, p. 23)

A dimension of autonomy is defined by the extent human commanders remain involved in the OODA-loop when operating the weapons system. The lowest dimension of autonomy is that of Semiautonomous Operation systems (Figure 2). Here the loop is

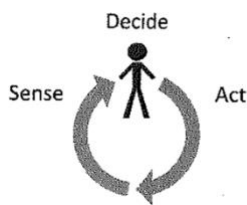


Figure 2: Semiautonomous Operation (Scharre 2018, p. 29)

broken by the commander; a human remains *in* the loop. The machine senses its surroundings but must wait for user approval before continuing. Semiautonomous weapons systems are, therefore, capable of observing the environment and recommending a course of action, but can only carry out actions with authorization (Scharre 2018). One level above this lie

Supervised Autonomous Operation systems (Figure 3). The process is not broken by the commander but rather observed by them. The human is *on* the loop. A supervisor oversees the operations and, if necessary, intervenes, stops, or alters the systems’ actions at any point (Scharre 2018). The final dimension is that of Fully

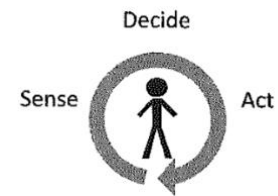


Figure 3: Supervised Autonomous Operation (Scharre 2018, p. 29)

Autonomous Operations (Figure 4). These systems complete the entire OODA-loop (see Figure 1) without human interaction. The human is *out of* the loop. Once activated an intervention of these systems’ actions by the user, an alteration of the path, a cancellation of the strike is no longer possible (Scharre 2018).

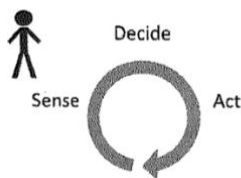


Figure 4: Fully Autonomous Operation (Scharre 2018, p. 30)

Thus, the aim of military AI is to substitute human soldiers with machines during times of war. What might not be as obvious are the dramatic changes this brings to the conduct of war. By replacing humans on the battlefield, many believe that autonomous weapons are changing the conventional form of warfare in a way even nuclear weapons were unable to (Liiboja 2015; Payne 2018). Unlike nuclear weapons, autonomous weapons systems are intended for actual combat rather than deterrence (Missiroli 2020). Further, political psychologist Payne argues that AI is qualitatively different from other weapons systems: “If earlier technologies transformed the character of conflict and the societies waging it, they left intact its essentially psychological essence – that is, the prosecution of strategy by evolved, embodied and encultured human minds” (Payne 2018, p. 12). Military AI is, thus, changing the essentials of strategic warfare.

With few exceptions, this departure from conventional warfare is viewed critically; the tone of the academic debate around military AI remains skeptical. Scholars from a variety of academic fields identify several problems resulting from the absence of humanity in military AI. While technical

concerns (e.g., hacking of the system, algorithm bias) are of some interest, most debates focus on more substantial arguments. Namely, security scholars fear AI weapons are a threat to stability. Haner and Garcia (2019) explain this worry by reflecting Kant's theory of democratic peace, claiming that stability "relies on the public not supporting unnecessary wars as they will be the ones called upon to fight in them" (Haner and Garcia 2019, p. 332). With increasing autonomous warfare, scholars warn that this threshold loses its relevance, thereby, inviting conflict. Disregarding these concerns on the basis that civil society has yet to accept military AI, others emphasize ethical arguments and fear violations of human dignity, since "[t]he minimum requirement for upholding human dignity, even in conflicts, is that life and death decisions on the battlefield should always [...] be made by humans" (Rosert and Sauer 2019, p. 370).

In sum, military AI is neither a new nor surprising development. What is remarkable is the lack of common understanding of the actual definition of the technology. The most comprehensive approach so far relies on a typology of autonomous weapons by their degree of human involvement. A form of military AI with lethal characteristics yet little human involvement has provoked fierce debate among scientists. While LAWS remain hypothetical, their potential consequences are already dissected. Here, disagreement on the most pressing concern remains.

2.2 Regulating Human-less Warfare

International Humanitarian Law regulates states' behavior during wartime, determines potential justifications for war, and shapes the ways and means of warfare (Peter and Akpan 2017). The most notable body of IHL is the Geneva Conventions. Parallel to the Geneva tradition is the Hague tradition. While the law of Geneva aims to protect non-combatants from the cruelties of war, the Hague tradition has states come together to regulate the means of warfare, occasionally forbidding certain weapons (Best 1999, p. 622). Scholars see issues with IHL and the Geneva Conventions specifically due to advancements in military AI. Within the legal sphere, the question remains whether autonomous weapons can be used lawfully under the current legal framework; many argue that today's Laws of War are no longer sufficient. In regards to the Geneva Conventions, specifically, the application of its core principles of distinction, proportionality, and precaution to warfare through military AI is viewed skeptically.

The Geneva Conventions were first consolidated in 1864 and only consisted of 10 articles (Bhuiyan and Khan 2020); they have since been updated three times – last in 1949 – and were supplemented with three Additional Protocols in 1977 and 2005. The purpose of these articles is "to provide minimum protections, standards of humane treatment, and fundamental guarantees of respect to individuals who become victims of armed conflicts" (Khan and Bhuian 2020, p. 12). Today these rules are "universally accepted" (Khan and Bhuian 2020, p. 33) and understood as "jus cogens" (Meron 1987, p. 350). Considering the importance of these rules of war, it is not surprising that questions about the applicability of the laws of Geneva to autonomous weapon systems (AWS) provoke such enthusiastic

debate. Still, when only viewing the purpose of the Conventions, problems are not directly apparent. A more holistic approach shows that the rules were established with traditional battlefields in mind (Bhuiyan and Khan 2020) and exhibit a strong focus on the principles of humanity (Liiboja 2015). It is argued that “[t]aking the emotion out of strategy” (Payne 2018, p. 29) by replacing humans with machines makes adherence to the principles of humanity improbable.

The Martens Clause is the epitome of humanity in the Geneva Conventions (Meron 1987) and is found in Additional Protocol I from 1977 (ICRC n.d.). The Martens Clause restricts behavior insofar as it dictates that any situations – unforeseen by the Conventions – should be regarded with humanity; but human psychology is also an important aspect of other Geneva articles and a requirement for obliging to the three principles: distinction, proportionality, and precaution. “The principle of distinction means that belligerents must, at all times, distinguish between combatants [...] and civilians who are protected” (Kamal 2020, p. 245) from attack. What seems straightforward in theory can be challenging in application and – as Akpan and Peter argue – this difficulty of distinction only increases with more insurgency- and guerilla-warfare (Peter and Akpan 2017), since in these situations only “[b]ehavior determines whether or not a person is a combatant” (Scharre 2018, p. 4). The principle of proportionality requires that collateral damage and damage to target or civilian objects must not be excessive in relation to military necessity (Kamal 2020). When considering action, the decision-maker, thus, needs to justify that the specific destruction of human lives and property is an imperative demand for military advancement. The principle of precaution is closely related to that, describing the responsibility of commanders to minimize the harm in any attack (Kamal 2020). Human psychology is seen as essential for application of these principles.

The Geneva Conventions, in conclusion, result from a long tradition of treaties that aim to protect humans from the atrocities of armed conflict. Many believe this legal framework is based largely on human psychology. Application of the Marten’s Clause as well as the core principles – distinction, proportionality, precaution – requires human consciousness. Military AI could, therefore, not be used in compliance with the laws of Geneva.

2.3 Beyond Geneva?

Reviewing the problems with IHL, scientists now debate whether it wouldn’t be possible to equip AI with the necessary human qualities. Pasquale doesn’t think so: “Any attempt to code law and ethics into killer robots [...] is unrealistic” (Pasquale 2020). Similar conclusions are drawn by academics about the other core principles, however, some disagree. Considering the uncertainty of the course of development, “the legal claim [...] might, in fact, prove vulnerable due to [...] technological progress that increases [...] capabilities and even equips [LAWS] with the (equivalent of) ‘common sense’” (Rosert and Sauer 2019, p. 372). Still, most within the academic debates converge on the opinion that only humans are capable of empathizing and seeing the bigger picture as required for making choices in line with the laws of Geneva. Autonomous weapons systems have no understanding of consequences

and could, therefore, not make decisions on distinction, proportionality, and precaution (Scharre 2018). There is a growing consensus among scholars that human psychology should be considered an asset in the conduct of war (Payne 2018) as well as a requirement for application of IHL norms (Scharre 2018). Despite the possible insufficiency of the Conventions in some regards, many still emphasize the benefits they provide for protecting bystanders from the horrors of war (Bhuiyan and Khan 2020). Yet again there are others who – in light of the current technological shift – express desires to depart from these Conventions entirely and instead regulate military AI in a different manner (Liiboja 2015). As previously mentioned there are ways of regulating warfare beyond the scope of the Geneva Conventions. Treaties following the Hague tradition aim to humanize warfare by setting limits on the kind of weaponry permitted for use. At its conclusion in 1899, it was the first “multilateral abolition of particular weapons” (Best 1999, p. 631). Since then, few successes in weapons’ prohibition are recorded. Bans on biological and chemical weapons and anti-personnel-landmines are notable exceptions. The commonality of all successful bans has been that “major military powers could persuade themselves they could do without them” (Best 1999, 631). Today, the two traditions are no longer distinct from one another. The CCW as a Hague-tradition prohibition forum considers weapons in light of Geneva principles while the Additional Protocols to the Geneva Conventions include fragments of Hague approaches such as the Article 36 weapon review mechanism in AP I.

To sum up, there is still disagreement among academics as to how military AI should be regulated. Confronted with the shortcomings of the Geneva Conventions some argue for a modification of the laws of war, others advocate for a solution that builds on further technological development of autonomous warfare. Some again see adequate regulation based on the Geneva Conventions as improbable and, thus, suggest other means of controlling emerging technologies.

2.4 Concluding Remarks

This chapter explored relevant concepts for understanding the debate on moving beyond the Geneva Conventions considering military AI. Regarding military AI a lack of common understanding is still evident. Despite much debate on the issue, no universal definition of these emerging technologies exists. A characterization along the dimensions of autonomy was, thus, proposed as a common denominator. With a distinction into Semiautonomous, Supervised Autonomous, and Fully Autonomous Operations, it became evident that mainly Fully Autonomous Operations lead to scientific debate; Semi- and Supervised Autonomous Operations’ existence is of less interest due to their continued human involvement. The first hypothesis for the following analysis is, thus, formulated:

H1: Fully autonomous weapons systems – rather than those incorporating human control – present the biggest threat to contemporary warfare.

The absence of human control in Fully Autonomous Operations presents problems for the application of the laws of Geneva as discussed next. Human psychology is understood as an essential element of

these Conventions; disagreement remains on the question whether LAWS could be equipped with the necessary characteristics to be able to work in compliance with Geneva norms. The second hypothesis claims:

H2: The biggest problem of military AI will be compliance with the Geneva principles of distinction, proportionality, and precaution.

Finally, experts inquire whether the Geneva tradition presents the appropriate legal framework to regulate military AI. Some suggest regulation within the Hague tradition as more beneficial. This, however, requires great military power alliance with the aims of the prohibition. This leads to the final hypothesis:

H3: Powerful states will not support a move beyond the Geneva Conventions for regulating military AI.

3. Methods

The following chapter will provide insights into the research method that has been selected for answering the research question and the sub-questions. Firstly, the foundation for the analysis is introduced. In line with the research, certain criteria have been developed leading to the case selection; these criteria will be explained and defended. Textual data is at the core of the analysis. This chapter will also devote attention to the method of data collection by clarifying which data was selected, how this data was selected, and why it is deemed appropriate for the following analysis. Lastly, the data analysis will be presented. This research will be conducted as a content analysis. This chapter describes and justifies this method of analysis. A coding scheme will guide the analysis; these codes are also presented in this chapter.

3.1 Case Description

To provide an answer to the research question, this thesis will analyze the proceedings within the Group of Governmental Experts on Lethal Autonomous Weapons System. This group was mandated by the 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 (CCW) to consider questions related to emerging technologies – especially LAWS – in military affairs (UNODA n.d.). As the group is tasked with exploring and agreeing on possible recommendations for the regulation of military AI, it provides the ideal thematic framework for analyzing the content of expert’s efforts of regulating AWS. Not only is the group thematically ideally situated for the research topic at hand, it is also so far the only forum that holds these in-depth discussions on the legal implications of military AI. The group invites “legal, technological and military experts” (CCW 2019, p. 5) from nation-states as well as NGOs and IGOs to debate issues and agree on recommendations on the future of the laws of war.

The advantages of constructing a case around the CCW’s GGE on LAWS are manifold. The thematic suitability has been explained already, but the group also provides many functional benefits. The GGE on LAWS convenes regularly and documents its meetings thoroughly. The group started meeting in 2017, which allows the research to not only analyze what is currently debated in the realm of IHL legislation, but also consider trends or changing attitudes within the expert discussions. While the GGE on LAWS is still in the early phases of policy-making they have already published preliminary guiding principles on LAWS, which add another interesting dimension to the analysis and can be a first hint at future regulatory approaches; an initial idea about the continued relevance of the Conventions can, therefore, be conceived. Finally, the GGE on LAWS has an appropriate scope for this thesis. A sufficient, but not overwhelming amount of data is available through the group. The case is, therefore, well researchable.

3.2 Method of Data Collection

The case will be explored in a content analysis of qualitative, textual data that was published in connection to the sessions of the GGE on LAWS. The documents relating to the group are published by the United Nations Office for Disarmament Affairs (UNODA) and made accessible on their website; all the data was downloaded from this website. It consists of the sessions' official reports from the years 2017, 2018, and 2019, as well as an advanced version of the 2020 report. Other administrative documents such as (provisional) agendas and lists of participants were consulted, but not considered for the analysis, due to a lack of relevant content. The main body of data consists of contributions made by nation-states and other participants to the GGE discussions. Contributions have been made in the form of national commentaries, working papers, as well as statements/interventions. As the case has a very clear focus on LAWS in an IHL context all contributions were thematically relevant. Only those not available in English were excluded from the analysis. In total 883 pages from 229 documents were analyzed.

While all *published* documents were taken into account for the analysis, the thesis understands that this still does not provide an entirely comprehensive picture of the GGE discussions. As the UNODA needs permission by participants to make their contributions publicly accessible some documents cannot be analyzed by this thesis, as consent for publication is missing. It is, therefore, crucial to keep this in mind and recognize that a lack of data might not necessarily imply a lack of contribution. Besides those documents published by the UNODA, one additional piece of data was included in the analysis: the *Key Elements of a Treaty on Fully Autonomous Weapons* – a concrete proposal for a legislative framework on LAWS issued by the Campaign to Stop Killer Robots. While this proposal was never officially introduced, the GGE participants reference it frequently. The document is, therefore, relevant for comprehending the full scope of ideas on moving beyond the Geneva Conventions.

3.3 Method of Analysis

This data will be analyzed and interpreted in a content analysis. A qualitative content analysis is a “way of reducing data and making sense of them – of deriving meaning” (Julien 2008, p. 120), which this thesis is aiming to do. It wants to consider the specific meaning of participants' contributions to the group. The entire political framework of the GGE on LAWS will be reflected to determine whether moving beyond the Geneva Conventions appears to be a likely step. The analysis will deduct content by identifying “both conscious and unconscious messages” (Julien 2008, p. 120). To be able to identify these messages, a close reading of the data is necessary; this will be the first step of the analysis. However, the messages derived in a content analysis are context-dependent and often subjective; the same piece of data might be interpreted differently by another researcher (Julien 2008). Reliability and validity are important, nonetheless. To ensure this, transparency about the analytical process and potential threats is required.

Considering this work revolves around international processes in a multi-national forum on weapons systems, a threat here is bias resulting from the researcher's Western socialization. During the analysis, an awareness of this potential bias towards non-European/non-Western countries will try to counterbalance its effects. To ensure reliability the analysis is conducted along coding schemes constructed prior to analysis, establishing certain themes upon which the data is studied. The codes and their corresponding key terms were constructed based on the theoretical framework discussed in chapter two and follow the thematic trichotomy of the theoretical considerations. The following coding scheme is applied:

Concept	Dimension	Key Terms
Definition of Autonomous Weapons	Human-machine interaction	Automation
		Supervised autonomous
		Semi-autonomous
		Fully autonomous
		Meaningful human control
		Command chain
	Necessity of Definition	(Lack of) common understanding
		Restriction of progress
		Working definition
		Characteristics
		Agreement
		Complication
		Confusion
	Rapid progress	
	Approaches to definition	Technology-agnostic
		Technical
		Separative
		Categorical
Problematic nature of autonomous weapons	Legal issues	Proportionality
		Distinction
		Precaution
		Accountability
		Responsibility
		Violation of IHL
	Technical issues	Reliability
		Re-traceability
		Predictability

		Black box
New approaches to IHL	Existing regulation sufficient	Art. 36
		Weapons review
		Application of IHL
		Customary Law
		Martens Clause
	Political declaration	Commitment
		Code of conduct
	Non-binding international agreement	Suggestion
		Guidelines
	Legally binding international agreement	Regulation
		Law

During the analysis, first definition approaches among GGE participants were considered. Next, the issues experts identified in the advent of military AI especially regarding IHL were discerned. Finally, the data was interpreted on the grounds of new approaches to IHL proposed in the contributions.

3.4 Concluding Remarks

In sum, the content analysis provides a solid scientific foundation for deciphering, understanding, and examining the discussions on new approaches to IHL in light of military AI. A well-rounded data portfolio will ensure a balanced view of the discussions; positions of different actors with different motivations will be taken into account to arrive at accurate conclusions. This data will be collected at the GGE on LAWS, a forum mandated by the CCW to specifically discuss the implication of AWS on International Humanitarian Law. This is one of few forums that devote their attention entirely to military AI in the sphere of international law and is also suitable to serve as the case here since it specifically invites non-governmental experts to participate alongside nation-states. Coding schemes were constructed.

4. Analysis

The following chapter provides a deeper explanation of the discussions within the CCW Group of Governmental Experts on Lethal Autonomous Weapons. For that purpose, data from the group's sessions (e.g., reports, working papers, statements) will be analyzed to gain insights into the interests of the various stakeholders. Three topics will be of special interest for the analysis: definition of military AI, shortcomings, and new approaches of IHL. The novelty of military AI means there currently is no universally agreed-upon definition. The first step of the analysis will look at definition approaches within the GGE. It will evaluate whether nation-states see a necessity for a concrete characterization of LAWS and, if so, what the content of that definition would be. Next, the analysis will move to consider the relationship between military AI and IHL as conceived by GGE-participants. In line with sub-question two, it will be evaluated where experts perceive shortcomings in the current regulatory framework in light of the advent of military AI. Finally, the analysis will shine light onto what the stakeholders envision as next steps for the GGE in the regulation of LAWS. An overview of the content of the different approaches will be provided and evaluated.

Before considering the specificities of the discussions within the group, a few overarching remarks will be given. Within the GGE on LAWS, there is active debate. The discussions are balanced; NGOs, IGOs, smaller, and larger countries are given the space to express concerns and make proposals. Participation comes from actors strongly opposed to military AI as well as some of the leading AI powers. Within the GGE there are different factions among participants. However, this does not necessarily mirror traditional alliances. Agreement happens among those in the same boat as they share similar concerns. Most developers of military AI are present to voice their interests and protect their advancements from strict regulation. Surprising is the absence of China from these discussions. As a major AI power and a developer at the forefront of military AI one would assume they would negotiate a legal framework reflecting their interests, but their participation at the GGE is minimal.

4.1 Three Approaches for Defining the Issue of Military AI at the GGE

By scholars, military AI has been identified as the source of discussions on new IHL. Yet, it remains unclear what exactly military AI entails. The analysis will explain what answer is given by GGE-experts. The most striking finding in this regard is the fact that the term military AI – as a theoretical construct often found in scientific research – is not used in these expert discussions. Military AI is only mentioned in a statement by the Future of Life Institute, which consists of academics entirely (Spokesperson Future of Life Institute 2018). Instead, the GGE participants follow their mandate and focus on a specific aspect of military AI: Lethal Autonomous Weapons Systems. Notably, however, some have resisted adopting this commonly used terminology and instead use language that better aligns with their interests. The term 'killer robots' is introduced into the discussions by the Campaign to Stop Killer Robots (Spokesperson of the KRC 2019) and is in use among its supporters. Interestingly, only NGOs refer to 'killer robots'; nation-states express their disagreement with LAWS differently.

Some nation-state experts use the term Autonomous Weapons Systems (AWS) instead of LAWS. The data shows reference to AWS in contributions from Switzerland (Spokesperson of Switzerland 2020), Brazil (Spokesperson of Brazil 2018a), Australia (Spokesperson of Australia 2019), Costa Rica (Spokesperson of Costa Rica 2020a), and others. These are primarily countries that have vehemently voiced concerns about these emerging technologies. Switzerland explains their preference of the term AWS by noting that “[t]he element of lethality, though of particular concern in practice, should not be conceptually regarded as a prerequisite of autonomous weapons systems” and that in definition approaches “[t]he ‘intention of causing death’ is not a necessary condition to categorize an Autonomous Weapons System as relevant for [the GGE’s] work” (Spokesperson of Switzerland 2018, p. 3). Since binding agreements control a defined entity, a broader definition of this entity means more weapons systems fall under regulation. Using AWS over LAWS in communications with the GGE is, thus, considered as an indicator for opposition to the technologies.

Noting that there is still severe dissensus on terminology, it is not surprising that the analysis shows that the sessions of the GGE have neither led to an accepted definition of LAWS nor at least established consensus as to whether a definition is necessary or even desirable. That this is an area of great interest among the participants is shown by the frequent reference to key terms ‘definition(s)’, ‘working definition’, and ‘characteristics’. The analysis of the data indicates that there currently are three factions within the GEE regarding the issue of defining LAWS: those that see a definition as a necessary tool for progress; those that view a working definition as desirable but believe progress of the group is not tied to success of defining the issue; and those that oppose a definition of LAWS for various reasons. Actors opposing any kind of definition make up the minority within the GGE.

The United States bases its opposition on its understanding that definitions are usually used for supporting regulatory approaches and, as the US objects to regulation of LAWS, it has no interest in a definition (Spokesperson of the USA 2017). Estonia – while agreeing with US’ intent – provides different reasoning for its rejection of a definition. It supposes that “there should first be consensus on the most appropriate solution to a perceived problem, and then definitions should be formulated to support and serve that solution”; it calls for “policy [to] drive definitions, not the other way around” (Spokesperson of Estonia 2018, p. 1). The Netherlands similarly emphasize that definitions can quickly lead to a pre-emptive judgment which at this point of the discussion would not be useful (Spokesperson of the Netherlands 2019). Those states supporting a working definition, but simultaneously wishing not to hinder progress in the GGE share the Netherlands’ view to a large extent. Still, they see great advantage in achieving common understanding. The Irish delegation sums up the position by explaining that “[t]he inability to converge on an agreed working definition or common understanding of LAWS should not hamper [...] efforts to make progress”, but emphasizes that “[i]dentifying and reaching a common understanding on the concepts and characteristics to LAWS will aid [...] consideration[s]” (Spokesperson of Ireland 2019, p. 3). This view is supported by various other nation-states, as well as NGOs.

The largest faction of stakeholders, however, sees a preliminary working definition as vital for progress at the GGE on LAWS. Among them – surprisingly – is Russia. Considering its involvement in AWS research one might assume it would follow a similar strategy as the US delegation. Instead, it argues that in the work of the GGE “it becomes evident that the definition on LAWS varies considerably among states” which “complicates [...] discussions within the GGE” (Spokesperson of Russia 2018, p. 1). In this it sees the need to clarify a common understanding of the technology, potentially trying to protect its technologies from regulation or block progress of the group. Russia is joined by states and NGOs in this quest for a definition. This has led to a plethora of approaches being introduced during the GGE sessions which, as the analysis shows, differ significantly in their content depending on interests. In the data, three main approaches were found for characterizing AWS: the technical approach, the separative approach, and the technology-agnostic approach.

The technological approach is widely disregarded. As an emerging technology, LAWS are not yet fully developed, their technical characteristics are ever-changing (Spokesperson of Brazil 2018b). Most stakeholders agree that defining them based on technical entities would currently not provide a feasible option. The separative approach also draws on technical characteristics of a weapons system; here these characteristics, however, would serve the purpose of a threshold to separate LAWS from non-LAWS. A distinction from non-LAWS would be made via ‘positive’ characteristics of LAWS. Coded alongside key terms relating to the dimensions of autonomy, this is a more flexible and more realistic option for defining LAWS. This approach finds support with stakeholders (i.e. Pakistan (Spokesperson of Pakistan 2018a) and Switzerland (Spokesperson of Switzerland 2018)).

Most parties, however, converge on the idea of a technology-agnostic perspective. Here, focus lies not on the strictly technical characteristics but rather the degree of human involvement in the OODA-loop; the key term ‘meaningful human control’ is subsequently coded simultaneously. The ICRC introduced a technology-agnostic definition for autonomous weapons systems to the GGE on LAWS (ICRC 2018) and defines them as: “Any weapon system with autonomy in its critical functions. That is, a weapon system that can select [...] and attack [...] targets without human intervention“ (ICRC 2018, p. 4). This definition is endorsed by a variety of actors and is currently considered closest to a compromise.

To sum up, there is much disagreement among GGE participants on the specific characteristics of (L)AWS. Countries still argue about the appropriate terminology. Terminology in this setting is not only regarded important for reaching understandings, but also a way to express political positions as has been exhibited by instrumentalization of language by different actors. The most commonly used terminology within this forum, however, remains that of LAWS, which is also the area of military AI the group was mandated by the CCW to discuss. Yet, it appears that lethality of the weapons systems is less controversially discussed than the degree of autonomy. The issue of ‘meaningful human control’ is ever-present, leading to problems for many actors when this control is no longer given. Full autonomy is considered a threat by most stakeholders; hypothesis one is confirmed. A concrete definition has not yet been agreed upon. A definitive answer to sub-question one is, therefore, not possible at this point since

there are multiple, sometimes conflicting understandings of military AI. The most prevalent approach, however, remains the technology-agnostic definition, which is based on considerations of meaningful human control. Experts, thus, generally understand LAWS as weapons systems that do not operate within the bounds of human control.

4.2 The Shortcomings of IHL in Light of Military AI

The Fifth Review Conference of the High Contracting Parties to the CCW decided in 2016 to mandate a GGE on LAWS to review and discuss the issues military AI presents for the international community. The analysis, therefore, also considers what actors within the GGE on LAWS find problematic considering the advent of autonomous weapons systems. The analysis suggests stakeholders to the GGE identify three separate issues regarding military AI on battlefields. First, the technical insecurity inherent to autonomous weapons systems is viewed critically. There are also some issues related to the realms of ethics that become especially problematic in lethal military AI. The most pressing issue in the data, however, relates to legal problems. This concerns the shortcomings of International Humanitarian Law and its core principles in light of an introduction of military AI.

For the analysis, technical issues were coded with key terms ‘reliability’, ‘re-traceability’, and ‘predictability’. These all relate to a key aspect of artificial intelligence that is commonly described as the ‘black box’ of the system. The black box nature was defined by Austria as the phenomenon “when humans [...] cannot explain why a system took certain conclusions, choices or even decisions” (Spokesperson of Austria 2019, p. 3), essentially meaning that there is a lack of transparency in how the algorithm functions. This suggests that operators will not be sure the weapon will work as they have predicted, thus, making LAWS an unreliable means of warfare whose actions cannot be traced. While the number of times these codes were applied in the analysis is significant – implying these issues are prevalent among experts – a closer look at the content shows that this is not regarded as the most prominent issue right now since the development of machine-learning AWS is still considered futuristic (Spokesperson of Israel 2017). A call to *also* consider these issues in upcoming developments remains.

The analysis of the GGE data further shows that there is some concern about how LAWS and ethics conflict, expressed through coding of ‘human dignity’. This point is mainly raised by NGOs such as HRW, iPRAW, and especially the ICRC, but a few nation-states also include this topic in their remarks. The ICRC argues “that it matters not just if a person is killed and injured but how they are killed and injured” (ICRC 2018, p. 10). This argument follows the strain of logic that a dignified death requires the ‘killer’ to appreciate the value of human life; machines – even intelligent ones – are not considered capable of this. The argument finds somewhat of an audience but is certainly not considered as the main issue of the advent of military AI in this GGE, which is not a real surprise as the mandate and institutional framework of the GGE on LAWS requires the focus to lie on legal issues of IHL (Chairperson 2017).

As a forum commissioned by the CCW, the group is tasked to evaluate LAWS and to assess whether there is a need for action (Chairperson 2017). As stated in the CCW's title, the convention's parties can decide on prohibitions of weapons provided they are indiscriminate or excessively injurious. The CCW's – and followingly the GGE's – mandate is closely tied to principles of IHL of which human dignity is not one. The principles of distinction, proportionality, and precaution, on the other hand, are principles of International Humanitarian Law and, thus, find much greater attention in the GGE discussions and can be considered the main issue in this forum. Key terms include the principles themselves which are supplemented by 'accountability' and 'responsibility', as well as 'application of IHL' and 'violation of IHL'. The importance of this topic to the progress of the GGE on LAWS is reflected in the frequency these key terms are used in data from the sessions.

The principles are the basis for a legitimate attack. Participants point out that these rules are effect-based and, therefore, apply to all weapons and means of warfare (Spokesperson of Germany 2020). Under the principle of distinction civilians and those hors de combat may not be targeted, only combatants actively taking part in the hostilities present legitimate targets (Spokesperson of the USA 2019); the principle of proportionality requires that any attack must be proportional to the military necessity (Spokesperson of the USA 2019); the principle of precaution asks combatants to be cautious in carrying out attacks (Spokesperson of the USA 2019). These principles are straightforward in formulation, but their operationalization is a complex endeavor. The operationalization is considered especially challenging for autonomous weapons systems as application of the rules of war requires "context-specific value-based judgment by a human" which leads many experts to demand that humans "must not be substituted by autonomous machines or systems" (Spokesperson of Austria et al. 2020, pp. 1-2).

Contrarily, it is also worth noting that there is a small, but not dismissible alliance of countries emphasizing the advantage military AI has for IHL application. They argue that an introduction of AWS onto battlefields would strengthen compliance with the rules of war. This position is held by Russia, Israel, and the USA – the three main developers and supporters of military AI that are active at the GGE. They argue that LAWS are beneficial for IHL compliance as they can minimize harm to civilians and reduce risk to military personnel by introducing technological innovations; but it is their flexibility in adjusting to changed circumstances autonomously and, thus, their ability to carry out commands more reliably that is seen as the main advantage (Spokesperson of the USA 2019). Other non-possessing states view this issue from a very different perspective. They fear that "[t]he apparent tactical benefits resulting from the use of lethal autonomous weapons may cause possessor States to stop considering armed conflict as a last resort" and that this would actually "increase international conflicts and [...] casualties" (Spokesperson of Cuba 2020, p. 4). The idea of increased IHL compliance is rejected by most.

In summary, this section shows that the findings from the analysis confirm hypothesis two. While there is some debate on the implications LAWS have for human dignity or problems with technical insufficiencies of these emerging technologies, the most important issue concerns the legal dimension, especially the core principles of the rules of war as manifested in the Geneva Conventions. Most experts

understand military AI – especially fully autonomous weapons systems – to be incompatible with the Geneva Conventions regarding the principles of distinction, proportionality, and precaution. For adherence to these principles, participants argue that meaningful human control is required. This allows an answer to sub-question two. The analysis has shown that experts do perceive shortcomings in the rules of war, as application of the principles of Geneva law is not possible with fully autonomous weapons systems due to a lack of human involvement. The Geneva Conventions are, therefore, not sufficient for regulating fully autonomous military AI.

4.3 New Approaches to International Humanitarian Law Discussed in the GGE on LAWS

The problems autonomous weapons systems pose for the international community as they were discussed within the GGE on LAWS' session were analyzed. The main issue is identified as LAWS' ability to comply with IHL regulation. As aforementioned, it is within the GGE's mandate to discuss possible solutions to these problems and suggest recommendations to the High Contracting Parties of the CCW. Therefore, the next step for the analysis is to examine potential outcomes of the upcoming GGE sessions. First, the content of the Guiding Principles – so far the main output of the GGE – will be discussed, followed by a closer look at the responding national commentaries. Next, the different ways for moving forward that have so far been discussed within the group – a legally binding international agreement, a non-binding international agreement, a political declaration, or the recognition that existing IHL norms are sufficient for regulating AWS – will be considered and the proposals that have been made so far analyzed.

4.3.1 Guiding Principles

The Guiding Principles affirmed by the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems were first consolidated in the 2018 GGE sessions and in 2019 expanded by one additional clause. They aim to provide guidelines for further consideration and regulation of LAWS. The eleven principles are held in high esteem by the participants of the discussions, which is evidenced by the frequent reference to them in the 2019 and 2020 sessions; they present an initial agreement within the discussions on AWS. They parallel the previous debates to a large extent and, thus, focus on application of and compliance with International Humanitarian Law. It is reaffirmed that IHL continues to apply to all weapons and that compliance with these rules needs to be upheld. Humans are seen as the only actors capable of being responsible and accountable for adherence to IHL. One clause calls upon states to implement review mechanisms to examine the legality of a weapon during the developmental stages already. Finally, it is stated that the CCW offers the appropriate framework to consider LAWS and their relationship with IHL (Chairperson 2019).

After agreement on the guiding principles was reached, the Chair encouraged stakeholders to submit national positions on the guiding principles and their operationalization. The commentaries of 23

participants were analyzed, three of which were submitted by NGOs, 19 by nation-states, and one as a joint commentary. All commentaries expressed support for the guiding principles, however, some actors emphasized that in their opinion these principles present only an initial agreement and not an end in themselves. The Campaign to Stop Killer Robots (Spokesperson of the KRC 2020) alongside Costa Rica (Spokesperson of Costa Rica 2020b) and Venezuela (Spokesperson of Venezuela 2020) used their commentary to emphasize that a ban on the emerging technologies was necessary nonetheless. Cuba supports these efforts and explains in their commentary that “while these principles can be further developed, they cannot by themselves curb the threat posed by lethal autonomous weapons systems, nor do they replace the need for a strict, legally binding international regulatory framework that includes a ban on weapons not subject to human control” (Spokesperson of Cuba 2020).

The importance of human control as consolidated in the guiding principles is recognized by many other delegations. Still, it does not lead them to propose a ban on AWS. Switzerland underlines that meaningful human control is necessary for all weapons to assign responsibility and accountability (Spokesperson of Switzerland 2020). The delegations of Italy, Spain, and Austria agree with this sentiment and reaffirm the necessity for this type of control to apply over the entire life-cycle of LAWS (Spokesperson of Austria 2020; Spokesperson of Italy 2020; Spokesperson of Spain 2020). They express a wish to expand the guiding principles with a specific framework for meaningful human control. This framework is provided by Finland in its commentary on the guiding principles and includes guidelines for human involvement in five phases: weapons review; doctrine, organization, and training; mission planning; launch and point of no return; monitoring the mission and ending it (Spokesperson of Finland 2020). Similar to Finland, Sweden sees value in specific training of military AI operators to ensure IHL compliance when deploying LAWS (Spokesperson of Sweden 2020). While these previous commentaries all looked towards more specification of the guiding principles regarding meaningful human control, Japan shares the sentiment of a necessity for human-machine interaction but opposes specification as not to inhibit development of AI in the private and commercial sector (Spokesperson of Japan 2020).

Similar disinterest in further expansion of the guiding principles was voiced by the delegations of the UK, the Netherlands, and the US, as well as Russia, Australia, and Israel. Australia sees great merit in weapons reviews as dictated by Article 36 of Additional Protocol I to the Geneva Conventions. Parties to AP I are required to conduct weapon reviews during the development process already to determine whether deployment would be possible in compliance with IHL. Australia understands regulation through review as sufficient for ensuring compliance of LAWS with IHL and, therefore, opposes further legislation (Spokesperson of Australia 2020); the UK agrees with this assessment (Spokesperson of the UK 2020). The Netherlands share the view that existing rules are sufficient for AWS regulation, but do not hold the same optimism as Australia about compliance with these rules and, thus, calls for measures to ensure conformity (Spokesperson of the Netherlands 2020). Although Russia agrees that application of IHL (including Art. 36) is vital in regards to LAWS, it sees this best regulated on a national level,

and thus opposes international regulation or expansion of the guiding principles (Spokesperson of Russia 2020). The USA similarly supports the guiding principles in their current form and does not see a necessity for refining them further. The delegation also emphasized their view that any communication of AWS should not include characterization of these technologies into ‘good’ or ‘bad’, as they hold many benefits for military affairs (Spokesperson of the USA 2020). Israel, interestingly, understands the guiding principles as an ambitious product of the GGE already and does not value further regulation (Spokesperson of Israel 2020). They share the view of many other delegations that the focus should be on human-machine interaction but refuse to adopt the common term of meaningful human control and rather use the less restricting terminology of human judgment.

What this analysis of the content of the national commentaries on the guiding principles shows is the two complementary factions within the group regarding concrete measures. Some states propose, others oppose international regulation of military AI. The commentaries offer a first insight into the conflicting interests among GGE participants, but they also show some commonalities. The states agree on the CCW as the appropriate forum for further considerations on LAWS. On the one hand, they all underline the theoretical importance of adherence to International Humanitarian Law and compliance with Geneva Law; how they practically approach threats to applicability, on the other hand, differs significantly. What options remain for moving ahead, requires further evaluation.

4.3.2 Approaches to regulating LAWS in the GGE

As this first analysis of the national commentaries on the GGE’s guiding principles shows, a diverse range of views from a diverse range of actors on the issue of regulating LAWS persists; in the following a more concrete analysis of the different approaches proposed within the GGE discussions will be considered. The approach that has so far found the least support among GGE participants has been that of a non-legally binding approach. Primarily supported by the Portuguese delegation, this approach aims for the “negotiation of a non-legally binding technical outcome comprising a compilation of existing applicable international law and identifying associated good practices and information sharing for States” (Chairperson 2021, p. 11). The negotiations would be based on the existing guiding principles, an expansion of these through specific explanations on the identification and interpretation of relevant law is pursued (Spokesperson of Portugal 2020). The related key terms ‘suggestion’ and ‘guidelines’ are, due to the lack of support for this approach, scarcely found in the data.

In stark contrast to this approach stands the call for a legally binding international agreement that is supported by a plethora of different stakeholders. The key terms considered for this part of the analysis are ‘regulation’ and ‘law’. The results here show that these terms were almost always applied simultaneously with the coding of ‘meaningful human control’. This suggests a strong connection between these two concepts; this connection can be found both in the reasoning for a binding agreement as well as the proposals for the measures this agreement could entail. The idea of a legally binding international agreement to regulate LAWS is supported by all the participating NGOs at the GGE. They

see it as the only viable option and the only way to satisfy the concerns of civil society in regard to these emerging technologies (Spokesperson of HRW 2019). Additional avid supporters of this approach include the NAM countries as well as Austria, Brazil, and Pakistan. Others (e.g., Poland, Slovenia, Sri Lanka, Belgium) are also strongly considering this advance.

As shown, this approach has many sympathizers who “view the introduction of LAWS as unethical, inhumane and unaccountable as well as destabilizing for internal peace and security”, thus, hoping for LAWS to “be pre-emptively banned through a dedicated Protocol of the CCW” (Spokesperson of Pakistan 2018b, p. 2). This argument centers around considerations of ‘meaningful human control’ of the weapons systems, which is evident from Pakistan’s reasoning above that names ethical, accountability, and principles of humanity issues as the motivating factors for a ban on AWS. These are all issues that are closely connected to the human element of warfare, which – in the opinion of the supporters – can only be retained by pre-emptively working towards a ban of weapons systems that are not under human control. Therefore, the aspect of meaningful human control is present in all proposals for specific elements of a legally binding instrument. The Campaign to Stop Killer Robots has come up with some further key elements that they urge to include in regulation (KRC 2019).

The KRC proposal suggests that meaningful human control should be central to all operational components, as well as decisions made to enhance reliability and predictability. They demand any international regulation of LAWS include “a general obligation to maintain human control over the use of force” along with “prohibitions and positive obligations to implement it” (KRC 2019, p. 5). Among the supporters of the legally binding approach, this framework is widely accepted. Calls for explicit international rules to ensure constraints on LAWS are growing especially in light of recognition that currently applicable IHL restrictions of AWS are to be upheld at the discretion of the individual nation-states (like Article 36). Several delegations, including Cuba, therefore, support preventive action that prohibits the development of these technologies (Spokesperson of Cuba 2020).

The concern that nation-states’ responsibility to adhere to IHL is not sufficient for upholding stability is not a shared sentiment among countries. Some consider existing IHL to be sufficient for regulating military AI. They claim that binding regulation would infringe on national sovereignty (Spokesperson of Russia 2020). Notable results of the analysis here show that among those who support this approach are some of the militarily most advanced and traditionally powerful countries, some of which – USA, Russia, Israel, and the UK – have also already started development of their own autonomous weapons systems to be introduced into combat (Horowitz and Scharre 2015). Supporting countries argue that with an adherence to existing IHL, with special attention on the weapons review mechanism as dictated by Article 36 of AP I and the Martens Clause that consolidates the principles of humanity in warfare, LAWS are sufficiently regulated (Spokesperson of Australia 2018). It is, however, worth noting that the US and Israel aren’t signatories to AP I (Spokesperson of Israel 2020; Spokesperson of the USA 2020). Instead of regulation, some countries argue that the sharing of good practices is the most appropriate

way moving forward. Australia and the UK have already started this process by sharing their national weapons review process with GGE participants (Spokesperson of Australia 2018).

Given the broad spectrum of views expressed during the GGE sessions, Germany and France have introduced a working paper calling for a political declaration “which [they] believe would strike the middle ground” (Spokesperson of Germany 2019, p. 2). This compromise is supported by a significant number of mainly European countries among them the Netherlands, Italy, Bulgaria, and Estonia. The political declaration is understood to contain affirmations towards the necessity of human control in the use of force and the importance of human involvement for questions of responsibility and accountability. According to the Franco-German proposal, the declaration would emphasize that humans need to be responsible for making the final decisions in lethal attacks; general human control over autonomous weapons systems should also be maintained (Spokesperson of Germany and Spokesperson of France 2017). The guiding principles would act as a basis for the negotiations of the declarations. The supporting stakeholders have voiced ideas to deduct non-binding commitments and even a non-binding code of conduct from the declaration. It could also be supplemented by voluntary transparency and confidence-building measures. Poland explained its support of this political declaration by emphasizing its value “as an instrument to reflect common understanding” (Spokesperson of Poland 2019, p. 1) within the GGE on LAWS.

To shortly sum up, there are four approaches to regulating military AI. This section of the analysis answers sub-question three; new approaches might either be non-legally binding, legally-binding, a political declaration, or non-existent since current IHL remains suitable. First, there is the non-legally binding approach with few supporters, which can be dismissed in further considerations. Next, there is the view that existing regulation is sufficient especially considering Art. 36 of AP I. This perspective has fewer supporters than others, but among them are powerful nations with extensive military capabilities. This observation means that hypothesis three can be accepted; powerful countries do not propose further regulation and do not wish to move beyond the Geneva Conventions. In contrast to these ideas, there are also calls for a ban on development and deployment of military AI. Supporters here include various NGOs and a plethora of countries from all areas of the globe. This move beyond the Geneva Conventions would include specific binding regulation that ensures retention of human control. Finally, there are suggestions for a political declaration that would build upon the guiding principles and at the moment seems like the most likely compromise.

4.4 Concluding Remarks

Considering that the GGE as well as the overarching CCW operates on the basis of consensus, there currently is shockingly little agreement among participants. Neither terminology nor definition is decided upon at this point. Participating organizations and countries are actively engaged in these processes and work hard on advancing their interests via definition approaches. Both terminology, as well as the specificities of LAWS, are instrumentalised by actors within the group to achieve those

outcomes best suitable to their political agenda. Questions on a concrete universal definition can so far not be answered explicitly; the most popular approach, however, can be identified. The technology-agnostic approach seems to be the most realistic one at this point. A definition that bases LAWS on the level of human control – such as the one proposed by the ICRC – has the potential for acceptance; this focus on human involvement confirms hypothesis one. Meaningful human control is also a prominent concern in identifying the shortcomings of current IHL. Difficulties in compliance with the Geneva principles of distinction, proportionality, and precaution due to a lack of human involvement are identified as the most likely concern regarding military AI. Hypothesis two can be accepted. Still, not every actor agrees that autonomy will lead to problems.

Especially militarily powerful countries refer to the many benefits an introduction of military AI would provide for civilians and combatants affected by warfare. They, therefore, do not support initiatives for legally binding regulation on the issue of LAWS. They regard existing IHL norms as sufficient and, thus, object to a move beyond the Geneva Conventions, confirming hypothesis three. Other participants of the GGE forum vehemently disagree with this position, whatsoever. Some call for a complete ban on autonomous weapons systems and support the efforts of NGOs in this quest. They strongly encourage states to submit to a new legally binding treaty on these systems, therefore, advocating for a move beyond the Geneva Conventions. Others are less extreme in their commitments, but still, see utility in finding common agreements regarding the issue of autonomous warfare. Means such as a political declaration that would clear up some of the confusion on the issue and simultaneously provide (non-binding) guidelines on the use of LAWS have been introduced as a possible compromise and are supported by a plethora of states.

5. Conclusion

The goal of this thesis is to understand current trends in considerations on International Humanitarian Law initiated by the advent of military AI. Specifically, the thesis aims to answer whether experts are working to move beyond the Geneva Conventions to establish regulation for autonomous warfare. To answer the research question, an analysis of the GGE on LAWS sessions was conducted; textual data was collected and analyzed; nation-states' attitudes, motives, and propositions were reflected and put into context. Two main points of discussion remain: the issue of defining the emerging technologies and the suitable way to regulate them in the conduct of war. Emotions run high, nation-states are passionate in their positions as they either fear for their national sovereignty – applicable to those who are opposed to regulation – or they fear for their security – applicable to those who aim to regulate military AI.

5.1 Answering the Research Question

As within the academic realm, experts have not devised a concrete definition of LAWS yet. While academics seem to fail at this task by getting too entangled in specificities and uncertainties of military AI, GGE experts have come to use definitions as first steps to advance their political agenda, thus, making agreement difficult. In international treaties, a definition is a first step to determine what will be regulated by the body of law. The individual countries' positions towards regulation are, therefore, indicated by their opinions on definition approaches. The approach that has thus far received the largest support is a technology-agnostic definition, characterizing AWS by the remaining degrees of human control. Sub-question one can, therefore, not be answered definitively at this point. Sub-question two on the other hand can be answered based on the analysis: Academics and experts agree on the shortcomings of IHL in light of military AI. These insufficiencies lie in the lack of human psychology in AWS, which is essential for the rules of war that were built around humanity. The principles of distinction, proportionality, and precaution are especially relevant in this context.

Still, a complete abandonment of the principles seems not to be a desired outcome of the group. All national commentaries on the guiding principles endorsed the value of the principles of Geneva. A rejection of the Geneva Conventions is, therefore, not detected, but a move beyond the treaties seems ever more likely. The guiding principles also affirmed the CCW to be the appropriate framework to discuss and potentially regulate the issue of LAWS. The CCW – as a Hague-tradition forum – approaches IHL from a prohibition perspective. Whether or not a prohibitory framework will succeed is questionable – to say the least. Bans are only effective if major military powers are ready to give up the technologies; countries like the USA, Russia, China, or Israel would have to desert their programs, which seems unlikely. To answer sub-question three, currently, the most realistic outcome of the GGE sessions seems to be the commitment to a political declaration, which introduces (non-binding) rules of procedure and codes of conduct regarding military AI application. Many states argue that this declaration should include a commitment to retain some human control at all times.

Finally, the overarching research question shall be answered. Military AI has certainly fueled the debate on International Humanitarian Law. Its introduction has laid bare some of the human-centric foundations of these bodies of law. The Geneva Conventions, currently the most important body of IHL, will, with future developments, lose some of their relevance; a shift to Hague-prohibitory measures seems possible. The analysis of expert discussions has shown that talks of a new approach to IHL are certainly active. Still, a complete move beyond the Geneva Conventions is also not seen as likely, since the protective measures for civilians and combatants provided by these treaties are valued highly by almost all members of the international community. A move towards dividing the responsibility of regulating warfare among a variety of treaties and not just the central Geneva Conventions seems a likely future development with the introduction of military AI.

5.2 Further Discussions

With these insights, the research contributes greatly to scientific understanding of the effects of military AI on existing IHL. While this topic has been of interest to the scientific community, no other research has been able to give as precise an interpretation of the GGE sessions and, thus, the future of legislation on AWS. Missiroli already explains how exactly AI would be applied to the military field. He also contemplates some of the benefits, but also challenges that AWS would present (Missiroli 2020); however, the author does remain quite vague in his discussions. The concrete problems the technologies would present – especially to the legality of warfare – remain unmentioned. Cummings also considers AI in the context of warfare and introduces the “current state of the art” (Cummings 2017, p. 2) on military AI. Still, he focuses more on the relationship these military advances have with the commercial sector. From that viewpoint, he concludes that a ban would not be effective, as anything that might be banned in the military domain, could just be developed commercially (Cummings 2017). In his conclusions, whatsoever, he neglects to include current military realities in his considerations.

Haner and Garcia do include practical considerations on the military realities and dynamics in their work. They explore the proliferation of military AI among powerful states and explain how these trends might develop in the future (Haner and Garcia 2019). In their description of future developments, they do not include detailed observations of the dynamics of the international community in this regard. They take a glance at the GGE discussions and specifically those states aiming for a ban (Haner and Garcia 2019), but they fail to show the wide variety of opinions among stakeholders and, therefore, do not give an accurate outlook on the regulation of military AI. This research builds on insights developed by previous scholars in the field; yet, it moves beyond the mere theoretical considerations of what effects military AI can have on international dynamics and IHL and instead explores how the new technologies shape International Humanitarian Law and how states aim to regulate the new technologies. This thesis translates current expert approaches on a reinvention of IHL into the academic sphere.

However, this research must also reflect upon its threats and limitations. Qualitative data was analyzed and interpreted. This risks the influence of underlying biases, especially considering the international

nature of the data. By creating a coding scheme a priori and analyzing the data on the grounds of this scheme it was tried to mitigate the effects of influences from Western socialization, but the risk for bias cannot be resolved entirely. In regards to limitations, especially the availability of data must be taken into account. While a wide variety of pieces of data was analyzed, the research could only take into account what was published on the UNODA website after the GGE on LAWS sessions. A full picture of the different attitudes and approaches could, thus, not be achieved in this research, due to limitations. Further research could try to include interviews with participants or witnesses that were present at the group's discussions; the testimonies of the interviewees might be able to fill the gaps in the data. Unfortunately, this went beyond the scope of this thesis.

5.3 Practical Implications

Despite these limitations, this research was able to advance scientific understanding of the process and future of the GGE on LAWS, however, it also holds practical implications beyond the academic realm. These implications lie in the assistance this thesis can provide to policy-makers. By exhibiting the different issues and opinions policy-makers are provided with a better overview of the process. While the chairperson of each session does publish a summary of the discussions these summaries do not provide explanations on who supports or opposes what measure. This does not provide a full picture of the happenings at the GGE on LAWS and can, therefore, not lead to a real understanding of how military AI is shaping legislative approaches to International Humanitarian Law. This research can serve as a guideline and starting point for policy-makers embarking on regulating military AI. To attain real progress on the issue, military AI developing countries would need to be convinced of its disadvantages. Mobilizing civil society and strengthening the position of NGOs in the discussions would be a next step.

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