
SCHOOL OF GLOBAL STUDIES



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Lethal Autonomous Weapons Systems and International Humanitarian Law

A mixed-methods study to understand and explain how states' position themselves vis-à-vis lethal autonomous weapons systems compliance with international humanitarian law

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Abstract

The purpose of this study is to understand and explain how states' position themselves vis-à-vis lethal autonomous weapons systems (LAWS) compliance with international humanitarian law (IHL). It is important to understand and explain why states' position themselves in the debate on LAWS compliance with IHL due to its rapid development and limited knowledge in this area. In gaining better knowledge of what influences states' to be more or less concerned regarding LAWS compliance with IHL, will give contributions to the disciplines of International Relations and International Law. I will conduct this study in a mixed-methods design of two complementary research approaches, a qualitative and a quantitative. In the qualitative method, I posed three analytical questions to statements from the Group of Governmental Experts (GGE) meeting of 2019. The aim of the first quantitative analysis was to understand if the independent variables are factors to why states' comply with IHL. All hypotheses were supported and reached the conventional levels of significance. In the quantitative analysis to examine states' position on LAWS compliance with IHL, the results did not reach the conventional levels of significance, but mostly confirmed the hypotheses. The issue of LAWS is still at an early stage and much work is left to find convergence and consensus.

Keywords: lethal autonomous weapons systems, cluster munitions, convention on cluster munitions, international humanitarian law, compliance, just war theory

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Abbreviations

CCW Convention on Certain Conventional Weapons

CCM Convention on Cluster Munitions

GGE Group of Governmental of Experts

ICRC International Committee of The Red Cross

IHL International Humanitarian Law

IL International Law

IR International Relations

JWT Just War Theory

LAWS Lethal Autonomous Weapons Systems

MHC Meaningful Human Control

NGO Non-governmental Organisation

UAV Unmanned Aerial Vehicle

UN United Nations

1. Introduction

The issue of lethal autonomous weapons systems (LAWS) was brought up in 2013 by Christof Heyns, the former Special Rapporteur on extrajudicial, summary or arbitrary executions to the United Nations. Christof Heyns is alarmed at the development of LAWS and expresses that “the distinction between weapons and warriors risks becoming blurred, as the former would take autonomous decisions about their own use” (Heyns, 2013). Following his statement, the state parties to the Convention of Conventional Weapons (CCW) held a meeting in 2013 and decided to organise meetings in Geneva to further discuss the potential hazards of introducing LAWS, which have been annually convened from 2014 to 2019. The mandate of the GGE on LAWS is “to discuss the questions related to emerging technologies in the area of lethal autonomous weapons systems, in the context of the objectives and purposes of the Convention” (CCW, 2013).

The issues discussed in the GGE meeting of 2019 concerns: characterisation of LAWS, potential challenges to international humanitarian law, the human element in the use of lethal force, potential military implications of related technologies and addressing the humanitarian and international security challenges posed by emerging technologies in the area of LAWS. States, lawyers, civil society actors and experts are participating in the GGE meetings to discuss the issue of LAWS. Annual meetings and discussions of important issues related to LAWS have resulted in some achievements, for example the adoption of guiding principles. However, little progress has been made in finding consensus and a common path on how to address the issues related to LAWS.

1.1 Research field and gap

The strongest appeal of unmanned systems is that we don't have to send someone's son or daughter into harm's way. But when politicians can avoid the political consequences of the condolence letter—and the impact that military casualties have on voters and on the news media—they no longer treat the previously weighty matters of war and peace the same way (Singer, 2009).

How do states' understand LAWS compliance with IHL? How can we understand and explain the relationship between states' position on LAWS compliance with IHL? What influences states to ratify IHL-conventions? To explain and understand why states commit to IHL treaties is a complex question that has been given attention in recent years (Hathaway, 2007; Guzman, 2002).

However, we are still posing multiple questions with few answers. This essay is an attempt to fill the knowledge gap to understand and explain how states understand LAWS compliance with IHL. It is important to explore how states' position themselves in the discussion on LAWS compliance with IHL due to its potential deployment in the battlefield and alarming discussions regarding a potential lack for LAWS to comply with IHL. We do not know why some states are more or less concerned regarding LAWS compliance with IHL, due to limited research. Therefore, I will attempt to understand and explain the relationship between states' position on LAWS and how they understand LAWS compliance with IHL. Many factors can influence states' positions on LAWS compliance with IHL. Therefore, to explore which factors that may influence states' position on LAWS compliance with IHL, I will study states ratification of the Convention on Cluster Munitions (CCM). We can expect that factors that influence states ratification of the CCM may also influence states' positions on LAWS compliance with IHL. However, LAWS and cluster munitions are without doubt two different weapons, since one could be designed as autonomous, while the other is a conventional weapon. By studying states ratification of IHL-conventions, we can gain knowledge why states ratify IHL to then study how states understand LAWS compliance with IHL. I expect that states' positions on CCM ratification may give some knowledge about what influences states' positions on other weapons. Therefore, I will theorise and explain what may influence states position on CCM ratification and LAWS compliance with IHL. I will combine the disciplines of International Relations (IR) and International Law (IL), and we will get a deeper understanding between the relation in these two disciplines. This approach seems to be a new area of research that will add more knowledge on states' positions to certain weapons compliance with IHL.

Previous research on LAWS (Krishnan, 2009; Sharkey, 2010; Asaro, 2008; Asaro, 2012; Heyns, 2016) has studied LAWS compliance with IHL and ethical implications. LAWS raise concern regarding their compliance with the rules of IHL.¹ One of the raised concerns relates to the principle of proportionality and how the development of LAWS can transform the assessment of proportionality into algorithms. Another concern relates to the potential violation of distinction and whether LAWS would be able to distinguish between combatants (soldiers) and non-combatants (civilians) in the battlefield. Most conflicts occur in urban warfare, where combatants often take shield in the civilian population and the use of LAWS could risk striking wrongful targets (Krishnan, 2009:4). Sharkey (2010:380) argues that "there is no way for a robot to perform the human subjective balancing act required to make proportionality decisions". Further, Davison (2018) states that to ensure compliance with IHL, some degree of human control is necessary.

¹ The rules of IHL are outlined and defined in section 2.1.

One of the raised questions in the deployment of LAWS to comply with the principle of precaution, without meaningful human control (MHC)², how could an operation be terminated if risks toward civilian and civilian objects increased? Further, a machine can never be held accountable for violating IHL, since they are not legal agents. Sparrow (2007) examines who will be held accountable, if even anyone can be held accountable in cases of violations to IHL. Sparrow (2007) considers that when examining the accountability of the programmer, the military commander and the robot, he concludes that no one is enough or fair to be held accountable due to the complex processes of LAWS.

Cluster munitions are weapons that contain from two to hundreds of submunitions that open in the air and have wide area effects. Therefore, cluster munitions impact a large area and are not reliable to distinguish between combatants and non-combatants. One of the issues with cluster munitions is that they sometimes fail to explode when hitting impact on the ground. This increases risks to civilians and children when accidentally stepping on a cluster bomb or playing with the weapon (Cluster Munition Monitor, 2019). The CCM was established in 2008 and bans state parties to use, develop, produce, stockpile or transfer cluster munitions.³ Further, state parties are under obligation to clear and destroy cluster munitions remnants.⁴

How do states understand LAWS compliance with IHL and position themselves in the discussion of LAWS compliance with IHL? What may influence states' positions on conventional and non-conventional weapons? Do states expect that accountability will be guaranteed, even if life and death decisions are monitored and executed by a robot? Previous research (Chojnacki, 2006:34; Geis, 2006:158; Sauer and Schörnig, 2012; Shaw, 2002) suggest that democracies in comparison to non-democracies are eager to use and hold LAWS because they are casualty averse and checked by public opinion. Democracies are dependent on the public's consent and if during a military operation the number of military casualties would rise, then the public could demand to end the military operation. Therefore, by employing LAWS, the issue of military casualties and democracies sensitivity to military casualties is by-passed, and states can continue with their military operations without considering negative public opinion. Further, those states more eager and less concerned about LAWS compliance with IHL would likely be militarily strong states with economic power. However, in comparison to conventional weapons, such as cluster munitions, the argument for democracies' eagerness toward autonomous weapons is not as consistent. Instead, democracies would be more likely to have ratified the CCM in comparison to non-

² Meaningful human control (MHC) is commonly used when discussing the development of LAWS. MHC refers to human control over selection and engagements of targets, for example distance to a target, information and sufficient level of human intervention. However, actors (states and NGOs) have various definitions of MHC.

³ Commentary Article 1 of the CCM.

⁴ Commentary Article 4 of the CCM.

democracies. This is because democratic states are more prone to ratify the CCM since democracies are more likely to inhabit a normative commitment to moral principles of IHL (Meernik and Shairick, 2011). Secondly, another factor why some states would be more concerned regarding LAWS compliance with IHL and more likely to ratify the CCM, could be a higher women's representation in national parliaments and ministerial levels. Previous research (Koch and Fulton, 2011; Regan and Paskeviciute, 2003; Caprioli, 2000) demonstrate quantitative evidence that a higher descriptive representation of women in political offices increases the substantive representation of less engagement in military disputes, make these states more inclined to solve conflicts with non-military actions and a lower percentage of military defence spending.

1.2 Research approach and purpose

We do not know what unifies and what separates the participating states' in the GGE meetings. I will attempt to understand why some states are less concerned regarding LAWS compliance with IHL and why some states are urging for an international legal binding instrument on LAWS. Much research has been conducted to examine whether LAWS is in compliance with IHL (Sharkey, 2010; Davison, 2018; Sparrow, 2007; Krishnan, 2009). This essay will not attempt to answer or analyse whether LAWS are compliant or not with IHL. The aim of this thesis is to gain knowledge in understanding and explaining how states' position themselves regarding LAWS compliance with IHL and to explain what influences states to ratify IHL-conventions. I will therefore add lacking research on how states' position themselves in the discussion on LAWS in the GGE meetings. I will also add a knowledge gap on what influences states' positions on conventional and non-conventional weapons. To my knowledge, this is the first attempt to tackle these questions.

This study will be analysing firstly qualitatively the statements from participating states' in the GGE meeting of 2019. I will adopt Just War Theory (JWT) to *understand* the position states' have in relation to three themes: (1) *Jus in Bello* and LAWS, (2) Responsibility, Accountability and Meaningful Human Control, and (3) The Path to Ensure LAWS Compliance with IHL. Secondly, due to limited quantitative research to explain how or why states position themselves on LAWS compliance with IHL, I will study states ratification of the CCM. The quantitative analysis on CCM ratification will be examined to see how ratification may be influenced by: 1) level of democracy, (2) GDP, (3) military expenditure, (4) women's representation in the national parliament and (5) women's representation in the ministerial level. Thirdly, I will run the same independent variables to *explain* why states' position themselves in LAWS compliance with IHL.

This thesis research questions are:

1. *How can we understand and explain states' positions on how lethal autonomous weapon systems are in compliance with international humanitarian law?*
2. *How does this relate to what influences states' positions on conventional weapons?*

Going forward, I will firstly introduce IHL and explain the three IHL principles: the principle of proportionality, the principle of distinction and the principle of precaution. Further, I will also give basic knowledge on Article 36 and the Martens Clause. Then, I will introduce two theoretical frameworks. After introducing the theoretical frameworks, I will explain the hypotheses and causal chain based on theoretical considerations for states' positions on CCM ratification and LAWS compliance with IHL. Then, I will explain the benefits of conducting a mixed-methods study, summarise the collection of data and explain the analyses with its limitations. Following explaining the research design and methods, I will carry out the thematic analysis of the statements in the GGE. After the thematic analysis, I will do two quantitative analyses on states' positions of CCM ratification and LAWS compliance with IHL. Lastly, I will have a discussion on the results and the implications of LAWS introduction into the battlefield.

2. International humanitarian law

In this section, I will summarise what IHL consists of and why IHL is important to understand in its relevance to LAWS. I will then summarise what the three rules of IHL consists of and what IHL require belligerents to assess before military attacks. Then, I will explain and add two elements of IHL which is relevant to the development and potential deployment of LAWS: Article 36 and the Martens Clause of AP I. The rules of IHL, Article 36 and the Martens Clause are important to understand in order to grasp the discussions of the GGE meeting of 2019. Thus, the purpose of this section is to give basic knowledge on IHL to understand the qualitative analysis of this thesis.

International humanitarian law (IHL) is enforced during hostilities and active conflict. IHL is also referred to as the laws of war or law of armed conflict or *jus in bello*. IHL seeks to limit the negative humanitarian consequences, to protect civilians and to regulate how war is perpetrated. IHL recognises that war will be waged, which generally entails death, injury and destruction. Nonetheless, war should never be unlimited or waged in unconstrained means or methods. Therefore, all belligerents in conflicts must respect the rules of IHL. By that, IHL regulates to have an approach of “limited warfare” of means and methods of how war is waged and requires all belligerents to persistently balance military necessity against humanity (Oeter, 2008:127).

2.1 The rules of international humanitarian law

2.1.1 The principle of proportionality

The principle of proportionality is embedded in Article 51(5)(b) in AP I (1977):

An attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated. (Geneva Convention (1977) Protocol I Additional to the Geneva Conventions, Art 51 (5)(b)).

Belligerents must weigh military advantages of successfully carrying out an attack against humanitarian consequences. Therefore, it prohibits attacks that may “cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated”. If the military value targets would be advantageous if expected success, then this would justify some civilian loss or harm in comparison which low military value targets would not (Melzer, 2019:101)

If these assessments would be taken by LAWS, this would probably be even more difficult than for humans. This depends however on the operational environment LAWS would be operated in. For example, if the operational environment would be in areas with limited civilian presence, then the principle of proportionality would perhaps be less difficult to assess.

2.1.2 The principle of distinction

The principle of distinction preambles whether a person is a military target (combatant) or a civilian (non-combatant). This principle applies to all active parties and persons in hostilities who must distinguish between a non-combatant and a combatant. The principle is clarified in Article 48 in AP I:

In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives. (Geneva Convention (1977) Protocol I Additional to the Geneva Conventions, Art. 48).

All civilians and civilian objects are protected under IHL and should not be subjected to any harm during conflict. In cases where there is doubt whether a person is a civilian or a combatant, “that person shall be considered to be a civilian” (Article 50 (1) of AP I). Protection against military attacks is guaranteed for civilians⁵, medical, religious and civil defence personnel of the armed forces and all persons *hors de combat* (Melzer, 2008:301-302).

The issue of complying with the principle of distinction is whether such a weapon as LAWS could, for example carry out an adequate distinction assessment between a person *hors de combat* and a combatant. From that moment a combatant is incapacitated, surrendered or is wounded, that person becomes an illegitimate military target and should be protected. If a person *hors de combat* would still carry military uniform, could LAWS distinguish that person from a combatant? Further, LAWS would have to distinguish from a tank and a school bus, but also to determine if it is proportionate to launch a weapon and if it would endanger nearby civilians.

⁵ Commentary Article 51 of AP I

2.1.3 The principle of precaution

The principle of precaution calls for precaution when carrying out military operations in order to protect civilians and civilian objects. The principle of precaution is found in Article 57 in AP I:

...take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects. (Geneva Convention (1977) Protocol I Additional to the Geneva Conventions, Art. 57(2)(a)(ii).

...an attack shall be cancelled or suspended if it becomes apparent that the objective is not a military one or is subject to special protection or that the attack may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated (Geneva Convention (1977) Protocol I Additional to the Geneva Conventions, Art. 57(2)(b).

To assess precaution, a military operation must always choose means and methods of attack to avoid and minimise that would cause loss, death or injury to civilians or damage to civilian objects. The means and methods must always be chosen to target the military target as precisely as possible and not use weapons which causes widespread or incidental damage or harm to non-military targets. Further, a military operation must always be able to be cancelled or suspended if it would be apparent that the operation would expect to cause incidental loss to civilians or civilian objects, which would be excessive in relation to the expected military advantages⁶.

We do not know what level of autonomous LAWS will have, but if the human would be “out-of-the-loop”, in other words not involved at any steps of the life cycle of LAWS, then there would be no possibility to end or suspend a military operation. Since LAWS would then be sent into the battlefield, in an autonomous nature, of detecting, selecting, targeting and firing without any human interference, then it would be impossible to end that mission.

2.2 Article 36

Article 36 is referenced in AP I:

In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in some

⁶ Commentary Article 57 (2)(b) in AP I

or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.

The aim of Article 36 is to prevent the use of weapons that would violate IHL and to enforce restrictions on the use of those weapons which would violate IHL before they are developed, acquired or deployed in the battlefield (ICRC, 2006). The “means of warfare” refers to the use of a specific weapon that could be unlawful in itself, for example cluster munitions or chemical weapons, or that the use of a weapon is unlawful, for example using weapons in densely populated areas of civilians. Further, when referring to the “method of warfare” are those methods that are prohibited by treaty and customary IHL, for example starvation or pillage (ICRC, 2006).

2.3 The Martens Clause

The Martens Clause is cited in several legal treaties; however, it is most cited from AP I:

In cases not covered by this Protocol or by other international agreements, civilians and combatants remain under the protection and authority of the principles of international law derived from established custom, from the principles of humanity and from the dictates of public conscience (Geneva Convention (1977) Protocol I Additional to the Geneva Conventions, Art. 1(2)).

To summarise, the Martens Clause can be referred in those cases where AP I or other international treaties are not covered by any treaty. The Martens Clause should be treated as a reminder that civilians and combatants will always remain under “the protection from the principles of humanity and the dictates of public conscience”. Thus, civilians and combatants shall never be deprived from protection in conflicts in the lack of legal instruments. Further, the Martens Clause recognises that customary law continues to apply and that even though an element has not been prohibited, it should not be allowed. However, the significance and the interpretation of the Martens Clause is disputed (Greenwood, 2008:34-35).

We have now basic knowledge of IHL and know what the IHL principles are, why they are important and how LAWS must comply with those principles. Going forward, I will theoretically consider how the qualitative and quantitative analyses will be conducted.

3. Theory

In this section, I will outline this thesis two frameworks: 1) Just War Theory; and 2) Incentives and The Costs of Complying with IHL. This thesis research questions will be answered in a mixed-methods design, firstly in a qualitative analysis and then in two quantitative analyses. Just War Theory is the theoretical framework for the qualitative analysis. Incentives and The Costs of Complying with IHL is the theoretical framework for the quantitative analyses.

3.1 Just War Theory

As Michael Walzer (1977:22) has stated “War is hell”. Nonetheless, there exists rules in wars regarding what is permitted, for example “belligerent armies are entitled to win their wars, but they are not entitled to do anything that is or seems necessary to win” (Walzer, 1977:131). The *just war theory* (JWT) consists of *jus ad bellum* (under what conditions it is just to go to war), *jus in bello* (the just conduct of parties in conflicts) and the more recent addition *jus post bellum* (the management of post-conflict). By applying JWT, we will gain knowledge and understand how states understand IHL compliance. JWT will be a guiding framework to understand how states position themselves in LAWS compliance with IHL. Previous research (Krishnan, 2009; Sparrow, 2007) have applied elements of JWT to understand how LAWS may challenge the just war principles.

Sparrow (2007) considers *jus in bello* in the responsibility dilemma of the use of LAWS which requires that someone must be *justly* held responsible for its actions. Sparrow (2007) argues that no one can be held justly responsible in the use of LAWS. In wars, someone has to be held responsible for war crimes and killings. If LAWS would be *fully* autonomous, in the sense that life and death decisions will be executed by LAWS, who will be held responsible? Sparrow (2007) analyses whether the programmer, the military officer or the robot would or could be responsible. Firstly, it would be improbable to hold the programmer responsible, since if the LAWS is *autonomous* then it will have the capacity to learn from its environment to make decisions based on its surroundings rather than its programming. Therefore, to hold a programmer responsible, would not be reasonable. Secondly, to hold a commanding officer responsible for the acts of an autonomous system that chooses independently the military targets, would not be fair since it is the machine that chooses the targets. Thirdly, to hold a machine responsible, would be hard to imagine since one of the requirements of responsibility is to be able to punish an actor. Someone has to be morally responsible and to be able to apply locus of blame or promise. Therefore, to

apply JWT to the statements, I will analyse how states conceive the role of responsibility, accountability and level of meaningful human control related to LAWS.

Further, potential violations of IHL rules are raised by Krishnan (2009) et.al. The principle of distinction is challenged since most armed conflicts are conducted in urban areas with civilian and civilian objects. Therefore, it would be difficult to distinguish between non-combatants and combatants (Krishnan, 2009:4). Based on the implications on *jus in bello*, I will consider how states perceive LAWS compliance with IHL and how to ensure LAWS compliance with IHL.

In this theoretical framework, I have considered three important themes to *understand* states' position on LAWS compliance with IHL and how they apply and comprehend IHL in relation to LAWS. These are: 1) *Jus in Bello* and LAWS, 2) Responsibility, Accountability and Meaningful Human Control and 3) The Path to Ensure LAWS Compliance with IHL. Based on previous research and theoretical framework, I will outline three analytical questions that will be tools to understand states' position on LAWS compliance with IHL. The first question is "What are the states' positions on LAWS compliance with IHL principles?". The second question is "What are the states' positions on the issues of responsibility, accountability and meaningful human control?". The last question is "What are the states' positions on how to ensure LAWS compliance with IHL?"

3.2 Incentives and Costs of Complying with IHL

This theoretical framework argues that the domestic regime and the potential costs or incentives of complying with IHL contribute to determining states compliance with IHL. One of the potential factors is the level of democracy. However, I expect different incentives for democracies to comply with IHL differently between LAWS and the CCM. This is due to the nature of these two weapons: LAWS could be designed as fully autonomous weapons systems and cluster munitions are conventional explosive weapons lacking an autonomous nature. Therefore, I expect some differences between states' position on LAWS compliance with IHL and CCM ratification. Firstly, I expect that democracies in comparison to non-democracies have ratified the CCM. I expect this because democracies have generally good human rights policies and are more likely than non-democracies to follow human rights at home (Meernik and Shairick, 2011). Secondly, I expect that democracies are less concerned regarding LAWS compliance with IHL because LAWS contribute with certain benefits which is especially appealing to democratic states (Chojnacki, 2006:34). The population in democracies are generally casualty-averse and democratic states have to win the general public approval to wage wars. Thus, democracies are checked and restrained by

public opinion (Geis, 2006:158). If public opinion would disapprove of a war because of a rising number of military casualties, the democratic state could be forced to end the military mission or may risk being punished at the ballot box (Sauer and Schörnig, 2012). Therefore, I argue that democracies are driven by casualty-aversion and are eager to develop and hold LAWS, since they remove their soldiers from the battlefield.

Further, other quantitative research (Meernik and Shairick, 2011) study states incentives to ratify the International Criminal Court (ICC). Democratic states generally, according to Meernik and Shairick (2011), inhabit a normative commitment to moral principles on IHL on e.g. war crimes, crimes against humanity and genocide. Therefore, democracies are more likely to comply with IHL. Further, democratic states are more likely to ratify the ICC due to not expecting negative costs of being prosecuted since they are more likely to have good human rights policies. Thus, states with strong human rights policies will have low compliance costs since they already follow those human rights principles at home. Further, when accounting ratification costs, Meernik and Shairick (2011) expect that states with large numbers of military personnel will be less likely to ratify due to the increased risks of being prosecuted in the ICC. Meernik and Shairick (2011) quantitative results support the hypothesis that democratic states with strong human rights records are more likely to support the ICC. Also, there is a lower ratification rate for states with a larger number of soldiers. I expect states with a higher military expenditure to be less concerned regarding LAWS compliance with IHL and less likely to ratify the CCM. I also expect that those states that are less concerned about LAWS compliance with IHL and less likely to ratify the CCM are economically strong, as they hold the economic resources to develop or buy LAWS.

Consistently, Guzman (2002) agrees that the incentive to comply and ratify with international law is largely determined by costs or benefits of ratifying. Further, Guzman (2002) continues that norms may be a compliance pull-factor for states to ratify treaties. By measuring both CCM ratification rate and states' positions on LAWS compliance with IHL, we will gain knowledge about whether established norms against certain weapons may result in a higher compliance pull-factor. Since LAWS is a weapon under development and there is no ban treaty on LAWS, no international norm against LAWS exists. Therefore, we might expect a stronger association when measuring CCM ratification in comparison to states' position on LAWS compliance with IHL.

Further, I expect states with a higher women's representation in the national parliament to be more concerned regarding LAWS compliance with IHL and yield a higher ratification rate of the CCM. Quantitative evidence from previous studies demonstrate that a higher descriptive representation of women in parliaments increases the substantive difference of less military

defence spending for established democracies (Koch and Fulton, 2011), less engagement in militarised disputes (Regan and Paskeviciute, 2003) and solves conflicts more often with non-military actions (Caprioli, 2000). A higher presence of women in national parliaments results in less conflict-prone behaviour and foreign policies with more peaceful resolutions in conflicts. However, I recognise, consistent with Koch and Fulton (2011) that the majority of foreign policy decisions takes place at the executive level. Koch and Fulton (2011) finds that defence spending decreases with higher women's representation in national parliament. However, defence spending increases for democracies with a higher women's representation on the executive level.

However, a higher women's representation in political offices does not result necessarily in generating women's opportunities to affect foreign policy outputs. Even though more women are entering political spheres, they may be hindered to promote peaceful resolutions or gender equality by patriarchal structures and masculine work environments (Cheeseman, Onditi and D'Alessandro, 2017). Therefore, even though there may be a correlation between women's representation and stronger compliance with IHL, it is difficult to prove that it is in fact women's descriptive representation that influences anti-military decisions. Therefore, I argue that women's ability to influence substantive output is context-based by gender stereotypes and informal patriarchal structures in the policy level. This is not feasible to measure in this thesis; however, I theoretically take this into relevance.

3.3 Hypotheses and causal chain

3.3.1 Hypotheses

H1: Democracies are less concerned regarding LAWS compliance with IHL in comparison to non-democracies.

H2: Democracies are more likely to ratify the CCM in comparison to non-democracies.

H3: States with a higher military expenditure are less concerned regarding LAWS compliance with IHL and less prone to ratify the CCM.

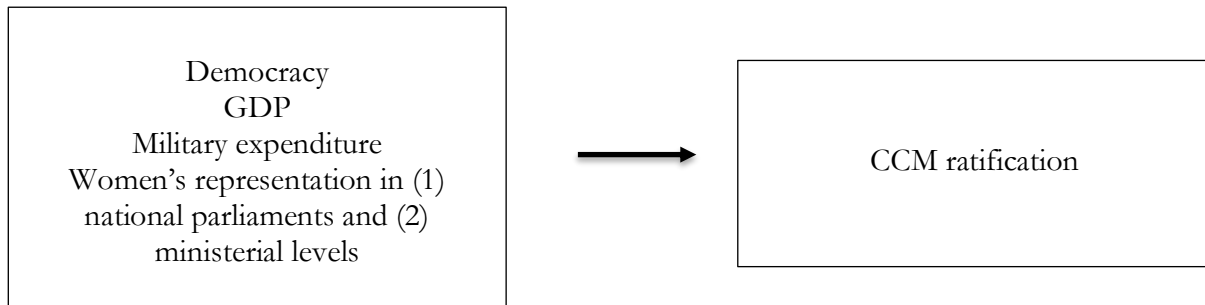
H4: Economically wealthy states are less concerned regarding LAWS compliance with IHL and less prone to ratify the CCM.

H5: States with a higher descriptive representation of women in national parliaments are more concerned regarding LAWS compliance with IHL and more likely to ratify the CCM.

H6: States with a higher descriptive representation of women in ministerial levels are more concerned regarding LAWS compliance with IHL and more likely to ratify the CCM.

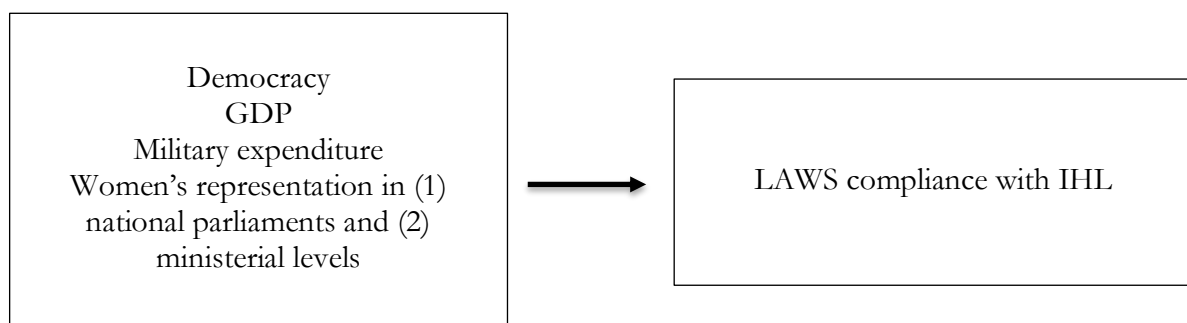
3.3.2 Causal chains

3.3.2.1 The causal chain for CCM ratification



This is the causal chain for the quantitative analysis on CCM ratification. In this quantitative analysis, I have five independent variables: (1) democracy, (2) GDP, (3) military expenditure, (4) women's representation in the national parliament, (5) women's representation in the ministerial level, and one dependent variable: CCM ratification. Firstly, I expect the relationship between democracy and CCM ratification to be positive, since democracies are expected to be more prone than non-democracies to have good human rights policies. Secondly, I expect the relationship between economically strong states and CCM ratification to be negative, because strong economies are expected to be less likely to ratify IHL conventions. Thirdly, I expect the relationship between military strong states to be less prone to ratify the CCM. Fourthly, I expect the relationship between women's representation in the national parliaments and ministerial level to be positive. A higher women's representation in a state is expected to be more likely to ratify IHL conventions and engage in demilitarisation efforts.

3.3.2.2 The causal chain for LAWS compliance with IHL



This is the causal chain for quantitatively measuring LAWS compliance with IHL. In this analysis, I have five independent variables: (1) democracy, (2) GDP, (3) military expenditure, (4) women's representation in the national parliament and (5) women's representation in the ministerial level, and one dependent variable: LAWS compliance with IHL. Firstly, I expect the relationship

between democracy and LAWS compliance with IHL to be negative. I theorise that democratic states are more eager to employ LAWS since they minimise military casualties and therefore less concerned regarding LAWS compliance with IHL. Secondly, I expect economically strong states and LAWS compliance with IHL to be negative. Thirdly, I expect the relationship between military expenditure and LAWS compliance with IHL to be negative. I theorise states with a higher military expenditure in comparison to states with a lower military expenditure to be less concerned regarding LAWS compliance with IHL. Fourthly, I expect higher descriptive representation of women in the national parliament and ministerial level to be more concerned regarding LAWS compliance with IHL. A higher women's representation is theorised to be more concerned regarding LAWS compliance with IHL. Since most of the foreign policy decisions are formulated in the executive level, this variable is more pertinent to explain to what extent women's representation affects states' position on LAWS compliance with IHL.

4. Research design and methods

In this section, I will explain the research design and the two methods in this thesis. Further, I will go through the qualitative and quantitative methods and explain the operationalisation of the independent and dependent variables. Then I will summarise the selected variables and statements from the GGE meeting. Lastly, I will explain the limitations and scope.

The purpose of this study is to test the theoretical frameworks in two research approaches: a qualitative and a quantitative. The first theoretical framework based on Just War Theory provides the guiding framework to understand the states' positions on LAWS compliance with IHL. From that theoretical framework, I have formulated three analytical questions to *understand* states' positions on LAWS compliance with IHL. The second theoretical framework aims to quantitatively *explain* the states' positions on LAWS compliance with IHL and why states have ratified the CCM. Based on the second theoretical framework, I have outlined six hypotheses, consisting of five independent and two dependent variables. As I will test a large number of data, the optimal and most effective option to test this is in two simple regression analyses (Esaiasson, Giljam, Oscarsson, Towns and Wängnerud, 2017:96).

I first considered to conduct only a qualitative method, but then the data material allowed me the potential to also do a quantitative method. The advantage of employing a mixed-methods design is the ability to answer the research question by two methods. A qualitative method contributes to understanding the problems more in-depth and a quantitative method helps to generalise findings. The issue of LAWS is a difficult one, and using a mixed-methods design will contribute to gaining more knowledge by first *understanding* the problem using a qualitative method and then *explaining* the issue in a quantitative method. By using a mixed-methods design, the result outcome will be stronger than either method individually. By employing both a quantitative and qualitative method, I will be able to grasp and explore the issue of LAWS more in-depth which I would not be able to do by using one of the methods. Thus, the mixed-method design is not two separate analyses, but two complementary analyses to understand and explain the issue of LAWS. However, I will only use a mixed-methods design for LAWS compliance with IHL. I will only study why states ratify the CCM in a quantitative method. The aim of the quantitative analysis on CCM ratification is to bring more knowledge on how states' position themselves in relation to certain weapons compliance with IHL.

4.1 Collection of data

4.1.1 Collection of statements

I collected statements from the most recent GGE meeting of 2019 held between 25-29th of March. A total of 89 states participated in the GGE meeting. Of the 89 participating states, 47 states made a statement and from this I narrowed down to 34 states.⁷ This thesis is limited, and I would not be able to analyse all statements. I therefore limited down to 34 states and selected from two aspects: relevance in the debate and geographical aspect. In the selection of relevance in the debate, I included states known to have strong opinions in the GGE meetings. In the selection of geographical aspects, I aimed to include states from all areas of the world to cover a regional inclusion.⁸

To gather the statements from the GGE meetings, I have collected them in four ways: through a database of collected statements gathered by Reaching Critical Will (Reaching Critical Will, 2020), through contact with the organisation PAX for Peace⁹, United Nations Geneva Website (United Nations Geneva, 2020a) and through UN's Digital Records (Digital Records Portal, 2020). Some of the countries statements I selected had been transcribed from Reaching Critical Will, PAX for Peace and the United Nations Geneva Website, but some of the countries I had selected were not. To gather those statements, I transcribed the statements from UN recordings (Digital Records Portal, 2020). Of the 34 statements, I collected five statements¹⁰ from Reaching Critical Will, ten statements¹¹ from PAX for Peace, two statements¹² from UN's Geneva's Website and transcribed 16 statements¹³ from UN Recordings. The meeting of 2019 covered five agenda items. Due to the limitations of this study, I could not manage to analyse statements from all agenda items. Therefore, I chose one of the agenda items that I expected would answer the research questions. The most suitable agenda item was "5a) An exploration of the potential challenges posed by emerging technologies in the area of LAWS to International Humanitarian Law". However, some countries did not provide a statement during agenda item 5a, but provided statements in other

⁷ View appendix 1 for full list of the participating states, states who made a statement and the selected countries in the database.

⁸ In section 4.4 I have summarised the total number of countries and those countries included in the database.

⁹ The NGO PAX for Peace conducts yearly summaries over the GGE meetings on LAWS. I contacted the organisation and they provided me with their collected statements from their study. They had collected their statements from the European participating delegations in the GGE meetings of 2019.

¹⁰ Austria, Brazil, Greece, Ireland, Netherlands

¹¹ Finland, Belgium, Estonia, Germany, Luxembourg, Poland, Portugal, Sweden, Switzerland, United Kingdom

¹² India and Israel

¹³ Algeria, Australia, Canada, Chile, China, Costa Rica, Ecuador, France, Iraq, Japan, Mexico, Pakistan, Republic of Korea, South Africa, Russia, United States

agenda items. Therefore, the majority of statements collected are from agenda item 5a, but a few are collected from other agenda items to provide their position on LAWS compliance with IHL.

4.1.2 Collection of the quantitative data

4.1.2.1 Operationalisation of the independent variables

This study has five independent variables: democracy, GDP, military expenditure, women's representation in the national parliament and women's representation in the ministerial level.

Democracy is operationalised from the Polity IV score from 2018, since they have not analysed the Polity IV score from year 2019 (Center for Systematic Peace. (2018). The polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic).

GDP is operationalised from the World Bank database on the variable "GDP, PPP (current international \$)" from 2019 (World Bank, 2019a). The indicator values GDP in current international dollars and is converted by purchasing power parity (PPP). GDP is defined as "the sum of gross value added by all resident producers in the country plus any product taxes and minus any subsidies not included in the value of the products" and PPP conversion factor is defined as "a spatial price deflator and currency converter that eliminates the effects of the differences in price levels between countries". Since the values of each states' GDP is too long for the programme STATA to manage, I multiplied each value with 1 million to limit the numbers of the GDP.

Military expenditure is collected and operationalised from Stockholm International Peace Research Institute (SIPRI) database (SIPRI, 2019). The variable consists of military expenditure by country as percentage of GDP in 2019.

Women's representation in the national parliament is collected from Inter-Parliamentary Union Parline: Global data on National Parliaments. I collected the percentage of the national parliament from January 2019, since the GGE meeting was in 2019 (Inter-Parliamentary Union, 2019). The score ranges from 0%-100%.

Women's representation in the ministerial level is operationalised from the World Bank database on "Proportion of Women in Ministerial Level Positions". The definition is "Women in ministerial level positions is the proportion of women in ministerial or equivalent positions (including deputy prime ministers) in the government. Prime Ministers/Heads of Government are included when they hold ministerial portfolios. Vice-Presidents and heads of governmental or public agencies are excluded" (World Bank, 2019b). The score ranges from 0-100% and is collected from 2019.

4.1.2.2 Operationalisation of the dependent variables

The two dependent variables consist of LAWS compliance with IHL and CCM ratification.

LAWS compliance with IHL is collected from various sources as outlined in *section 4.1*, consisting of statements from the selected 34 countries in the GGE meeting. I quantified the states position on LAWS compliance with IHL from the qualitative analysis of the statements and codified a variable that captures the 34 states position on LAWS compliance with IHL. The variable is coded from 0-2. In *figure 1* I have in detail outlined how I have codified the variable and the requirements to receive the value (0-2) of the variable. I have limited down to three values of the variable, because I found three to some degree homogenous groups in their position on LAWS compliance with IHL. The value of (0) consists of those countries that 1) express a full compliance with IHL, 2) raise no concern on LAWS compliance with IHL and/or 3) express a greater compliance with IHL in comparison to other weapons. The value of (1) includes states which have addressed 1) some concern regarding compliance with IHL but does not explicitly suggest there does not exist no compliance with IHL. The value of (2) consists of those states which have 1) expressed serious concern regarding LAWS compliance with IHL and/or 2) encouraging a legal instrument on banning LAWS.

Figure 1: Codifying of statements: LAWS compliance with IHL

0	Full compliance with IHL, raising no concern regarding the compliance with IHL and/or arguing for a better compliance with IHL in comparison to other weapons.
1	Some concern regarding LAWS compliance with IHL, but not entirely arguing against a non IHL-compliance with LAWS.
2	Expressed serious concern regarding LAWS compliance with IHL and/or encouraging a legal instrument on banning LAWS

CCM ratification is operationalised in a dichotomous variable from the United Nations Geneva's website (United Nations Geneva, 2020b). The variable is codified (0) if the country has not ratified the CCM and a (1) if it has not ratified the convention.

To find the codification of the dependent variables, see appendix 2. However, if interested in collecting the whole database, then the database can be collected through the author.

4.2 The analyses

4.2.1 The qualitative analysis

The purpose of the qualitative analysis is to understand states' positions on LAWS compliance with IHL and how they understand IHL compliance. To do so, I will analyse 34 states' statements in the GGE meeting of 2019. The aim is to understand how states' position themselves in three themes: (1) *Jus in Bello* and LAWS, (2) Responsibility, Accountability and Meaningful Human Control, and (3) The Path to Ensure LAWS Compliance with IHL. I will therefore answer the three following questions: (1) "What are the states' positions on LAWS compliance with IHL principles?", (2) "What are the states' positions on the issues of responsibility, accountability and meaningful human control?", (3) "What are the states' positions on how to ensure LAWS compliance with IHL?". Therefore, the most suitable option to analyse is through a thematic analysis. I have chosen this method, since the aim is not to validate or critically review states arguments in the statements. Therefore, I will not carry out a critical text analysis or an argumentation analysis since they are not suitable to what I am aiming to analyse (Esaïasson, Gilljam, Oscarsson, Towns & Wängnerud, 2017:214). Since this is to my knowledge the first time someone studies and reviews the GGE meeting in these aspects, the thematic analysis by Braun and Clarke (2006) would be appropriate. Thematic analysis is a method "for identifying, analysing and reporting patterns (themes) within data" (Braun and Clarke, 2006:79). The advantage of a thematic analysis is its flexibility and the researcher is not restrained to certain established theoretical frameworks. Therefore, the thematic analysis allows me to be flexible in my analysis. Thus, the method is chosen due to limited research in this area, material and purpose.

The themes will be identified in a 'top-down' way. I formulated the three questions based on the theoretical framework and with some knowledge of the material since I had transcribed the majority of the statements. Therefore, I have a deductive approach in the thematic analysis. Further, I will identify themes in a semantic way, since I am not interested in understanding latent themes in the statements. If I were interested in understanding the underlying ideas why state A and state B have various positions on LAWS compliance with IHL, I would analyse the data in a latent way (Braun and Clarke, 2006). Based on the theoretical framework of JWT, I am looking after patterns that would contribute to knowledge on how states' position themselves in relation to the three themes. Therefore, I will look for how states' position themselves in relation to the three themes and then look for patterns within those themes. Further, I am aware that this is a subjective analysis and I am reading these statements with my own perspective, based on my world view and what I may consider relevant or not. Therefore, what I may consider valuable to the

analysis when reading the statements may someone else disagree with or draw other conclusions than me.

In the thematic analysis, I firstly started to familiarise myself with the data by re-reading the statements multiple times before starting to search for patterns. Secondly, I began with searching after answers and patterns to the first question in each statement to understand states' positions. I outlined some statements and coded data that I found interesting. Then I did the same process for each question. Thirdly, when I had gathered a big amount of data and statements, I started to search after patterns for group formations among the participating states. I created a document and a mind-map to write the themes that I found in the data. Fourthly, I reviewed the themes and re-read the statements once again. Fifthly, I put the sub-themes that I had found in the statements into the main three themes. Sixthly, once I had gathered all the data and defined it, I started to write the analysis.

4.2.2 The quantitative analyses

A quantitative analysis helps to explain what influences states' positions on CCM ratification and LAWS compliance with IHL. Therefore, this is the second step after having understood and now explaining how states' position themselves in relation to LAWS compliance with IHL. The first step in the quantitative analysis is to test whether the selected independent variables influence states' position on CCM ratification. I expect that states' positions on CCM ratification may give some knowledge about what influences states' positions on other weapons. After receiving the results, I will then test how the independent variables influence states' positions on LAWS compliance with IHL. Thus, the purpose of the quantitative analyses is to gain knowledge to explain why states position themselves in relation to CCM ratification and LAWS, and to generalise those findings based on the results. Further, the aim is to study whether the hypotheses are supported in the quantitative analyses. To what extent they are supported, we can generalise the results to some extent. However, we can only generalise to such an extent, since this is a first quantitative analysis on how states' position themselves in relation to LAWS compliance with IHL.

In the quantitative analysis, as outlined in section 4.1.2, I gathered data to operationalise what I am aiming to analyse. I am using the program STATA to analyse the data quantitatively. I could not gather states' positions on LAWS compliance with IHL from any database and I had to collect this data myself. From the qualitative analysis, I had good knowledge of the data and knew what group formations existed in the GGE meeting. Therefore, I first re-viewed the qualitative data multiple times to code the statements. I found three larger groups that had three positions

and levels of concern regarding LAWS compliance with IHL. Then, I created a coding scheme and added the states in the variable consisting of values from 0-2. Further, I could not find any database that included all or some of the variables that I was aiming to analyse. Therefore, I had to create my own database. Once I had gathered data of all independent and dependent variables, I used the database of Polity IV as the original database in the STATA program. Then I generated variables to add the data from each dependent and independent variable in the database. Once I had generated the variables, I added the value to each country in the database from the original databases. The databases I have collected data from, e.g. SIPRI, World Bank, are consistently used by scholars in quantitative analyses. Therefore, I expect that the variables hold strong reliability and I can trust the databases. Moreover, since I codified *LAWS compliance with IHL* based on the statements, the codification is subjective. It is subjective due to my own worldview and what my own image is of the selected states. Further, since I am the interpreter of the statements, then I will interpret these statements based on what I believe. Secondly, to what extent the variable captures the accurate states' positions on LAWS compliance with IHL is subjective and if someone were to carry out the same method and material, then another person may find other group formations than I did. Also, I have included the majority of the states who gave a statement (excluding 13 states), but if I would have included all states in the GGE then I may have codified the variable differently. Therefore, if someone would codify the same states' positions on LAWS compliance with IHL, then they may codify the states differently, with the same material or other material, and by including more or less units. However, I expect that the majority of the variables hold a high validity, but LAWS compliance with IHL can be codified in multiple ways depending on who you are and material.

After I have added values to each state, I will carry out two simple regression analyses to analyse the independent and dependent variables. Therefore, I will regress all independent variables with each dependent variable in two separate simple regression analyses. In each analysis, I will do a simple regression between each independent variable with both of the dependent variables. I will then set up each regression analysis in a table to display and explain the results. Firstly, I will regress CCM ratification with the independent variables. Once I have regressed CCM ratification and analysed the results, I will regress LAWS compliance with IHL and analyse the results from the second quantitative analysis.

4.3 Limitations and scope

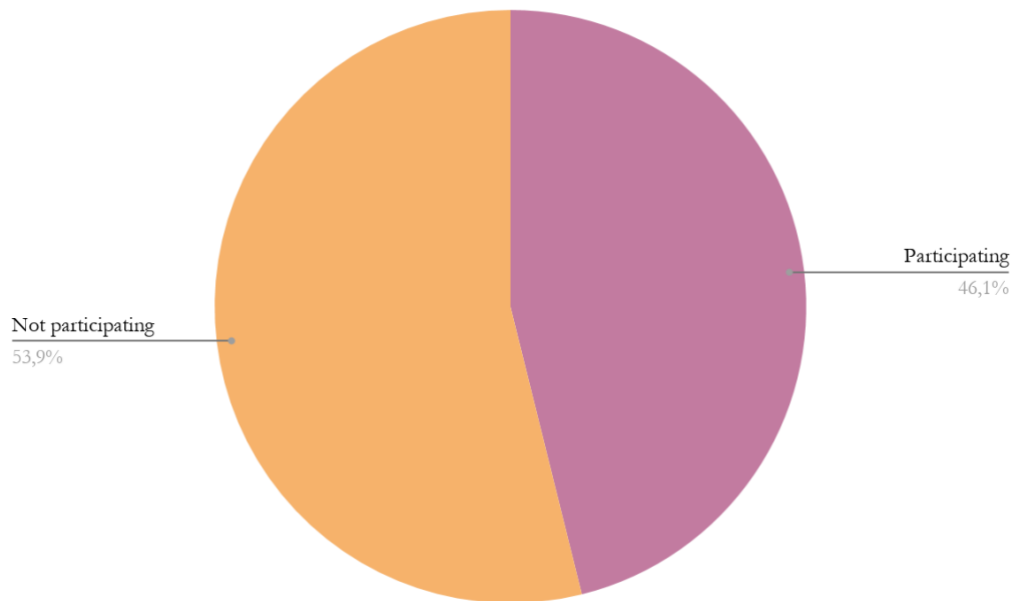
Firstly, some of the statements I transcribed were translated by an UN-translator. For example, if the speaker by the delegation of the Russian Federation spoke Russian and since I cannot speak Russian, I needed the statement to be translated to English. In the translation by the UN-translator, some words may be missed, excluded or translated incorrectly. This may bring some limitations in the language translation posing limitations to the statements for the qualitative and quantitative analysis. I collected all of the statements from Reaching Critical Will (Reaching Critical Will, 2020), through contact with the organisation PAX for Peace, United Nations Geneva Website (United Nations Geneva, 2020a) and through UN's Digital Records (Digital Records Portal, 2020). The collected statements from all of the sources, except UN's Digital Records, are statements that have been provided from the countries delegations and submitted to the organisations. Therefore, I am confident that the statements are accurate. Further, since all statements have been uploaded and can be collected on public websites, then the collection of the statements does not break any confidentiality.

Further, I will now explain the limitations in the data selection and operationalisation in the quantitative analyses. Most of the variables are covered from 2019 as the same year as the GGE meeting was held. However, the Polity IV score is collected from 2018, but I would expect the same score would most likely be valued in 2019. The variables included are from SIPRI, UN Geneva, Polity IV, IPU and World Bank which are all internationally accepted and used continuously by many scholars in quantitative analyses. Thus, I expect that the variables hold high reliability. These variables measure what I am aiming to measure and thus have high validity. The operationalisation of the variable *LAWS compliance with IHL* is aiming to capture states' position on LAWS compliance with IHL. The selected statements aimed to capture states' position were collected from agenda item 5a discussing mainly LAWS challenges to IHL. Thus, I argue their position is captured based on those statements. However, some of the statements were not collected from that agenda item because some states did not give a statement during the agenda item. As mentioned, I collected statements from other agenda items which still covers and discusses states' position on LAWS compliance with IHL. Thus, I am convinced that those states' positions on LAWS compliance with IHL is to a large extent covered in the data collection. However, not all states' have participated in the GGE meetings and it is therefore difficult to generalise these findings as I have a limited number of states' in the analyses.

Further, I will next summarise the collection of data of participating states' in the GGE meeting and states' ratification of the CCM, and a description of the variables in the database.

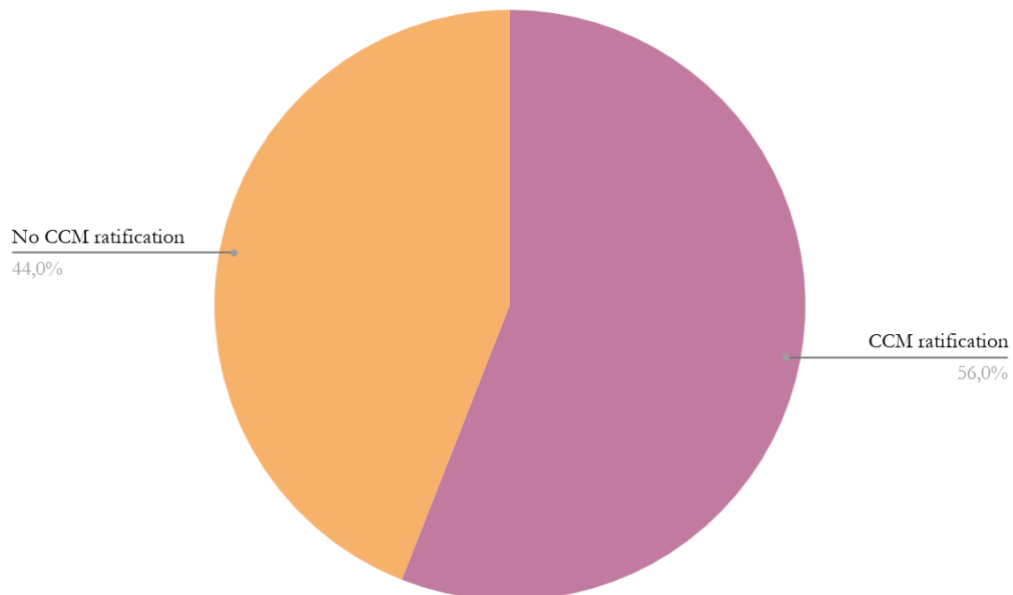
4.4 Summary of the collected qualitative and quantitative data

Figure 1: UN-member states participation in the GGE meeting of 2019



Of the total 193 UN member states, 89 countries participated in the GGE meeting of 2019¹⁴. Almost half of the member states participated in the GGE meeting to discuss the issue of LAWS.

Figure 2: UN-member states ratification of the CCM



108 states of the 193 member states have ratified the CCM, thus more than half of the UN member states have ratified the CCM (United Nations Geneva, 2020b).

¹⁴ See full list of the participants in appendix 1.

Figure 3: World regions of the selected countries in the database

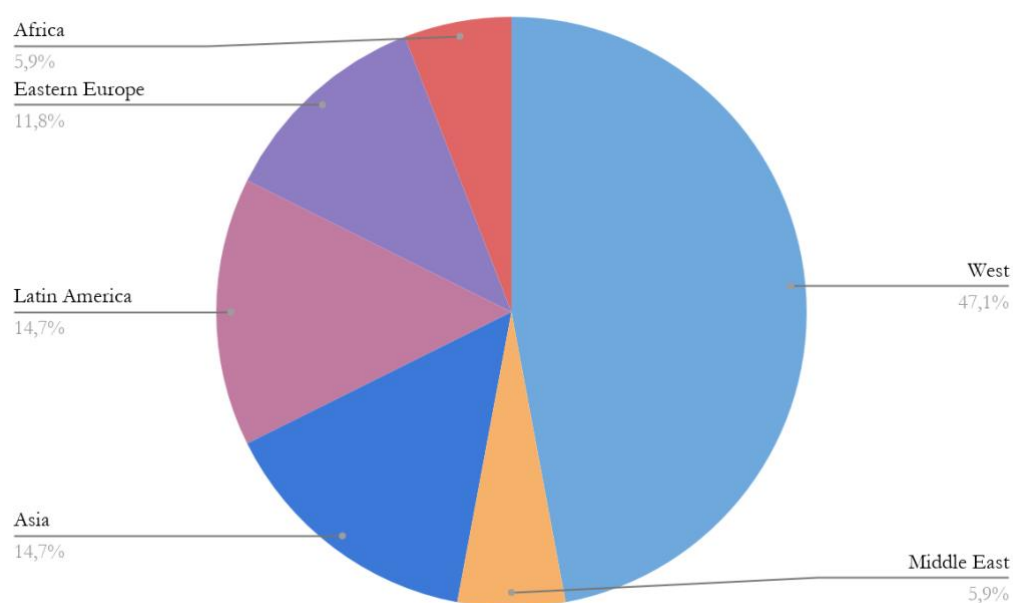


Table 1: Description of the variables in the database

Variables	Obs	Mean	Std. Dev.	Min	Max
LAWS compliance with IHL	34	.9411765	.9191952	0	2
CCM ratification	34	.6176471	.4932702	0	1
Polity	34	8.117647	3.319042	-7	10
GDP	34	2876.95	5358.151	51.5	23460.2
Military Expenditure	34	2.002941	1.371901	0	6
Female Representation in National Parliament	34	29.90618	10.69548	10.11	48.2
Proportion of Women in Ministerial Level Positions	34	28.42941	14.28586	0	54.5

5. Analysis of statements

In this section, I will pose the three analytical questions to the statements to understand states' positions on LAWS compliance with IHL. The first subsection answers the first question, the second subsection answers the second question and the third subsection answers the third question. In this thematic analysis, I explored the patterns on how states' position themselves differently in these three themes and how they understand LAWS compliance with IHL.

5.1 *Jus in Bello* and LAWS

Most states¹⁵ do not mention or discuss LAWS compliance with the IHL principles.¹⁶ They do not consider for example, how the principle of distinction to what extent LAWS fulfils compliance with that principle. However, the United States (US) argue that autonomous functions and weapons systems do not inherently pose a problem with respect to the application of IHL and carrying out attacks in armed conflict.¹⁷ Further, both the US and Russia argue that autonomy facilitates greater compliance with IHL, including mitigating risks to civilians.¹⁸ Similarly, the UK discusses the benefits of employing LAWS “in improving situational awareness and offering lower-yield and higher-precision weaponeering options for operations in an urban or access-denied environment”.¹⁹

...autonomy can at times facilitate greater compliance with IHL, including the potential to mitigate risks to civilians (US, 5a).

...a high degree of automation on the contrary could facilitate compliance with IHL and minimize the negative consequences of the employment of such weapons, which are linked to human factors and human failings (Russia, 5a).

¹⁵ Those states that have not articulated a need to formulate an additional protocol on LAWS. Those states that have not discussed compliance with IHL but argue for a total ban on LAWS – which inherently states that there is no compliance with IHL. These states are Algeria 5c, Iraq, South Africa 5e.

¹⁶ Australia, 5a; India, 5a; UK, 5a; Poland, 5a; Republic of Korea, 5a; Japan, 5a; Canada, 5a; Israel, 5c; France, 5a, Estonia, 5b; Finland, 5a; Netherlands, 5a; Germany, 5b.

¹⁷ US, 5a.

¹⁸ US, 5a; Russia, 5a.

¹⁹ UK, 5a.

Another group of states considers that the compliance with IHL depends mostly upon the operational environment, or as Austria explains: “IHL compliance is highly context-dependent, which is particularly sensitive when it comes to emerging technologies with autonomy in critical functions”.²⁰ If these weapon systems were deployed in the high seas or space, the presence of civilians is limited or close to none.²¹ Sweden explains that if a military target would be a warship, then the principle of distinction and proportionality would be respected due to limited civilian presence.²² Sweden is not convinced that LAWS employed in urban areas would be able to distinguish between a combatant and a civilian. Since those environments often involve both combatants and non-combatants, “explosions, smoke and other factors that will make it even more difficult for sensors to see the difference”.²³ Further, when considering the principle of distinction, the fact that a combatant can be incapacitated or surrender at a moment’s notice is problematic.²⁴ Thus, autonomous weapon systems would not be in position to comply with the principle of distinction in complex environments involving both combatants and non-combatants.²⁵

...those weapons would not be in a position to, for instance, effectively distinguish between civilians and combatants in complex operating environment (e.g. urban warfare where terrorists, with no distinctive signs, would hide amongst the civilian population) (Belgium, 5a).

Further, when discussing the principle of distinction some states are sceptical on data accuracy, bias and availability of data in conflict situations.²⁶ Further, a group of states are unconvinced that the principle of proportionality would be in compliance²⁷. Austria considers when applying the principle of proportionality that it “can be a particularly challenging or impossible task for example in populated areas where the situation changes rapidly. Under these circumstances it would be impossible to weigh anticipated military advantage against the expected collateral harm well in advance”.²⁸

...the assessment of proportionality between the intended military goal and risks posed to civilians in an operation cannot be ascribed to computational calculations (Brazil, 5a).

²⁰ Bulgaria, 5a; Brazil, 5a; Austria, 5a; Sweden, 5a.

²¹ Bulgaria, 5a; Sweden, 5a.

²² Sweden, 5a.

²³ Sweden, 5a.

²⁴ Brazil, 5a; Austria, 5a; China, 5a; Chile, 5a; Mexico, 5a.

²⁵ Belgium, 5a; Sweden, 5a.

²⁶ Austria, 5a; Chile, 5a.

²⁷ China, 5a; Mexico, 5a; Brazil, 5a; Austria, 5a

²⁸ Austria, 5a

...fully autonomous weapons systems cannot be programmed to comply with IHL; in particular its cardinal rules of distinction, proportionality and precaution (Pakistan, 5a).

Ecuador states that IHL not only requires human beings' involvement, but also the "exclusively human attributes, for example morality and compassion" and that "it is impossible to fully reflect us [human beings] in the software use for LAWS".²⁹ A group of states considers that the principle of precaution is also challenged by LAWS, as there needs to be a possibility for humans to override the systems.³⁰

Many states have raised concern in transferring the assessments of IHL principles to machines. Portugal states that "the determination and action according to the principles of proportionality, necessity or precaution cannot and should not be transferred to machines".³¹ Greece argues "it is doubtful whether it is possible to insert (programme) beforehand into autonomous weapon systems the compliance with sophisticated legal/evaluative concepts, such as the principles of (target) discrimination and proportionality, particularly considering the constantly diversifying environment of a battlefield".³² China argues similarly that it is difficult to translate the principles of proportionality and distinction into algorithms, in assessing impact on civilians and disproportional abuse of force which are subjective and requires judgement only required to mankind.³³

5.2 Accountability, Responsibility and Meaningful Human Control

Some states do not state, demand or require that the decision to use force must be taken by a human operator and not a machine.³⁴ However, most of these states express that responsibility and accountability will always rely on the human being. Russia states that "accountability for the employment of the so-called LAWS lies fully on the human being".³⁵ Israel states that "human judgement will always be an integral part of any process regarding LAWS, and will be applied throughout their life-cycle" and that they "will always be in charge of any process to develop and

²⁹ Ecuador, 5a.

³⁰ Austria, 5a; Greece, 5a; Luxembourg, 5b.

³¹ Portugal, 5d

³² Greece, 5a.

³³ China, 5a.

³⁴ US, 5a; India, 5a; UK, 5a; Russia, 5a; Japan, 5a; Canada 5a; Israel, 5c.

³⁵ Russia, 5a.

acquire LAWS, including the various phases of the research, development, programming, testing, technical and legal review, and approval of such systems”.³⁶

...autonomous functions and weapons systems could also strengthen mechanisms for accountability over decisions to use force” due to the “automated creation of logs recording the operation and use of weapons systems (US, 5a).

Estonia and Finland continue that the level and nature of human control exercised over LAWS depends on the operational context.³⁷ Estonia illustrates that the level of control required “in urban warfare, where the risk of harming civilians is particularly acute, may well be different from the control required in submarine warfare, where risks to civilians are more limited”.³⁸ Similarly, Finland explains, “Human control is context specific; it varies throughout the weapons’ operating cycle” and depends “heavily on the nature of the weapon and circumstances of its use”.³⁹ Also, the Netherlands considers that “As long as LAWS remain under meaningful human control, there is no reason to assume that by definition these weapons fall into one of the categories of weapons that are banned under international law”.⁴⁰

The kind and degree of human control that must be exercised at various points leading up to and including the use of a weapon depend heavily on the nature of the weapon and circumstances of its use (Finland, 5a).

However, some states do not explicitly mention issues of accountability or assure that a human will always be held accountable.⁴¹ Israel states that “the human who makes the decision to use the weapon is responsible that the use would comply with the Laws of Armed Conflict”.⁴² Other states do not mention explicitly that the deployment of LAWS may complicate accountability and responsibility, however states that machines can never be held accountable, as IHL are directed to humans not machines.⁴³ France states that “Human responsibility in the development, deployment and use of such weapons must be retained”.⁴⁴ The UK assures that “accountability can never be delegated to a machine or system... increasing autonomy in weapons or weapons systems does

³⁶ Israel, 5c.

³⁷ Estonia, 5b; Finland 5a.

³⁸ Estonia, 5b.

³⁹ Finland, 5b.

⁴⁰ Netherlands, 5a

⁴¹ Poland, 5a; Republic of Korea, 5a; Japan, 5a; Iraq, 5a; Canada, 5a; Estonia, 5b.

⁴² Israel, 5c.

⁴³ Bulgaria, 5a; Ireland, 5a; Austria, 5a; China, 5a; Costa Rica, 5a; South Africa, 5e; Mexico, 5a; Finland, 5a; Switzerland, 5c & 5e; Belgium, 5a; Netherlands, 5a, Germany, 5b; Sweden, 5a; Portugal, 5d.

⁴⁴ France, 5a.

not therefore present the risk of an accountability gap”.⁴⁵ Finland states that “Humans must now and in the future exert control over decisions of life and death”.⁴⁶

LAWS also create an accountability vacuum and might provide impunity to the user due to the inability to attribute responsibility for the harm that they would cause, especially in cases of anonymous and clandestine operations, as well as targeted killings (Pakistan, 5a).

Other states are seriously concerned that there may be a dilution or an accountability gap if the commander or operator does not remain accountable.⁴⁷

5.3 The Path to Ensure LAWS Compliance with IHL

Most states consider the importance to conduct legal reviews of new weapons under Article 36 of AP I to ensure LAWS compliance with IHL.⁴⁸ However, some states add that if any modification would be added to machine learning, then the weapon system would demand to go through another legal review procedure.⁴⁹ Moreover, while some states raise some importance to conduct legal reviews of new weapons under Article 36, but are unconvinced that national reviews are enough to tackle the issue of compliance with IHL.⁵⁰ One of those states is Austria that express that there exist some limitations with Article 36. Firstly, they do not “give a clear legal standard, it merely assesses if – from a national perspective - a certain weapon development would be permitted under international law”.⁵¹ Secondly, since there exists some military secrecy and competitiveness, the results are usually not shared with the international community.⁵²

Further, this is also linked to the challenge of how states interpret existing norms. If there is no explicit international special norm, states would most likely differentiate in their assessment, if a weapons system is compatible with IL (Austria, 5a).

⁴⁵ UK, 5a.

⁴⁶ Finland, 5a.

⁴⁷ Brazil, 5a; Chile, 5a; Ecuador, 5a; Pakistan, 5a.

⁴⁸ Bulgaria, 5a; Brazil, 5a; Ireland, 5a; Australia, 5a; US⁴⁸, 5a; Greece, 5a ;United Kingdom, 5a; Russia, 5a; Republic of Korea, 5a; Japan, 5a; Chile, 5a; Canada, 5a; Israel, 5c; France, 5a; Finland, 5a; Netherlands, 5a; Germany, 5b; Sweden, 5a; Portugal, 5d.

⁴⁹ Bulgaria, 5a; Sweden, 5a.

⁵⁰ Brazil, 5a; Austria, 5a; Chile, 5a; Mexico, 5a; Belgium, 5a.

⁵¹ Austria, 5a.

⁵² Austria, 5a.

The Republic of Korea agrees “there is no internationally agreed and accepted standard for such reviews yet”.⁵³ Belgium argues that “the technology would be so advance and complex, that would require a high amount of knowledge and expertise, that some states may lack”.⁵⁴ The issues of competitiveness and military secrecy raised by the Netherlands is captured in the GGE meeting by some states. India did for example express that “the responsibility for development, production and deployment of LAWS should rest with the concerned state”.⁵⁵ Similarly, Russia expresses that “mechanisms to conduct assessments of this kind are based on each state’s discretion” and “there is no legal obligation to publish the results of such an assessment or to make any kind of information on this available at all”.⁵⁶

Some states raise the importance of the Martens Clause of relevance as a valuable guide of elaborating new laws.⁵⁷ However, Russia considers that “the Martens Clause can be exclusively used to assess human conduct at times of war including decisions taken by the person in programming or employing these weapons, but not the acts of the weapons themselves”.⁵⁸ Another proposed path by a large number of states in order to ensure LAWS compliance with IHL is an additional protocol on LAWS, also known as a legal ban on LAWS⁵⁹⁶⁰.

The elaboration of an international legally binding instrument be aimed at the prohibition of the design, development, acquisition, testing, deployment, transfer and use of lethal autonomous weapons systems is an appropriate step in order to ensure full respect of international law, especially international humanitarian law (Algeria, 5e).

Some states mention an additional protocol would then ensure MHC over all weapon systems.⁶¹ Mexico states that such a foundation should regulate restrictions on “the autonomy of such systems and critical functions of such weapons”.⁶² Switzerland is not unconvinced in “better understanding what such a legally binding document would entail”, however, argue “more work remains to be done before this approach can generate consensus”.⁶³ However, on the opposite

⁵³ Republic of Korea, 5a.

⁵⁴ Belgium, 5a.

⁵⁵ India, 5a.

⁵⁶ Russia, 5a.

⁵⁷ Brazil, 5a; US, 5a; Austria, 5a; Chile, 5a.

⁵⁸ Russia, 5a.

⁵⁹ Brazil, 5a; Austria, 5a; Algeria, 5e; Pakistan, 5a; Iraq, 5a; Chile, 5a; Costa Rica, 5a; South Africa, 5e; Mexico, 5a.

⁶⁰ Most states have not defined explicitly what this additional protocol would entitle or prohibit.

⁶¹ Brazil, 5a; Austria, 5a.

⁶² Mexico, 5a.

⁶³ Switzerland, 5e.

side when discussing a ban on LAWS, a group of states have explicitly mentioned that they are unconvinced a new instrument is required at this moment for regulating LAWS and that it could be counterproductive.⁶⁴ The UK states that benefits mentioned by deploying LAWS in the battlefield “could be adversely affected by a precipitous move toward a pre-emptive legal instrument”.⁶⁵

...a key pre-condition to start work on new treaty restrictions on particular kinds of weapons is the presence of clear proof that the consequences of their employment would be so destructive and grave that under no circumstances could they comply with the key IHL principles (Russia, 5a).

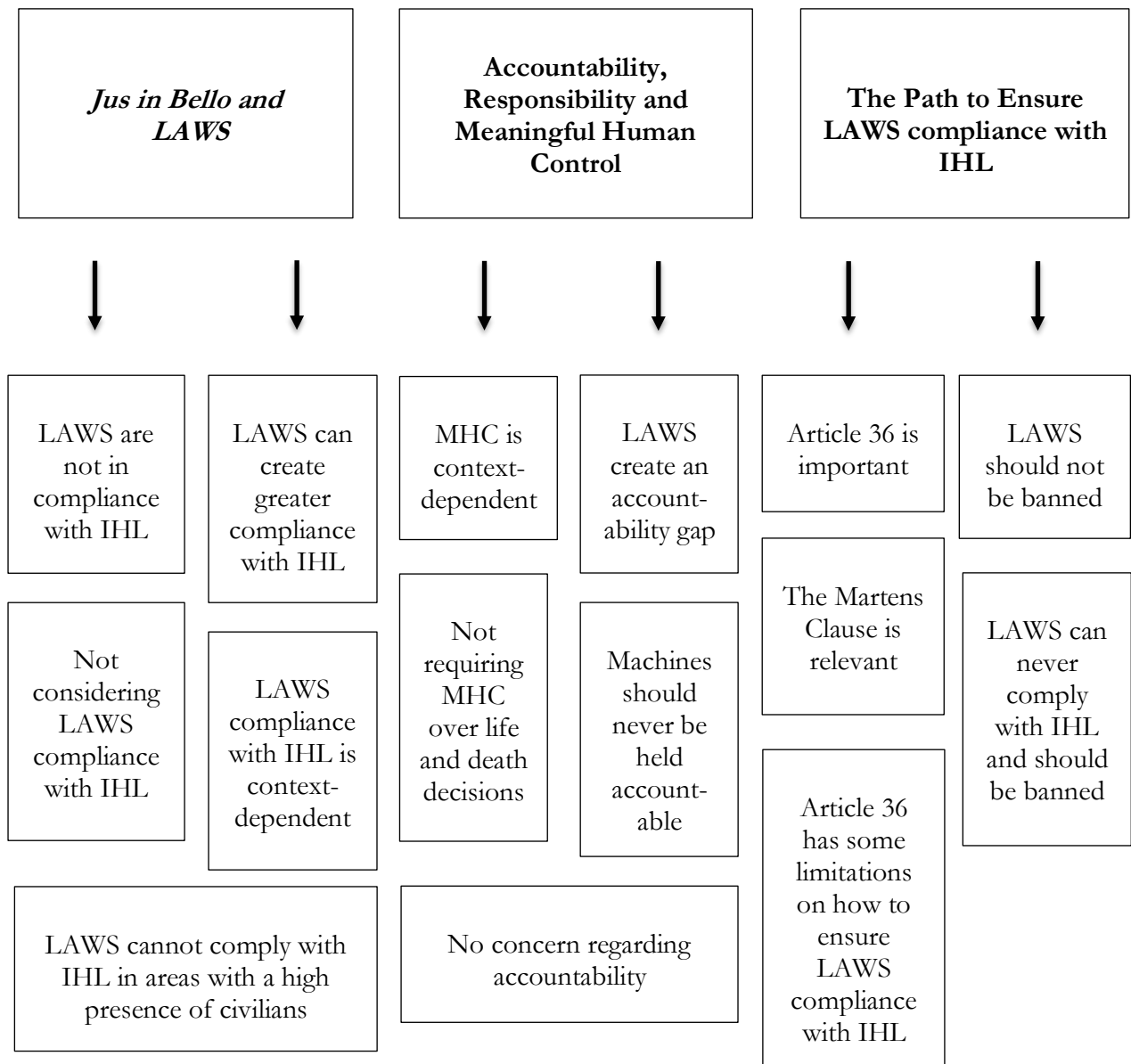
Another viewpoint from Russia on a legal ban on LAWS “could lead to legal uncertainty and such that could also cover weapons of a high degree of automation and also have negative impacts on scientific and technological progress”.⁶⁶

⁶⁴ Australia, 5a; UK, 5a; Russia, 5a; Israel, 5c.

⁶⁵ UK, 5a.

⁶⁶ Russia, 5a.

5.4 Conclusion



In the analysis of the three main themes of 1) *Jus in Bello* and LAWS, 2) Accountability, Responsibility and Meaningful Human Control and 3) The Path to Ensure LAWS compliance with IHL, I have found multiple subthemes representing states' positions on LAWS compliance with IHL. The states' positions on LAWS compliance with IHL is evidently heterogenous and not in convergence. The group formations are often divided into two groups with a smaller group in the middle holding a somewhat neutral stand expressing some concern on LAWS compliance with IHL. When analysing patterns to the first main theme *Jus in Bello and LAWS*, I found multiple subthemes consisting of smaller groups with various position approaches on LAWS compliance with IHL. Firstly, one of the subthemes represent that many states do not discuss to what extent

LAWS are in compliance with IHL. This is interesting and an answer in itself. I consider that those states are evidently not concerned about LAWS compliance with IHL. Another subtheme represents a rather small group considering that LAWS can create greater compliance with IHL principles. Another subtheme seems to represent a group considering that LAWS compliance with IHL is dependent on the operational environment. Another subtheme seems to represent a group of multiple states concern that LAWS would not comply with IHL if employed in areas with a high presence of civilians, for example in urban areas. It would be too difficult to distinguish (principle of distinction) between combatants and non-combatants in those circumstances. This one of the implications raised by JWT (Krishnan, 2009:4) that the principle of distinction is most challenged in conflicts. Further, within that subtheme many states' also raise concern in LAWS compliance with the principles of proportionality and precaution. It would be too challenging for LAWS to weigh the anticipated military advantage against collateral harm and to translate it into algorithms. Further, the principle of precaution is considered by some states to be breached as it requires a possibility for humans to override the system and end a military action.

When analysing the second main theme *Accountability, Responsibility and Meaningful Control*, I found more convergence in the subthemes of the states' position in comparison to *Jus in Bello and LAWS*. One of the subthemes seems to represent a majority of states considering that responsibility and accountability can never be transferred to a machine. Further, another subtheme concerns some states that do not mention that LAWS may complicate neither accountability nor responsibility. Further, in understanding states' positions on the level of meaningful human control, another subtheme seems to represent a small group of states that do not explicitly state or demand that the decision of use of force must be taken by a human operator. However, most states do require that the decision to take life and deaths decisions must be taken by a human, not a machine. Another subtheme represents a group of states that considers that the appropriate level of human control depends on the operational context. They consider that a higher level of human control is vital in urban warfare due to a higher presence of civilians. However, they consider that the level of human control may not be required as high in submarine warfare due to a limited presence of civilians. Another subtheme represents a group of states that are seriously concerned regarding a potential dilution of responsibility and an accountability vacuum. This is similar to Sparrow's (2007) discussion of a potential vacuum that no one would be justly accountable in violations of IHL. However, the states do not explicitly mention whether who should be held responsible or accountable for the actions, or discuss how or why the designer, robot or commander should or should not be held accountable.

Moreover, the subthemes of states' positions concerning the third main theme on *The Path to Ensure LAWS Compliance with IHL* is similar to states' positions on *Jus in Bello and LAWS*. One of the subthemes represents states' that express the importance of conducting legal reviews of new weapons under Article 36 of AP I. However, another subtheme regarding Article 36 represents a small group of states' that raise some limitations on conducting legal reviews of new weapons under Article 36. These limitations involve a lack of an international agreed standard for new weapon legal reviews, military secrecy and competitiveness among states. Some states confirm the raised concern of Article 36 claiming that LAWS development, production and deployment should rest with the concerned state and that conducting legal reviews of new weapons should be at each state's discretion. Another subtheme represents a group of states' considering that the Martens Clause to be important to elaborate new laws. Then again, some states disagree with the appropriate application of the Martens Clause on LAWS compliance with IHL. Lastly, another subtheme represents a group of states' that are seriously concerned regarding LAWS compliance with IHL and urge for an internationally legally binding instrument. What should be included in the additional protocol is not mentioned. When discussing a ban on LAWS, another subtheme seems to represent some states that are worried of the potential hazards of introducing a legal ban, due to its potential counterproductivity and lack of evidence why LAWS should be banned.

To summarise, the GGE is far from in agreement and it is evident that this is a sensitive question for many states. Further, the Netherlands expressing that the "challenge of how states interpret existing norms" sums up the discussions. It is obvious that many states understand and apply IHL in different ways. Some states consider that LAWS can create greater compliance with IHL, and another group of states considers that LAWS do not at any point comply with IHL and should effectively be banned.

I have identified the main and subthemes to understand states' positions on LAWS compliance with IHL. With this knowledge, we can now move forward to generalise these findings in two quantitative analyses to explain states' positions on CCM ratification and LAWS compliance with IHL.

6. Quantitative results

From the thematic analysis, we gain knowledge of how states position themselves in LAWS compliance with IHL and that the positions are widely divided in the three themes. In this section, I will quantitatively analyse to explain what influences (1) states' ratification of the CCM, and (2) states' positions on LAWS compliance with IHL. I will first study states CCM ratification and whether the independent variables can be explanations to why states understand IHL compliance. Secondly, once we have gained knowledge whether the independent variables can be explanations for why states' position themselves on LAWS compliance with IHL, I will quantitatively study the relation between the same independent variables and LAWS compliance with IHL.

Table 2: Regression analysis of CCM ratification

	1)	2)	3)	4)	5)
Polity	0.0592* (0.0241)				
GDP		-0.0000325* (0.0000152)			
Military Expenditure			-0.214*** (0.0511)		
Women's Representation in National Parliament				0.0220** (0.00716)	
Women's Representation in Ministerial Level					0.0155** (0.00546)
Intercept	0.137 (0.211)	0.711*** (0.0916)	1.045*** (0.124)	-0.0412 (0.227)	0.177 (0.173)
N	34	34	34	34	34
R-squared	0.159	0.124	0.353	0.228	0.201
Adjusted R-sq	0.133	0.097	0.332	0.204	0.176
Standard errors in parentheses					
* p<0.05, ** p<0.01, *** p<0.001					
<i>Note: Polity captures level of democracy and GDP is abbreviated from Gross Development Product.</i>					

This is the results from regressing the dependent variable CCM ratification with the five independent variables: polity, GDP, military expenditure, women's representation in the national parliament and women's representation in the ministerial level. All of the results have reached the conventional levels of significance. I expected that democratic states would more likely yield a higher ratification rate than non-democratic states and the result supports the hypothesis. The result is both positive and significant. I then expected that economically strong states are less likely to ratify the CCM, which the result supports as it is negative and significant. Further, I hypothesised that militarily strong states are less likely to ratify the CCM. The result is negative and reached the highest level of significance, thus confirming the hypothesis. I then hypothesised that states with a higher women's representation in the national parliament would yield a higher ratification rate of the CCM. The result is both positive and significant, thus confirming the hypothesis. Consistently, I also expected that states with a higher representation of women in the ministerial levels are more likely to ratify the CCM. The hypothesis is confirmed as the result is positive and significant. Thus, all of the hypotheses have been confirmed with quantitative significance. These results demonstrate quantitative evidence that the independent variables are to some extent influences on why states ratify IHL-conventions. Based on these results, we can move forward to test the same independent variables to explain why states' position themselves in LAWS compliance with IHL.

Table 3: Regression analysis of LAWS compliance with IHL

	1)	2)	3)	4)	5)
Polity	-0.0736 (0.0472)				
GDP		-0.0000215 (0.0000301)			
Military Expenditure			-0.0514 (0.118)		
Women's Representation in National Parliament				0.0135 (0.0150)	
Women's Representation in Ministerial Level					-0.00488 (0.0113)
Intercept	1.539*** (0.413)	1.003*** (0.181)	1.044*** (0.285)	0.536 (0.476)	1.080** (0.360)
N	34	34	34	34	34
R-squared	0.071	0.016	0.006	0.055	0.006
Adjusted R-sq	0.042	-0.015	-0.025	0.026	-0.025
Standard errors in parentheses					
* p<0.05, ** p<0.01, *** p<0.001					
<i>Note: Polity captures level of democracy and GDP is abbreviated from Gross Development Product.</i>					

These are the results from regressing the dependent variable LAWS compliance with IHL capturing states' positions on LAWS compliance with IHL with the five independent variables: polity, GDP, military expenditure, women's representation in national parliament and women's representation in the ministerial level. None of the results have reached the conventional levels of significance. However, most of the results confirm the hypotheses and therefore are still interesting to understand. I expected that democratic states are less concerned regarding LAWS compliance with IHL and the results are negative. The result does then follow the expectations. Further, I hypothesised that military strong states are also less concerned regarding LAWS compliance with IHL and the results are negative supporting the hypothesis. I expected that states with a higher women's representation in the national parliament and in the ministerial level are more concerned

regarding LAWS compliance with IHL. The results are positive when regressing the variable measuring women's representation in the national parliament and thus confirm the hypothesis. However, when regressing women's representation in the ministerial level the result is negative and does not support the hypothesis. In summary, the results from regressing LAWS compliance with IHL have not reached the conventional levels of significance. However, most of the results support this study's hypotheses.

6.1 Conclusion

With one exception, the quantitative results from both the states' positions on ratification of the CCM and LAWS compliance with IHL supports the hypotheses. However, only the CCM ratification regression analysis reached the conventional levels of significance. This gave confidence and quantitative evidence that the independent variables are to some extent explanations to why states ratify or understand IHL compliance. I theoretically expected that militarily and economically strong states are likely to ratify the CCM and yield a higher score of LAWS compliance with IHL, which was quantitatively supported. Further, I expected that democratic states are concerned about LAWS compliance with IHL and more likely to ratify the CCM, which was also supported. The discrepancy between the quantitative results between the CCM and LAWS supports the theoretical framework that there exists a difference in these weapons' intrinsic value how democratic states consider conventional and non-conventional weapons. I theoretically expected that a higher presence of women in the ministerial level are more relevant since they form most decisions on foreign policy. However, it seems a higher presence of women in the ministerial levels results in a stronger appeal to LAWS. On the contrary, a higher presence of women in the parliament yields more concern of LAWS compliance with IHL, confirming the theoretical expectations. One explanation why there may be less concern regarding LAWS compliance with IHL is that democracies often hold a higher presence of women in the ministerial level in comparison to less democratic states. Since democracies are quantitatively confirmed to be less concerned regarding LAWS compliance with IHL, this may explain why. The results of a higher presence of women in the ministerial level and national parliaments in relation to CCM ratification was positive. Therefore, a higher presence of women in political offices yields a stronger incentive to ratify the CCM.

As suggested by Guzman (2002) and in line with the theoretical framework, I expected when measuring CCM ratification it could produce a stronger association in comparison to LAWS. I argue this, because there exists an international legal framework against cluster munitions and

therefore to some extent a norm against cluster munitions in the international system. Therefore, I expected that the results could be somewhat stronger in comparison to LAWS. To further understand why there exists a discrepancy between the results of quantitative significance, we have to remember the differences between cluster munitions and LAWS. Firstly, LAWS do not exist today, and cluster munitions have been employed in numerous armed conflicts affecting humanitarian consequences in almost every area of the world by the indiscriminate weapon. The CCM was established in 2008, after decades of fighting for a ban treaty on cluster munitions. Therefore, there exists a stronger norm in the international system against the use of cluster munitions than LAWS. Further, most states have most likely positioned themselves for or against the use of cluster munitions. I expect that most states today have not positioned themselves in relation to LAWS, for example because less than half of the UN member states participate in the GGE meetings. This can be explained by some factors: firstly, we do not have an international accepted definition on LAWS. Secondly, LAWS do not exist, and we do not today know to what extent LAWS will be 'fully autonomous'. Thirdly, the discussions in the GGE concerning LAWS are at an early stage. These are some of the factors that may potentially explain why CCM ratification reaches levels of quantitative significance and not LAWS. Nonetheless, the results from the CCM ratification indicates that the hypotheses explain what influences states' to ratify IHL-conventions.

7. Discussion

In this thesis, I have conducted a mixed-methods analysis with two research approaches: a qualitative and a quantitative. By employing two different, but complementary approaches, we have gained knowledge to understand and explain how states position themselves on LAWS compliance with IHL. In the thematic analysis, I posed three analytical questions and gained knowledge in understanding how states hold their position on LAWS compliance with IHL. The states' positions on LAWS compliance with IHL are not in convergence and it will probably be difficult to find common ground on how to ensure LAWS compliance with IHL. When quantitatively examining why states ratify IHL-conventions by ratifying the CCM, the results yielded quantitative significance and supported all hypotheses. The results gave quantitative evidence that the independent variables can explain what influences states' positions on LAWS compliance with IHL. In examining quantitatively what influences states' positions on LAWS compliance with IHL, most of the hypotheses were confirmed, but not with significance.

We do not know how LAWS will be designed. What level of autonomy will LAWS have? In what sense will a human be included in the life cycle? What kind of decisions will LAWS make? How will LAWS be programmed? Will LAWS have self-learning capacities? Will LAWS be anti-material or anti-personnel weapon systems? In what operational context will LAWS be employed in? What kind of armoury will LAWS hold? These are important questions and could soon be answered in the rapid development and production of LAWS. It is worrying and alarming that these states are not in convergence on LAWS compliance with IHL. The participating states in the GGE have various interests in the development of LAWS. Some states have no interest in holding LAWS and urge LAWS to be banned due to legal, ethical and moral implications. Whereas some states participating in these discussions are developing these weapons and have an interest in employing these weapons. Most of these states, as resulted (but not significantly) in the quantitative analysis, are mostly democracies, economically and militarily strong states. Those states who have the capability and capacity will develop and produce LAWS, because they *can*.

Yes, by employing LAWS – it could probably save more lives. But whose lives would be saved and possibly be put at risk? The expected saved lives are the ones from the military power which have employed LAWS and removed their soldiers from the battlefield. However, the other armies' combatants and non-combatants could be at a higher risk of being killed due to relying on algorithms to e.g. distinguish combatants from non-combatants. This gives attention to another important discussion: whose lives are considered valuable in wars? Are the lives considered valuable and “grievable” in those conflicts LAWS could be employed? Would LAWS be employed,

for example in Belgium or France? To examine how lives are valued differently in wars, Butler (2009:38) considers that:

We might think of war as dividing populations into those who are grievable and those who are not. An un-grievable life is one that cannot be mourned because it has never lived, that is, it has never counted as a life at all. We can see the division of the globe into grievable and un-grievable lives from the perspective of those who wage war in order to defend the lives of certain communities, and to defend them against the lives of others—even if it means taking those latter lives (Butler, 2009:38).

To bear in mind how we perceive the value of human lives is vital to take into consideration when discussing the humanitarian and ethical implications in conflicts. We have to consider the ethical and humanitarian impacts of employing LAWS in the battlefield considering whose lives are put at a higher risk. There is a potential risk-transferring aversion that we have already witnessed in the deployment of UAVs, from combatants to non-combatants. Another ethical dilemma is that some states will have the technological, military and economic capabilities to develop or buy LAWS, as some states will not. Wars have never been known to be democratic or equal, nor is this a realistic aspiration. However, by increasing asymmetrical capabilities in wars and introducing LAWS to the battlefield, the wars as we know it, we could risk an increase of anonymous attacks with targeted killings and regional and international instability. It is evident that the development, use and deployment of LAWS would benefit certain states, but potentially put many human lives at risk.

What if these weapons would pose serious threats to non-combatants and not comply with IHL? Then if these states would still continue to develop and employ LAWS, how would we control this? How would we punish and prevent them from developing and using LAWS? Then who would “*we*” be? Since most of the states that have an interest in developing LAWS are the most economically, militarily and thus politically strong states in the international community. To what extent we could punish these states is doubtful.

It is a complex and arising question to what extent LAWS will be in compliance with IHL. Most of the states in the GGE are in convergence that *fully* autonomous weapons systems are highly unlikely to reach compliance with IHL. This is promising. What is worrying is that some states are not rejecting the development of fully LAWS or ensuring MHC in the application of use of force. As many scholars have stated, this is no longer science fiction. LAWS are being developed and could be employed in the battlefield. It is of utmost importance that the participating states in

the GGE ensure compliance with IHL principles, but also the ethical and humanitarian considerations.

This essay has attempted to understand this broad and complex question by understanding and explaining states' position on LAWS compliance with IHL. I have answered the research questions 1) *How can we understand and explain states' positions on how lethal autonomous weapons systems are in compliance with international humanitarian law?* and 2) *How does this relate to what influences states' positions on conventional weapons?"* in a mixed-methods study combining qualitative and quantitative methods. Firstly, we have gained knowledge in understanding how states' position themselves in the relation between LAWS and IHL. Therefore, we know what disperses and unifies that states' in the GGE. Secondly, we know what influences states to ratify the CCM. Thirdly, we have more knowledge why some states are more or less concerned regarding LAWS compliance with IHL. The issue of LAWS compliance with IHL is entangling, but important. I recommend for future research to conduct quantitative research on why states comply with IHL by studying other IHL-conventions. Further, I recommend examining in qualitative methods how states that are developing or aiming to produce LAWS, to study how they will ensure LAWS compliance with IHL. This thesis has solely focused on IHL, but LAWS must also comply with other foundations of IL. Therefore, I recommend researching how states understand LAWS compliance with international humanitarian rights law. Since this thesis has not focused on how states in practice do comply with IHL in the battlefield or the obligations of IHL-conventions, I recommend more research on why states comply and what motivates states to comply with IHL. I propose that future research should continue to combine IR and IL. Most research on LAWS has been focused on the legal perspective, which is important, but I believe that the discussion on the ethical and humanitarian implications needs more attention as this has not been offered the equal attention.

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Treaties

Convention on Cluster Munitions of 30 May 2008

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 of 10 October 1980

Protocol Additional to the Geneva Convention of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), of 8 June 1977

Appendix 1: States participating in the GGE meeting of 2019

The selected GGE countries delivering a statement	The GGE countries delivering a statement	The participating countries in the GGE of 2019 (25-29 March and 20-21 August)
Algeria	Algeria	Algeria
Austria	Argentina	Argentina
Australia	Austria	Australia
Belgium	Australia	Austria
Brazil	Belgium	Bangladesh
Bulgaria	Brazil	Belarus
Canada	Bulgaria	Belgium
Chile	Canada	Brazil
China	Chile	Bulgaria
Costa Rica	China	Canada
Ecuador	Costa Rica	Chile
Estonia	Cuba	China
Finland	Denmark	Colombia
France	Ecuador	Costa Rica
Germany	Egypt	Côte d'Ivoire
Greece	Estonia	Croatia
India	Finland	Cuba
Iraq	France	Czech Republic
Ireland	Germany	Denmark
Israel	Greece	Djibouti
Japan	Holy See	Dominican Republic
Luxembourg	India	Ecuador
Mexico	Iraq	Egypt
Netherlands	Ireland	El Salvador
Pakistan	Israel	Estonia
Poland	Italy	Finland

Portugal	Japan	France
Republic of Korea	Latvia	Germany
Russian Federation	Luxembourg	Greece
South Africa	Mexico	Guatemala
Sweden	Netherlands	Haiti
Switzerland	New Zealand	Holy See
United Kingdom of Great Britain and Northern Ireland	Norway	Honduras
United States of America	Pakistan	Hungary
	Panama	India
	Peru	Iran
	Poland	Iraq
	Portugal	Ireland
	Republic of Korea	Israel
	Russian Federation	Italy
	South Africa	Jamaica
	Spain	Japan
	Sweden	Jordan
	Switzerland	Kazakhstan
	United Kingdom of Great Britain and Northern Ireland	Kuwait
	United States of America	Lao People's Democratic Republic
	Venezuela	Latvia
		Lebanon
		Lithuania
		Luxembourg
		Mexico
		Mongolia
		Montenegro
		Morocco

		Mozambique
		Myanmar
		Netherlands
		New Zealand
		Nicaragua
		North Macedonia
		Norway
		Pakistan
		Panama
		Peru
		Philippines
		Poland
		Portugal
		Qatar
		Republic of Korea
		Romania
		Russian Federation
		Saudi Arabia
		Serbia
		Slovakia
		Slovenia
		South Africa
		Spain
		Sri Lanka
		State of Palestine
		Sudan
		Sweden
		Switzerland
		Turkey
		Uganda
		United Arab Emirates

		United Kingdom of Great Britain and Northern Ireland
		United States of America
		Uruguay
		Venezuela

Appendix 2: Coding of the dependent variables

Country	LAWS compliance with IHL	Ratification of the CCM
Algeria	2	0
Australia	0	1
Austria	2	1
Belgium	1	1
Brazil	2	0
Bulgaria	1	1
Canada	0	1
Chile	2	1
China	2	0
Costa Rica	2	1
Ecuador	2	1
Estonia	0	0
Finland	0	0
France	0	1
Germany	0	1
Greece	2	0
India	0	0
Iraq	2	1
Ireland	1	1
Israel	0	0
Japan	0	1
Luxembourg	2	1
Mexico	2	1

Netherlands	0	1
Pakistan	2	0
Poland	0	0
Portugal	1	1
Republic of Korea	0	0
Russian Federation	0	0
South Africa	2	1
Sweden	1	1
Switzerland	1	1
The United Kingdom	0	1
The United States	0	0