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New Technologies of Warfare: Emergence and Regulation

The emergence of new weapons has always shaped the conduct of warfare and repeatedly given one party the edge over an adversary, most often in rather asymmetrical and limited campaigns. An example from the nineteenth century is the Battle of Dybbøl in 1864, the decisive battle of the Second Schleswig War between Denmark and Prussia. The Prussian army was equipped with relatively novel Dreyse needle-guns, breech-loading rifles that could be loaded in a prone position, while the Danish soldiers were still using muzzle-loaders that required the shooter to stand up. The Dreyse gun was also capable of far more rapid fire than a muzzle-loader. The advantage of the Deyse rifle also contributed to the Prussian victory in the Austro-Prussian war of 1866, resulting in the hegemony of Prussia in the German-speaking area. While introducing a new rifle model seems a rather small step in the context of military innovation, particularly from a twenty-first century perspective, the political implications of the wars mentioned above were far-reaching, as they transformed the political landscape of alliances and borders, with new states emerging and others vanishing.

The political consequences of weapons that create or increase asymmetry in warfare and the use of force can be far reaching. In this regard, this book is interested in studying not only how adding autonomous features to the critical functions of weapons systems influences use-of-force practices but also how these come with an understanding of what 'appropriate' use of force is, thereby leading to novel ways of warfare becoming considered legitimate. While the introduction of the Dreyse rifle gave Prussian troops a technical, strategic advantage, it did not trigger novel questions about whether the use of this new weapon was legal or legitimate. Weapons innovations throughout the twentieth century, however, were far more controversial and had a very different impact. This chapter provides a historical account of how new technologies of warfare emerged and how practices of using such weapons systems have influenced perspectives on the 'appropriate' use of force. The chapter will also outline how and whether new technologies of warfare were regulated to provide an understanding of the use, regulation, and impact of weapons systems, which can give us important insights into the powerful role of new weapons systems in shaping norms, as standards of appropriateness, beyond legal control and regulation.

We start with a historical overview of selected weapons systems introduced in the past, focusing on systems that were of particular significance or could be defined as 'game changers' when it comes to the character of warfare and consequently wider implications for norm emergence. This chapter chiefly aims to discuss whether and how these weapons systems were regulated, how international legal norms were established, and how use-of-force practices were related to these norms – potentially creating standards of appropriateness that surpassed the limits of legal prohibition. We consider four weapons systems that played an important part in the emergence of novel, regulative norms in the twentieth century: submarines, chemical weapons, nuclear weapons, and blinding lasers. The individual sections in this chapter discuss the development of these weapons systems, whether and how they were used in practice, and how the international community reacted to their emergence. In this way, this chapter addresses cases of *ex ante* and *ex post* regulation: while submarines, nuclear and chemical weapons have been regulated or banned (comprehensively) only after their usage in warfare, blinding lasers were preventively banned before they had ever been used in combat operations.

This discussion will highlight the different effects that use-of-force practices centred on deploying particular types of weapons can have on the *emergence* of norms. As our review of norms research in chapter 4 will show, the discipline of IR has diversified its perspective on norms substantially in the last two decades. However, there is still very limited work on the genuine norm-*making* character of practices, particularly if we think of mundane and non-verbalised ways of doing things and how micro-practices can feed back into emerging norms.

Current research on norm emergence concentrates almost exclusively on fundamental norms with regulative and constitutive qualities (see, for example, Tannenwald 1999; Finnemore and Sikkink 1998a) as well as on studies how such norms emerge and are contested in deliberative processes (Rosert *et al*. 2013; Jefferson 2014). Yet, the comprehensive legal regulation and normative stigmatisation of chemical and nuclear weapons, for example, only emerged after these weapons had been used in the First and Second World Wars, respectively. This empirical fact stands in contrast to the analytical focus of existing studies on public deliberations *after* use. However, technological advances below the radar of international legal regulation might set *emerging* norms long before any debates have unfolded. The transnational debate on LAWS at the UN is a rather unusual instance of discussing an ambiguous weapons system in a formalised setting even while its definition remains contested. Our main argument – that norms emerge in the context of practices – opens up an entirely new perspective on studying norm emergence and contributes important viewpoints on AWS.

As we have seen in chapter 1, critics of a pre-emptive ban argue that the emerging nature of LAWS as a technology does not allow governmental representatives to deliver a concise and comprehensive definition of such systems, seen by some as a necessary requirement for negotiating binding legal commitments. In this regard, it is therefore insightful to discuss how and why particular novel weapons technologies – also considered as key technologies of significant strategic value in their time – were regulated and prohibited. The history of warfare provides many examples of weapons technologies with a profound impact on military success when they were first introduced and that, as a consequence, proliferated (see Roland 2016). Examples since ancient times include the chariot, mounted knights, the longbow and crossbow, gunpowder, cannons, tanks, missiles, and aircraft. Attempts to limit the use of specific weapons are not novel phenomena, and social norms, such as understandings of chivalry, were put forward to argue that killing from a distance, e.g. using a firearm, was unchivalrous conduct. However, only the twentieth century has seen the regulation and prohibition of certain weapons on a comprehensive, international scale, trying to create universally accepted, formalised rules and also introducing mechanisms to sanction violations.

This chapter does not aim to deliver a detailed, historical account of regulating different weapons systems, which would only replicate many extensive presentations in the relevant literature. Instead, we are interested in investigating the interplay of formal, deliberative norm-setting processes and evolving use-of-force practices in order to discuss why the legal response to a political-normative problem – the usage of weapons that conflict with basic humanitarian norms – may not be sufficient to prohibit the emergence of diverging standards of appropriateness.

The chapter will also highlight the differences between the four cases (submarines, chemical weapons, nuclear weapons, and blinding lasers) and AWS as characterising weapons of unparalleled complexity in IR. This complexity consists not only in the technological sophistication of what the weaponisation of AI means, but also in the multi-faceted questions what AWS are and what is acceptable in the context of their emergence. The novelty of AWS as an unprecedentedly broad weapons 'category' also necessitates developing different theoretical and practical approaches in IR, especially when it comes to answering our central research question: how can AWS change our understanding of what the appropriate use of force is?

SUBMARINE WARFARE AND THE QUEST OF LEGALITY AND LEGITIMACY

Although the era of submarine warfare had commenced during the American Civil War with the deployment, successful attack, and immediate loss of the *H.L. Hunley*, submarines only emerged as a weapons platform of military significance in the late nineteenth century. Considerations of a possible regulation or prohibition of submarine warfare entered the international agenda at the First Peace Conference in The Hague in 1899. Based on a Russian proposal to codify the abstention from building submarines if adopted unanimously, the issue was discussed but attempts to introduce a specific case of arms control failed due to a lack of consensus.

Although a growing number of states acquired submarines in the following years, neither the Second Hague Peace Conference in 1907 nor the London Declaration concerning the Laws of Naval War (London Declaration) addressed the issue of submarine warfare explicitly (Hays Parks 2000, 342–4). In 1914, the United Kingdom was leading the acquisition of submarines with 73 boats, followed by France (55 boats), the United States (38 boats), and Germany (35) (Delgado 2011, 123). Thus, although the development of submarines had quickly expanded, they were first used on a large scale during the First World War without either explicit, specific regulation or having been subjected to extensive practical experience in combat theatres.

Table 2.1 Articles 48, 49, 50 of the 1909 London Declaration.

Article 48. A neutral vessel, which has been captured, may not be destroyed by the captor; she must be taken into such port as is proper for the determination there of all questions concerning the validity of the capture.
Article 49. As an exception, a neutral vessel which has been captured by a belligerent warship, and which would be liable to condemnation, may be destroyed if the observance of Article 48 would involve danger to the safety of the warship or to the success of the operations in which she is engaged at the time.
Article 50. Before the vessel is destroyed all persons on board must be placed in safety, and all the ship's papers and other documents, which the parties interested consider relevant for the purpose of deciding on the validity of the capture must be taken on board the warship.

Source: ICRC (2018b).

Notwithstanding the absence of *specific* regulation, the legal norms established by the London Declaration were also applicable to submarines, as these were considered surface warships void of regulations that were more concrete. Therefore, submarines were expected to abide by certain rules, particularly when engaging non-combat or neutral vessels. The London Declaration was signed in 1909 by all major naval powers of the pre-war period, Austria-Hungary, France, Germany, Italy, Japan, the Netherlands, the Russian Empire, Spain, the United Kingdom, and the United States. However, none of these states ratified the treaty, which therefore never entered into force. The London Declaration is hence only important to show that a deliberative understanding of appropriateness in terms of submarine warfare emerged slowly. The most important rules were Articles 48–50 (ICRC 2018d; see table 2.1).

As Gilliland (1985, 977) argues, however, the London Declaration was imprecise in its legal stipulations, *inter alia* because it 'made no reference to armed or unarmed *belligerent* merchants operating in direct support of the war effort or on a purely commercial mission' (emphasis in original). With no clear legal regulation or even a prohibition of submarines, they played a more important military-strategic role during the First World War than previously anticipated. In particular, the political–legal implications of 'unrestricted submarine warfare' as practised by the German *Kaiserliche Marine* were immense. Not only were the extensive deployment of submarines and US casualties resulting from submarine warfare a major reason for the United States entering the war in 1917, but they also served to underline the importance of regulating and restricting submarine warfare as a task for the international community.

The historical case of unrestricted submarine warfare in the First World War is covered extensively in the literature (Delgado 2011, 129–41; Steffen 2004; McCaig 2013). At this point, it suffices to summarise briefly that the concept was introduced by Germany in 1915 when it declared the area around the British Isles a war zone in which merchant ships from neutral countries would also be attacked. The sinking of the British ocean liner *Lusitania* in 1915 – causing primarily British, Canadian, and US causalities – sparked major public outrage among the Western Allied Powers. This also led Germany to intermittently interrupt unrestricted submarine warfare, chiefly out of concern that this practice would draw the United States into the war. However, Germany resumed the practice in 1917, when its economic and military position had further weakened (not least due to the British naval blockade of Germany). Despite the highly controversial character of unrestricted submarine warfare, testified, for example, by the portrayal of the *Lusitania* sinking as a barbaric act,[1] the increasing lack of military and civilian supplies on the German side combined with the opinion that the United Kingdom could be decisively beaten contributed to the decision to broadenen the range of 'legitimate' targets. The initial success of submarines in sinking an extensive tonnage of Allied shipping seems to support the German change of strategy. However, as noted, unrestricted submarine warfare was a major contributing factor for drawing the United States into the First World War, an event eventually decisive for the Central Powers' defeat.

During the interwar period, a series of conferences were held in an attempt to regulate and delimit armament. While these efforts were, in particular, a political response to German use-of-force practices during the First World War, they also served budgetary purposes after the economic and financial downfall associated with the Great War. On these occasions, states considered the legal liability and prosecution of those responsible for unrestricted submarine warfare, as well as the status of merchant and armed merchant vessels (a common occurrence during the First World War), and belligerent and neutral vessels. However, as Hays Parks (2000, 345) comments, states did not consider two central questions concerning the 'appropriate' use of force: '(a) when does an enemy merchant ship forfeit its non-combatant status, and (b) what rules should apply to submarines in light of the changes brought about by (a)?'.

The first major international conference to specifically address submarine warfare was the Washington Naval Conference (International Conference on Naval Limitation, 1921–22).[2] While the United Kingdom went as far as proposing the complete abolition of submarines, and significant limitations on numbers of submarines were discussed, the participating states did not formalise an agreement. In the end, the major outcome of this conference, the Five-Power Naval Limitation Treaty, signed by France, the United Kingdom, Italy, Japan, and the United States on 6 February 1922, limited the practice of submarine warfare considerably (see table 1.2). But it failed to account for key characteristics of submarines as new technologies of naval warfare, such as the central role of the surprise and stealth attack by dived submarines, which could be seen as either a decisive tactical advantage or a fundamental mechanism of submarines' self-protection. In contrast, the treaty effectively ruled out the legality and normative legitimacy of targeting merchant vessels by submarines.

Table 2.2 outlines the explicit provisions of a treaty regulating the use of submarines, discussed and signed by all powers present following an initiative by Elihu Root, a member of the US delegation. While the treaty was signed by all five powers, it failed to be ratified due to France's inaction. Parts of the French public and political opposition understood the treaty as an unfair limitation of French naval power because it included a clause on capital-ship ratio that had been negotiated without French participation (Birn 1970, 301). However, it was still an important precursor to the regulations in the 1930 London Naval Treaty and contained detailed, albeit often imprecise, considerations of submarine warfare.

A partly more successful moment of establishing legal norms regulating submarine warfare before the Second World War came at the 1930 London Naval Conference, which summoned the five powers of the 1922 Treaty, but again excluded Germany. Largely, the 1930 London Treaty reproduced earlier attempts to codify rules for the use of submarines at the 1922 Washington Naval Conference, while it did not surpass the 1922 Treaty qualitatively. The 1930 London Treaty, signed on 22 April 1930 by only the United Kingdom, Japan, and the United States due to different views expressed by France and Italy, only had a limited legal duration, until 1936. The relevant article, Article 22, is shown in table 2.3.

Table 2.2 Treaty relating to the Use of Submarines and Noxious Gases in Warfare, Washington Naval Conference 1922.

Article 1. The Signatory Powers declare that among the rules adopted by civilised nations for the protection of the lives of neutrals and noncombatants at sea in time of war, the following are to be deemed an established part of international law:

(1) A merchant vessel must be ordered to submit to visit and search to determine its character before it can be seized. A merchant vessel must not be attacked unless it refuses to submit to visit and search after warning, or to proceed as directed after seizure. A merchant vessel must not be destroyed unless the crew and passengers have been first placed in safety.

(2) Belligerent submarines are not under any circumstances exempt from the universal rules above stated; and if a submarine cannot capture a merchant vessel in conformity with these rules the existing law of nations requires it to desist from attack and from seizure and to permit the merchant vessel to proceed unmolested.

Article 2. The Signatory Powers invite all other civilised Powers to express their assent to the foregoing statement of established law so that there may be a clear public understanding throughout the world of the standards of conduct by which the public opinion of the world is to pass judgment upon future belligerents.

Article 3. The Signatory Powers, desiring to ensure the enforcement of the humane rules of existing law declared by them with respect to attacks upon and the seizure and destruction of merchant ships, further declare that any person in the service of any Power who shall violate any of those rules, whether or not such person is under orders of a governmental superior, shall be deemed to have violated the laws of war and shall be liable to trial and punishment as if for an act of piracy and may be brought to trial before the civil or military authorities of any Power within the jurisdiction of which he may be found.

Article 4. The Signatory Powers recognize the practical impossibility of using submarines as commerce destroyers without violating, as they were violated in the recent war of 1914–1918, the requirements universally accepted by civilized nations for the protection of the lives of neutrals and noncombatants, and to the end that the prohibition of the use of submarines as commerce destroyers shall be universally accepted as a part of the law of nations, they now accept that prohibition as henceforth binding as between themselves and they invite all other nations to adhere thereto.

Source: Washington Treaty (2018).

The Second London Naval Conference, held in 1936, also failed to replace the 1930 London Naval Treaty with more comprehensive regulation of submarine warfare accepted by a larger group of states. By then, Japan had announced its withdrawal from the conference. At the same time, the 1936 conference at least adopted Article 22 of the London Treaty as 'procès-verbal', or process of amendment, to the rules set out in Part IV of the 1930 treaty. Article 22 of 1930 therefore did not expire.

Table 2.3 Limitation and Reduction of Naval Armament (London Naval Treaty), London Naval Conference 1930.

The following are accepted as established rules of International Law:
(1) In their action with regard to merchant ships, submarines must conform to the rules of International Law to which surface vessels are subject.
(2) In particular, except in the case of persistent refusal to stop on being duly summoned, or of active resistance to visit or search, a warship, whether surface vessel or submarine, may not sink or render incapable of navigation a merchant vessel without having first placed passengers, crew and ship's papers in a place of safety. For this purpose the ship's boats are not regarded as a place of safety unless the safety of the passengers and crew is assured, in the existing sea and weather conditions, by the proximity of land, or the presence of another vessel, which is in a position to take them on board.

Source: London Naval Treaty (1930, Article 22).

The 1936 Protocol, as a confirmation of the 1930 Article 22, was and remains the only explicit regulation of submarine warfare before the Second World War and thereafter. Although only France, the United Kingdom, and the United States signed the treaty in 1936, forty-eight states, including Germany, Japan, and the Soviet Union, accepted submarine rules before the outbreak of the Second World War due to their affirmation of the verbatim, which refers to an unabridged word-for-word account (Legro 1997, 40; Miller 1980, 267). The reasons for Germany's willingness to conclude agreements, particularly with the United Kingdom, in the interwar period can be explained as part of Hilter's strategy and general position towards the United Kingdom until the late 1930s: 'Hitler wanted to re-establish the *Deutsches Reich* in its "rightful" position of power. This was the non-negotiable core of Hitler's concept. For this he wanted Britain as an ally. The 1935 Anglo-German naval agreement falls in the "mit-England [with England]" phase and had a special function in Hitler's plans. It was the bridgehead for further steps with Britain on the common road towards the nation's rightful position in the world' (Hoerber 2009, 173).

In this regard, Germany initially followed the rules of the 1936 Protocol for political-strategic reasons in the hope of coming to an early peace agreement with the United Kingdom, but resorted once again to unrestricted submarine warfare starting in 1941. In the course of the war, Germany used submarine weapons extensively and relatively successfully, sinking 2,882 merchant vessels (Thiel 2016, 97).

That other countries also deployed submarines in similar ways was less in the political and public spotlight during both the war and post-war period. The United Kingdom initially held an ambivalent position with regard to the existing rules when it ordered the attack of all vessels within defined ('sink at sight') zones in the North Sea, the Mediterranean, and the Baltic Sea. While Japan's focus was on attacking navy ships for operational reasons, it also sunk merchant ships and clearly did not follow the submarine rules established in the interwar era treaties. The case of the United States is equally noteworthy: in response to the Japanese attack on Pearl Harbor on 7 December 1941, the United States issued the order to 'execute against Japan unrestricted air and submarine warfare', resulting in significant US assaults on different types of vessels identified as having a link to Japan all over the Pacific until 1945 (Holwitt 2013; Delgado 2011). Overall, the institutionalised interwar legal norms governing the use of submarines widely failed to have a guiding effect on the use of force during the Second World War.

The apparent erosion, or simply practical irrelevance, of the interwar submarine rules was also confirmed by how they were discussed at the Nuremberg trials: violations of these norms formed part of the initial prosecution against Grand Admiral Erich Raeder and Fleet Admiral Karl Dönitz, who were *inter alia* accused of having deliberately breached international rules of submarine warfare. In response, the defence argued that the British 'reprisal doctrine' as well as the practice of compromising the status of merchant vessels, the technological development of submarines and anti-submarines measures, and the US adoption of unrestricted submarine warfare in the Pacific theatre made following the interwar submarine rules impossible and uncommon (Burns 1971, 60–1). In its judgement, the Nuremberg tribunal ruled that '[i]n view of all the facts proved and in particular of an order of the British Admiralty announced on the 8th May, 1940, according to which all vessels should be sunk at sight in the Skagerrak, and the answers to interrogatories by Admiral Nimitz stating that unrestricted submarine warfare was carried on in the Pacific Ocean by the United States from the first day that nation entered the war, the sentence of Doenitz is not assessed on the ground of his breaches of the international law of submarine warfare' (Yale Law School 2008).

While the legal norms were therefore weakened or even discarded by the ruling at Nuremberg, their initial consideration at the trial, however, also showed that states considered the provisions of the 1930 and 1936 London Treaties regulating submarine warfare as the guiding legal principles and that these principles had established some, albeit limited, normative substance (see Panke and Petersohn 2012, 728).

Notably, however, US use-of-force practices associated with unrestricted submarine warfare, which resulted in the sinking of 1,113 merchant ships (Delgado 2011, 187) and included actions that might have qualified as war crimes, were not considered from a legal viewpoint in the aftermath of the Second World War. In particular, these actions refer to the attack on Japanese merchant and transport vessels and the killing of survivors (including British-Indian prisoners of war) by the crew of USS *Wahoo* under the command of Dudley 'Mush' Morton in 1943 (Holwitt 2013, 171–5; Sturma 2009).

At the same time, German U-boat commander Heinz-Wilhelm Eck was prosecuted in the 'Peleus Trial' at Nuremberg for sinking the Greek merchant vessel *Peleus* in 1944 and for ordering the shooting at rafts, putatively assuming that survivors had abandoned them, killing almost all of the survivors. The rationale for this action, as argued during the trial, was to eliminate all traces of the vessel to protect the U-boat in this specific situation, which is an argument of operational necessity. While the actions and the line of argument presented by Eck as a defendant were very similar to those of Morton, Eck and two other officers were sentenced for war crimes and executed in 1945. The Judge Advocate in the Eck case argued that '[i]t was a fundamental usage of war that the killing of unarmed enemies was forbidden as a result of the experience of civilised nations through many centuries. To fire so as to kill helpless survivors of a torpedoed ship was a grave breach of the law of nations. The right to punish persons who broke such rules of war had clearly been recognised for many years' (ICRC 2018a).

The judgement referred to basic laws of war regulating the protection of non-combatants and was not directly linked to the fact that a submarine was involved in the incident. This underlined the potential incompatibility of conducting submarine warfare in line with established legal norms for war at sea, particularly with regard to the requirement of evacuating a merchant vessel's crew and passengers. The actions ordered by Morton and Eck represented the extreme pole of the logic of unrestricted submarine warfare, which was in itself a violation of the 1930 and 1936 London Naval Treaties.

However, the post-Second World War trials did not consider how to reconcile formal law and practices in light of the failure to prohibit submarine warfare and they failed to define warships as the only legitimate and legal targets. While rules existed that were often disregarded during the First and Second World Wars, a clear, precise norm banning submarines, banning the sinking of merchant vessels under all circumstances, or considering the use of submarines a taboo did not emerge. Eventually, it seems that the practices of killing associated with submarines were not considered very different from how other weapons systems inflicted death and destruction. Vague moral norms and more specific legal norms on how to use force and protect human life that were still often violated existed independently of submarines. Importantly, submarines did not become a weapons system that affected public opinion and political debate in the ways that chemical or nuclear weapons did, and public perspectives on submarines seem to have become more permissive after the First World War.

In addition, after the Second World War, the strategic role of submarines and associated practices for the major powers gravitated towards ballistic-missile-carrying submarines. The extensive sinking of vessels by submarines has never occurred in subsequent armed conflicts – therefore, unresolved questions with regard to legal norms have been of little concern. In this regard, the case of submarines is not dissimilar to that of aerial warfare and the practice of indiscriminate carpet-bombing of civilian targets during the Second World War. Thus, somewhat counterintuitively, submarines were effectively legally and publicly normalised and ceased to be a controversial weapons system because technological advancement also meant that their strategic role changed to making them a mobile launcher platform of nuclear missiles, for example.

CHEMICAL WEAPONS (POISONOUS GAS)

Chemical weapons (or 'poisonous gas' in the terminology of the time when they were first introduced) were the subject of discussion at the turn of the twentieth century and reviewed at major conferences. This makes their case similar to that of submarines but also different in the sense that they were considered more explicitly. The industrial production of gas shells only started in the late nineteenth century, thereby enabling this novel weapon technology to become (militarily) significant. However, the use and stigmatisation of poison has a much longer cultural trajectory in society and warfare and a constitutive norm against its use has already been deeply anchored (see Jefferson 2014).

Table 2.4 Declaration (IV,2) concerning Asphyxiating Gases, 1899, The Hague Peace Conference.

The Contracting Powers agree to abstain from the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases. The present Declaration is only binding on the Contracting Powers in the case of a war between two or more of them. It shall cease to be binding from the time when, in a war between the Contracting Powers, one of the belligerents shall be joined by a non-Contracting Power.

Source: ICRC (2018a).

The first comprehensive consideration and regulation of chemical weapons took place during the 1899 Peace Conference at The Hague. Here, state representatives adopted three declarations, the second of which concerned poisonous gases (Declaration [IV,2] concerning Asphyxiating Gases, The Hague, 29 July 1899). The Declaration 'prohibiting the use of projectiles, the only object of which is the diffusion of asphyxiating or deleterious gases', was signed and ratified by most major powers present at this First Hague Conference, such as Austria and Hungary, France, Germany, Italy, Japan, Spain, and Russia. The United Kingdom only signed the declaration at the Second Hague Conference in 1907 and the United States abstained on both occasions (Pearce Higgins 1909, 493; ICRC 2018c).

While the phrasing of the 1899 The Hague Declaration on 'asphyxiating gases' was relatively clear in setting a new legal norm, it did not rule out the use of gas against non-signatories (see table 2.4). In fact, practices of warfare during the First World War violated this norm in fundamental ways, as is well known and widely discussed in the relevant literature (see Coleman 2005; Jefferson 2014; Vilches, Alburquerque, and Ramirez-Tagle 2016; Tucker 2007; Jones 2014). France, Germany, and the United Kingdom, all signatories to the 1899 Hague Declaration, were the nations to use the most chemical weapons during the First World War.

The traumatic experience of chemical warfare in the First World War – the term 'gas hysteria' (Jones 2014, 356) was used to describe the effect of chemical weapons on troops – had a strong influence on the public perception of poisonous gas as an inappropriate method of warfare and convinced many governments of the necessity to agree on regulating or prohibiting chemical weapons in an internationally binding treaty. As Jones shows, the casualties caused by 'gas' in the First World War were low, in terms of both overall numbers and the specific weapons categories. However, 'gas remained among the most feared weapons of the war and continued to exercise a powerful hold over the popular imagination such that anti-war campaigners focused on its use to mobilize support for their cause' (Jones 2014, 357).

Table 2.5 Washington Treaty 1922, Article 5.

The use in war of asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices, having been justly condemned by the general opinion of the civilized world and a prohibition of such having been declared in treaties to which a majority of the civilized Powers are parties.
The Signatory Powers, to the end that this prohibition shall be universally accepted as a part of international law binding alike the conscience and practice of nations, declare their assent to such prohibition, agree to be bound thereby between themselves and invite all other civilized nations to adhere thereto.

A first step towards regulating chemical weapons was the 1919 Treaty of Peace with Germany (Treaty of Versailles), which confirmed the norm against poisonous gas established at The Hague. Article 171 of the Treaty of Versailles declared that 'the use of asphyxiating, poisonous or other gases and analogous liquids, materials or devices being prohibited, their manufacture and importation are strictly forbidden in Germany' (US Library of Congress 2018, 119). Obviously, this norm was severely circumscribed, as the entire Treaty was explicitly directed at Germany. However, only three years later, the aforementioned 1922 Washington Naval Conference included more detailed stipulations in the Treaty on the Use of Submarines and Noxious Gases in Warfare (see table 2.5).

As discussed in the preceding section, the Washington Treaty of 1922 had a limited scope and was only signed by the five major powers at the time, excluding Germany (which had, however, signed the Treaty of Versailles, clearly prohibiting the development, acquisition and use of 'gas' weapons by Germany).

The final treaty to prohibit chemical weapons comprehensively before the Second World War was the 1925 Geneva Protocol to the Hague Conventions. More precisely, it was the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, which entered into force in 1928 (see table 2.6).[3]

Table 2.6 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, Geneva, 17 June 1925.

The undersigned Plenipotentiaries, in the name of their respective governments:
Whereas the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids, materials or devices, has been justly condemned by the general opinion of the civilised world; and
Whereas the prohibition of such use has been declared in Treaties to which the majority of Powers of the world are Parties; and
To the end that this prohibition shall be universally accepted as a part of International Law, binding alike the conscience and the practice of nations;
Declare:
That the High Contracting Parties, so far as they are not already Parties to Treaties prohibiting such use, accept this prohibition, agree to extend this prohibition to the use of bacteriological methods of warfare and agree to be bound as between themselves according to the terms of this declaration.
The High Contracting Parties will exert every effort to induce other States to accede to the present Protocol. Such accession will be notified to the Government of the French Republic, and by the latter to all signatories and acceding Powers, and will take effect on the date of the notification by the Government of the French Republic.
The present Protocol will come into force for each signatory Power as from the date of deposit of its ratification, and, from that moment, each Power will be bound as regards other Powers which have already deposited their ratifications.

Source: OPCW (2018b).

The adoption of the protocol represented a major step towards banning chemical weapons as a legal, but importantly also as a legitimate, means of warfare. Although the legal norm against the use of chemical weapons was violated in several instances during the interwar period (Sislin 2018; Warren 2012) – by Spanish and French troops using mustard gas in Morocco during the third Rif War in 1924, as well as by Italy in Libya in 1928 and in Ethopia in 1935 – the use of chemical weapons in the Second World War was marginal, particularly compared with First World War practices. In its Second World War campaigns, Japan used gas weapons in China, and Germany used chemical weapons on rare occasions at the Eastern Front and, most notably, in the Holocaust. But the Western Allies refrained from their usage, although British and US political and military leaders prepared for retaliatory action against a possible German or Japanese chemical weapons attack with reciprocal means (van Courtland Moon 1996).

After the Second World War, new, typically comprehensive frameworks governing the use of force via international law were established with the UN Charter at their centre. The use of chemical weapons further dwindled but never completely stopped, with one notable usage being the US deployment of anti-plant and irritant agents during the Vietnam War (Martin 2016; Bonds 2013).

In military regards, chemical weapons played a more important role in Middle Eastern conflicts, for example, during the Iran–Iraq War from 1980 to 1988. The most notorious case was a chemical attack by Iraqi forces on the Kurdish city of Halabja on 16 March 1988. The attack killed between 3,000 and 5,000 civilians and injured many more (see Wirtz 2019, 793; Hiltermann 2007). In 2010 the Iraqi High Criminal Court recognised the attack as an act of genocide, years after the fall of the Saddam Hussein regime in 2003. The main figure responsible for the attack was identified as Ali Hassan al-Majid, also known as ‘Chemical Ali’, who was sentenced to death and executed in 2010.

The Iraqi government refused to accept responsibility for the attack at the time, blaming Iran, and the international community’s response was insignificant and politically indifferent. Iraq had sourced material and knowledge required for the production of chemical weapons from countries such as Singapore, the Netherlands, Germany, the United Kingdom, and France. While international sanctions were in place during the Iran–Iraq War, the United States, the Soviet Union and other countries supported Iraq, partly as a traditional ally, partly because of the Islamic Revolution in Iran (Fredman 2012). But the use of chemical weapons by Iraq during this conflict was extensive and resulted in approximately 45,000 direct casualties (Russell 2005, 197).

The Iraqi case underlines both the weakness of pre-established legal norms (Iraq had ratified the Geneva Protocol on Asphyxiating or Posinous Gases in 1931)[4] and the relevance of practices of use for creating a patterned set of deviant actions. These practices had been widely ignored by the international community at the time and were potentially strengthened by this indifference – in particular that exhibited by the United States (Walker 2017). Nevertheless, many countries, including the United States, significantly reduced their chemical weapons stocks until the end of the Cold War. By the late 1980s, chemical warfare had been widely regarded, and rhetorically framed, as a global 'taboo' (Price and Tannenwald 1996). But the international legal norm prohibiting the use of chemical weapons and making their use appear normatively problematic was apparently not universal or powerful enough to override all military strategic and tactical considerations.

Table 2.7 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction.

Article 1. Each State Party to this Convention undertakes never under any circumstances:
(a) To develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone;
(b) To use chemical weapons;
(c) To engage in any military preparations to use chemical weapons;
(d) To assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Convention.
Article 2. Each State Party undertakes to destroy chemical weapons it owns or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of this Convention.
Article 3. Each State Party undertakes to destroy all chemical weapons it abandoned on the territory of another State Party, in accordance with the provisions of this Convention.
Article 4. Each State Party undertakes to destroy any chemical weapons production facilities it owns or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of this Convention.
Article 5. Each State Party undertakes not to use riot control agents as a method of warfare.

Source: OPCW (2018a).

The norms on chemical weapons were only reaffirmed relatively late with the comprehensive Convention on the Prohibitions of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention (CWC)) of 1993, which entered into force in 1997 and comprises twenty-four articles plus annexes. Table 2.7 summarises the stipulations of Articles 1–4 of the CWC.

The CWC turned out to be a significant success in the attempt to establish international legal norms against the use, possession, and proliferation of chemical weapons (OPCW 2018a,b). To date, 193 countries are parties to the CWC (only Egypt, Israel, North Korea and South Sudan remain outside of the treaty framework) and almost all declared chemical weapons stockpiles have been destroyed under UN supervision.

Nevertheless, the use of chemical weapons has not been completely eradicated: Syria had not signed the treaty before the outbreak of the civil war in 2011 and the Assad regime used chemical weapons repeatedly, as confirmed by the OPCW-UN Joint Investigative Mechanism[5] (see also Arms Control Association 2018). The danger that the Syrian chemical weapons programme and the possible proliferation to other conflict parties posed was significant: '[a]ccording to US estimates, at more than 1,300 metric tons spread out over as many as 45 sites in a country about twice the size of Virginia, Syria's arsenal of chemical weapons in 2013 was the world's third-largest. It was 10 times greater than the CIA's (erroneous) 2002 estimate of Iraq's chemical weapons stash, and 50 times larger than the arsenal Libya declared it had in late 2011' (Chollet 2016).

The US response to the potential use of chemical weapons by Syrian government troops in 2012 was a decisive factor in shaping future events. During a press briefing at the White House on 20 August 2012, President Obama made the following statement when asked about the situation in Syria and whether the US military might be deployed to keep chemical weapons safe:

'I have, at this point, not ordered military engagement in the situation. But the point that you made about chemical and biological weapons is critical. That's an issue that doesn't just concern Syria; it concerns our close allies in the region, including Israel. It concerns us. We cannot have a situation where chemical or biological weapons are falling into the hands of the wrong people. We have been very clear to the Assad regime, but also to other players on the ground, that *a red line for us is we start seeing a whole bunch of chemical weapons moving around or being utilized*. That would change my calculus. That would change my equation' (US Office of the Press Secretary 2012; our emphasis).

The 'red line' drawn by Obama did not, however, make the Syrian regime refrain from further using chemical weapons: '[t]he Syrian Archive has documented 212 likely chemical attacks, but the OPCW-UN Joint Investigative Mechanism Fact-Finding Mission has only been able to confirm 16 cases as of June 2018. US Ambassador to the United Nations Nikki Haley claimed in April 2018 that the Bashar al-Assad regime conducted at least 50 chemical weapons attacks, while Human Rights Watch accused the Syrian regime of the majority of 85 documented chemical weapons attacks in Syria in an April 2018 report' (Arms Control Association 2019b).

Although there was therefore evidence for the use of chemical weapons, the international community, and the United States in particular, overall remained inactive during the twelve months following Obama's 'red line' statement. However, on 21 August 2013, a chemical attack occurred in Ghouta, a suburb of Damascus controlled by opposition forces. The United Nations Mission to Investigate Allegations of the Use of Chemical Weapons in the Syrian Arab Republic concluded in its final report in December 2013 that they had 'collected clear and convincing evidence that chemical weapons were used also against civilians, including children, on a relatively large scale in the Ghouta area of Damascus on 21 August 2013' (UNSC 2013, 21).

President Obama responded to the Ghouta attack in early September 2013 during a press conference in Stockholm. The statement makes some important points with regard to practices and norms and it is hence useful to consider it at some length:

'The world set a red line when governments representing 98 percent of the world's population said the use of chemical weapons are abhorrent and passed a treaty forbidding their use even when countries are engaged in war. … The international community's credibility is on the line … because we give lip service to the notion that these international norms are important. And so the question is how credible is the international community when it says this is an international norm that has to be observed? … And I do think that we have to act because if we don't, we are effectively saying that even though we may condemn it and issue resolutions and so forth and so on, somebody who is not shamed by resolutions can continue to act with impunity. And those international norms begin to erode and other despots and authoritarian regimes can start looking and saying that's something we can get away with, and that then calls into question other international norms and laws of war and whether those are going to be enforced' (*Washington Post* 2013).

This statement is important because it constructs a clear discourse making arguments about Syrian norm-violation, about the responsibility of the international community to protect norms, and about the risk that practices erode norms – in this case that the international taboo represented by the broad agreement on the CWC by almost all states is contested by the Syrian government's practice of using chemical weapons. The US Congress approved the use of military force against the government of Syria on 4 September 2013, but Syria agreed to a deal on 10 September 2013 to destroy all of its chemical weapons and to accede to the CWC. While the OPCW inspection teams could enter parts of the country and verify the destruction of some stockpiles (see Makdisi and Pison Hindawi 2017), reports about chemical weapons attacks continued during the duration of hostilities and are documented until at least 2018 (BBC *News* 2018; Arms Control Association 2019a).

Washington's 'red line' position, as well as the reluctant response to chemical warfare by the international community particularly with regard to a possible military intervention, has triggered controversial assessments. A former official of the Obama administration, for example, argued that '[j]udged by what the red line was originally intended to do – address the massive threat from Syria's chemical weapons – it was a success. In fact, it has been perhaps the only positive development related to the Syria crisis' (Chollet 2016). Others, however, noted that 'around 90 percent of the use of chemical weapons took place after the "red lines" were drawn by Barack Obama's administration back in 2012' (Kasapoğlu 2019). While a substantial amount of chemical weapons were destroyed or removed and the OPCW–UN Joint Mission completed its mission in September 2014, the use of chemical weapons in the Syrian conflict did not stop, and the Trump administration launched missile strikes against Syrian military infrastructure in 2017 and 2018 (together with the United Kingdom) as a response to new reports of chemical attacks.

Overall, it can be concluded that the chemical weapons taboo is apparently not powerful enough to have had a constitutive impact on the Syrian government to abandon its chemical weapons stockpiles voluntarily and completely, nor does it shape the actions of those individuals that are responsible for chemical attacks. The question of why this norm or other norms governing the use of force are less strong than constructivist research might argue is not the focus of this book, however. Rather, we are interested in the problem that Obama addressed in his statement: the risk and possibility that practices erode norms or that actions create precedents of standards for using force that could become more widespread. Whether or not this scenario is probable in the case of the Syrian use of chemical weapons and whether a military intervention would have prevented the continuation of chemical attacks and led to a more preferable outcome in a complex conflict is debatable.

On the one hand, the CWC has established a strong legal norm and a regime that prohibits chemical weapons and builds a solid basis for counteracting violations of this norm legally and legitimately, as well as by military means. On the other hand, the case of Syria also shows the limits of international norms in cases of violation, whatever the reason for violation is. Even the strongest legal norms are fragile, depending on contexts, and the reach of international law is shorter than that of domestic criminal law, for instance. Moreover, the reaction to the string of chemical attacks over years in Syria is limited if judged against the initial 'red line' drawn by Obama as synonymous with a taboo. We have to ask ourselves: is there a tendency to accept a situation considered to be too complex and risky to address decisively? This tendency could, over time, allow possible conditions for setting use-of-force standards in practices that do not conform to international, deliberative norms.

In sum, the CWC as a specific and comprehensive treaty is a major step towards not only regulating, but also prohibiting chemical weapons as means of warfare. However, initially, the international community's response was slow and somewhat indecisive with regard to developing a comprehensive treaty banning the use, the production, and the proliferation of chemical weapons based on the Geneva Protocol. The Second World War and the ensuing Cold War created a political constellation in which major powers did not push for such a step and were politically unwilling to abandon their chemical weapons stockpiles for a long time. Although the use of chemical weapons has increasingly been considered as a key taboo in IR (Dolan 2013; Price 1995; van Courtland Moon 2008), both Iraq's practices of the 1980s and the incidents in Syria in the 2010s show that the production and use of chemical weapons can still be part of military–political strategy and tactics. This not only questions the existence of a truly universal taboo but also underlines the risk of tacit acquiescence by the international community in cases where an open and decisive position against the use of chemical weapons seems to be politically inopportune. This also includes Russia's position as a firm supporter of the Assad government.

NUCLEAR WEAPONS

The history of regulating the use, production, and proliferation of nuclear weapons by establishing international legal norms is different from the previous two cases in at least three regards: nuclear weapons are a more recent weapons system, only having become operational in 1945; although nuclear weapons have been an academic, political, and societal focus since their emergence, they were used only twice in warfare, at the end of the Second World War; only a small minority of the 193 UN member states possess nuclear weapons. The latter are the 'recognised'[6] nuclear weapon states (China, France, the United Kingdom, the United States, and Russia), plus India, Pakistan, and North Korea (who have declared the possession of nuclear weapons) as well as Israel (which is generally believed to possess nuclear weapons but has never officially confirmed this).

Nevertheless, the possession and possible proliferation of nuclear weapons is one of the decisive issues of international politics in the post-Second World War era. It dominated global security policy until the end of the Cold War and is of continued importance in international affairs as the struggle over the North Korean and the Iranian nuclear armament programmes demonstrates.

Nuclear weapons as a technology of warfare emerged during the Second World War, when US President Roosevelt approved the launch of the atomic programme (also known as the Manhattan Project) in 1941. It was mainly motivated by the fear that Nazi Germany could develop a workable nuclear weapon and use it against its adversaries.[7] The first nuclear device developed by the Manhattan Project was tested in July 1945. Then followed the devastating attacks on Hiroshima on 6 August and Nagasaki on 9 August 1945, causing estimated casualties of 140,000 in Hiroshima and 70,000 in Nagasaki (these figures do not take into account the long-term effects of radiation exposure). Japan surrendered a few days after the Nagasaki bombing and thereby made a third, planned use of the atomic bomb redundant.

With the acquisition and first successful test of a nuclear weapon by the Soviet Union in 1947, and tests by the United Kingdom in 1952 (followed by France in 1960, and China in 1964), nuclear weapons became a central military asset for major powers, an important strategic and tactical weapon, and an integral part of the global arms race between the Western and Eastern blocs until the 1960s. Only then were first steps to limit the proliferation and testing of nuclear weapons undertaken at the international level.

During the post-Second World War era, nuclear weapons acquired the legacy of a system that seems impossible to use for political reasons and has only very limited military usefulness. However, while nuclear weapons were never used again after 1945, the US political and military leadership in fact sounded options for their usage during the Korean War and the Vietnam War. In particular, the availability of tactical nuclear weapons with less explosive power since the 1960s made their use theoretically more appropriate and 'useful' from a purely military standpoint (see Tannenwald 1999). The lack of a regulation or prohibition of the use of nuclear weapons in international law in the first decades of their existence has led researchers to argue for the emergence of a strong moral–ethical norm against the use of nuclear weapons in the form of a taboo, even surpassing a possible chemical weapons taboo (Tannenwald 1999; Dolan 2013; Price and Tannenwald 1996). The existence of this taboo is helpful for understanding why states refrained from using this weapons system.

Arguably due to the history of non-usage, the political focus was not on regulating the practice of nuclear weapons use but on steering the effects and implications of nuclear tests and averting nuclear weapons proliferation. While the numbers of nuclear tests remained low, with less than 20 tests per year until the mid-1950s, it skyrocketed to 116 tests in 1958 and 178 tests in 1962 (Arms Control Association 2017). Only one year later, the international community succeeded in concluding a treaty substantially limiting nuclear weapon tests: the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water or Partial Test Ban Treaty (PTBT) was first signed by the Soviet Union, the United Kingdom, and the United States on 5 August 1963. In fact, initiatives to control and regulate atomic power and nuclear weapons date back as early as 1945, but it took another two decades before the first important international treaty establishing legal norms emerged as an outcome of international deliberations. Several factors facilitated the conclusion of an agreement at this time. Among these were the effects of the Cuban Missile Crisis in 1962, as well as the growing public awareness and concern about the impact of nuclear weapon tests in terms of a global radioactive fallout: most tests carried out during the test peak in the 1960s were atmospheric in nature, such as the Pacific US tests on the Marshall Islands ('Pacific Proving Grounds'), for example, Bikini Atoll.

Table 2.8 Partial Test Ban Treaty 1963, Article I.

1. Each of the Parties to this Treaty undertakes to prohibit, to prevent, and not to carry out any nuclear weapon test explosion, or any other nuclear explosion, at any place under its jurisdiction or control:
(a) in the atmosphere; beyond its limits, including outer space; or under water, including territorial waters or high seas; or
(b) in any other environment if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted. It is understood in this connection that the provisions of this subparagraph are without prejudice to the conclusion of a Treaty resulting in the permanent banning of all nuclear test explosions, including all such explosions under-ground, the conclusion of which, as the Parties have stated in the Preamble to this Treaty, they seek to achieve.

Deliberations on an agreement to delimit nuclear weapons testing were complicated by the political constellation of the Cold War and by Soviet concerns that such a treaty would only serve the purpose of underpinning American nuclear hegemony. Furthermore, the United States and the United Kingdom intended to include a comprehensive verification and control mechanism, comprising on-site inspections, in a treaty to make sure secret tests were not conducted, while the Soviet Union opposed this plan decisively (US Department of State 2018). A breakthrough was reached by excluding underground tests from the treaty, thereby disregarding the possibility of secret tests that could not be detected by the technologies available in treaty parties. The ensuing PTBT was widely accepted as a first international attempt to construct legal norms regulating nuclear weapon testing – in 1963, 108 countries signed the treaty, which was eventually ratified by 94, while 23 further countries acceded to the treaty at a later point (US Department of State 2018).

Consequently, the total number of nuclear tests indeed decreased slightly over the next few years after the peak of 1962 and started to oscillate around fifty at the end of the decade. However, France, having started nuclear testing in 1960, never signed the treaty, nor did the People's Republic of China, the new emerging nuclear weapon state that launched its first test in 1964, only one year after the treaty had entered into force. In contrast, the future nuclear weapons states India, Israel, and Pakistan signed the treaty, while Pakistan ratified it only in 1988. Although the PTBT could not completely eradicate the atmospheric fallout of underground tests, the number of tests that would have (before the treaty) or did violate the PTBT decreased significantly: the United Kingdom, the United States, and the Soviet Union /Russia did not conduct atmospheric tests after 1963 (Bergkvist and Ferm 2000, 9).

Table 2.9 Key elements of the NPT's non-proliferation dimension.

Article I
Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly; and not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.
Article II
Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.

Moreover, the depositories of the PTBT – the United Kingdom, the United States, and Russia – did not conduct any tests after 1992, while all nuclear weapons states except North Korea refrained from nuclear tests after 1998. The reasons for this development are the negotiations on a Comprehensive Nuclear-Test-Ban Treaty (CTBT) in the early 1990s, as well as the fact that technological innovation made financially and politically costly nuclear tests largely redundant for the major powers. In this sense, '[i]t is now widely recognized that the United States no longer has any need for, nor any interest in, conducting nuclear explosive tests' (Collina and Kimball 2012).

The next step in the emergence of legal international norms on nuclear weapons was negotiations on a Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which was signed in 1968 and became effective in 1970. The main purpose of this treaty was to prevent the proliferation and spread of nuclear weapons. The treaty was negotiated in the framework of the 'Eighteen Nation Committee on Disarmament', initiated as a deliberative forum by a UN General Assembly resolution in 1961.[8]

Table 2.10 The NPT's disarmament dimension.

Article VI
Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.

The NPT covers three dimensions: non-proliferation, disarmament, and the right to use nuclear technology peacefully. The central non-proliferation dimension obliges the recognised nuclear weapon states, which are the five permanent members of the UN Security Council (UNSC), to refrain from proliferating nuclear weapons in any form to non-nuclear-weapon states. Moreover, the article stipulates that nuclear weapon states are prohibited from assisting non-nuclear-weapon states in acquiring nuclear weapons. This proposition is met by Article II, which stipulates that non-nuclear-weapon states must not receive the transfer of nuclear weapons. However, the norm is weakened by the fact that three declared nuclear weapon states are not party to the treaty.

Regarding the disarmament dimension, the relevant article (Article VI) only amounts to a brief declaration, lacking the enumeration of more concrete measures or steps to promote the aim of nuclear disarmament. Article VI appears vague and fails to set any obligations towards disarmament, referring to 'good faith' as a basis of such a development. However, in a contrasting perspective, the International Court of Justice unanimously ruled in an advisory opinion 'On the Legality of the Threat or Use of Nuclear Weapons' in 1996 (at the request of the UN General Assembly) that '[t]here exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control' (ICJ 1996), referring explicitly to Article VI of the NPT.

The third dimension addressed by the NPT, the peaceful use of nuclear energy, is another important aspect of the aim to delimit the spread of nuclear weapons. In the light of the unrealistic renunciation of the non-military use of nuclear energy by user countries, the NPT opens a way forward to developing relevant capacities to all parties to the treaty. From the viewpoint of non-proliferation and disarmament, however, this increases the risk of non-compliance with the NPT obligations.

Table 2.11 The NPT's peaceful use of nuclear energy dimension.

Article IV
1. Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty.
2. All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Parties to the Treaty in a position to do so shall also co-operate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world.

Furthermore, the NPT contains a verification article (Article III), which stipulates safeguard mechanisms to ensure compliance with the treaty's obligations in line with the role of the International Atomic Energy Agency (IAEA) as the international institution overseeing the legal norms of the NPT. These safeguard obligations were particularly important in the international community's response to the Iranian nuclear programme. Iran signed the NPT in 1968 and ratified it in 1970. However, in the early 2000s, concerns about Iran's uranium enrichment programme grew, and the IAEA concluded in 2005 that Iran failed to meet its safeguards obligations (IAEA 2005), while the UNSC passed a resolution demanding Iran end the enrichment programme in response. Although the IAEA has been able to increase its verification and inspection activities in Iran considerably since the mid-2000s (IAEA 2018), the Iran nuclear programme remains subject to international contestation. At the same time, Iran explicitly refers to Article IV of the NPT and argues it has the right to develop nuclear capabilities for peaceful use.

The North Korean nuclear programme is a second case of international contestation. North Korea withdrew from the NPT in 2003 and, in contrast to Iran, openly pursues a programme of nuclear armament including nuclear tests, arguing it has the right to acquire nuclear weapons for self-defence if other countries possess these weapons. This also means that IAEA inspectors have not been able to visit North Korea since 2009.

The NPT was developed to be universal in character, like the PTBT. Initially adopted for a limited period, it was extended indefinitely in 1995 and now has 93 signatories and 191 states parties. However, the nuclear weapon countries India, Israel, and Pakistan have not adhered to the treaty, while North Korea withdrew from the treaty, as mentioned above. In terms of prohibiting proliferation, the NPT has given the IAEA the competence to refer countries that do not comply with it to the UNSC, which can in turn adopt an international legal response, such as sanctions or other punitive measures. As argued, the effectiveness of the mechanism depends not only on the political will of UNSC members to respond to breaches of the NPT – provided that the respective country is party to it – but also on the IAEA's capacities to perform the required inspections and monitoring, which is often not the case (Council on Foreign Relations 2012).

Another prominent example of the failure to stop proliferation completely by establishing a norm that would be universally accepted is the Syrian nuclear programme: Syria has been party to the NPT since 1969, but began constructing a plutonium production reactor in the mid-2000s. The reactor facility was undeclared under the NPT and built with North Korean assistance.[9] Israel destroyed the facility in an air strike in 2007. Syria only cooperated reluctantly with the IAEA, while the agency's board of governors adopted a resolution declaring Syria in non-compliance with its NPT safeguards obligations in 2011.

The international community has taken two further steps to establish an international legal–normative regime to regulate and prohibit nuclear weapons. These are the CTBT, as mentioned before, and the Treaty on the Prohibition of Nuclear Weapons (also Nuclear Weapons Prohibition Treaty (NWPT)). Discussion on a CTBT started in 1994, and the final CTBT was adopted by a General Assembly resolution only two years later, when it was made open for signature. Article XIV of the CTBT stipulates that it will enter into force after all forty-four states listed in Annex 2 to the treaty have ratified it. This group of states includes the recognised nuclear weapon states as well as those having declared or being considered as nuclear weapon states. However, several Article XIV states have yet to ratify the treaty, namely China, Egypt, India, Iran, Israel, North Korea, Pakistan, and the United States (UNODA 2018a). This also means that key actors are not yet parties to the CTBT. The United States, for example, has signed the CTBT but has not ratified it. It is argued that the 'Senate did not approve the treaty in 1999, mainly due to two reasons: It was unclear whether the United States could maintain a reliable nuclear arsenal without testing, and there were doubts about the ability to detect cheating' (Pifer 2016). Domestic politics continue to prevent the US Senate from ratifying the CTBT.

The second and most recent international initiative is the NWPT, the first attempt to comprehensively prohibit nuclear weapons. In 2016, the UN General Assembly passed a resolution 'to convene in 2017 a United Nations conference to negotiate a legally binding instrument to prohibit nuclear weapons, leading towards their total elimination' (UN General Assembly 2017a, Paragraph 8). The initiative for the NWPT is based on three international conferences that debated the humanitarian impact of nuclear weapons in 2013 and 2014. These conferences were convened by Norway, Mexico, and Austria and represented a renewed interest in the threats and risks linked to nuclear weapons. The initiative was notably inspired by the persistent lack of a substantial disarmament of nuclear weapons, which is not the focus of the existing treaties, although the number of nuclear warheads – particularly those stockpiled by the United States and Russia – has decreased significantly since the end of the Cold War due to the NPT and bilateral agreements such as the Strategic Arms Reduction Treaty (START).

A large number of state representatives and NGOs such as the International Committee of the Red Cross (ICRC) participated in these conferences to promote the advancement of nuclear disarmament negotiations (UNODA 2018b). Setting out that the states parties to the NWPT are '[d]eeply concerned about the catastrophic humanitarian consequences that would result from any use of nuclear weapons, and recognizing the consequent need to completely eliminate such weapons, which remains the only way to guarantee that nuclear weapons are never used again under any circumstances', the treaty contains twenty articles specifying the prohibition of nuclear weapons and relevant mechanisms towards this end.

The NWPT opened for signature in 2017 and reached the required fifty ratifications necessary for its entry into force in October 2020, chiefly via ratifications by countries in the Global South. In fact, the negotiation process leading up to the NWPT had been heavily influenced by a group of Global South states (mainly Mexico, Chile, South Africa, and Costa Rica) that worked closely with the International Campaign to Abolish Nuclear Weapons (Bode 2019; Potter 2017; Sauer and Pretorius 2014; Thakur 2017). Most countries of the Global North have, however, abstained from voting on the treaty. This group includes all North Atlantic Treaty Organization (NATO) members apart from the Netherlands, who voted against the treaty. In Europe, Austria, Ireland, Sweden, and Switzerland signed the treaty. Moreover, none of the nuclear weapon states participated in the negotiations and in the vote on adopting the NWPT. In a joint statement, the United Kingdom, the United States, and France emphasised that '[t]his initiative clearly disregards the realities of the international security environment. Accession to the ban treaty is incompatible with the policy of nuclear deterrence, which has been essential to keeping the peace in Europe and North Asia for over 70 years' (Permanent Mission of the United States 2017). At the same time, the three countries highlighted the importance of the NPT.

Table 2.12 Treaty on the Prohibition of Nuclear Weapons, Article I.

Prohibitions
1. Each State Party undertakes never under any circumstances to:
(a) Develop, test, produce, manufacture, otherwise acquire, possess or stockpile nuclear weapons or other nuclear explosive devices;
(b) Transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly or indirectly;
(c) Receive the transfer of or control over nuclear weapons or other nuclear explosive devices directly or indirectly;
(d) Use or threaten to use nuclear weapons or other nuclear explosive devices;
(e) Assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Treaty;
(f) Seek or receive any assistance, in any way, from anyone to engage in any activity prohibited to a State Party under this Treaty;
(g) Allow any stationing, installation or deployment of any nuclear weapons or other nuclear explosive devices in its territory or at any place under its jurisdiction or control.

Source: UN General Assembly (2017b).

The fact that so far none of the nuclear weapon states has shown an interest in becoming party to the NWPT makes its future role in establishing legal norms uncertain. Nevertheless, the NWPT can be taken as an important political signal and has created momentum for a closer and more intensive cooperation of states and civil society towards the long-term goal of abolishing nuclear weapons and propagating an important social norm (Mian 2017).

The history of developing, testing, and using nuclear weapons shows an intensive set of activities aimed at reducing the risks of nuclear warfare after the first (and only) devastating use of nuclear weapons in 1945. Due to their special status as the most powerful and deadly weapon of mass destruction, it is not far-fetched to argue for the existence of a universal nuclear weapons taboo. To what extent such a norm is constitutive is unclear, but both the political consequences of and public opinion on the use of nuclear weapons make them a weapon category of limited practical, military importance apart from their deterrence effect and status as a weapon of last resort. At the same time, the case of North Korea in particular shows that nuclear weapons remain high in political importance, and that nuclear proliferation and production remain a crucial issue for international relations.

BLINDING LASER WEAPONS

Establishing legal norms on blinding laser weapons (BLW) is closely linked to the 1980 adoption of the United Nations Convention on Certain Conventional Weapons (UN-CCW). The UN-CCW entered into force in 1983 and we have already become familiar with it as the international framework covering discussions on LAWS in Geneva. The prohibition of BLW was advocated as the fourth protocol of the UN-CCW in 1986, based on an initiative by Sweden and Switzerland, and was thereafter promoted by the ICRC (ICRC 1995). When this first draft resolution was introduced, 'there was little discussion because the vast majority of States were unaware of developments and thought that such weapons were science-fiction' (Doswald-Beck 1996, 273). After it became apparent in the late 1980s that BLW were not science fiction but indeed a military option, the ICRC launched an expert meeting in 1989 to assess the development and implications of BLW further. When France requested a review conference for the CCW in 1993, it was an opportunity to convene four rounds of meetings of the Group of Governmental Experts (GGE), which prepared the review conference and considered the issue of BLW. In this context, Sweden and the ICRC made two proposals for an additional protocol to the CCW (see table 2.13).

Table 2.13 Proposals for CCW Protocol by Sweden and the ICRC.

'It is prohibited to use laser beams as an anti-personnel method of warfare, with the intention or expected result of seriously damaging the eyesight of persons' (Sweden)
'1. Blinding as a method of warfare is prohibited; 2. Laser weapons may not be used against the eyesight of persons' (ICRC)

Source: Doswald-Beck (1996, 278–9).

The proposal by the ICRC and Sweden shows that it aimed at a comprehensive ban of blinding lasers as a method of warfare. However, during the negotiations, the United States and the United Kingdom opposed this explicit language, arguably in order to protect their soldiers from prosecution for war crimes if a laser incidentally blinded an enemy combatant. Moreover, these two countries and Russia declared their intention, as well the military necessity, of developing laser weapons that could take out optical devices (Peters 1996, 110–11). As a consequence, Protocol IV to the UN-CCW on Blinding Laser Weapons, which eventually entered into force on 30 July 1998, does not constitute a comprehensive, total ban of BLW and their use is generally permitted, even if this could cause blindness as incidental or collateral damage. It contains four brief articles comprehensively prohibiting the use of BLW specifically aiming at causing permanent blindness (see table 2.14).

During the negotiation, there were differences in opinion regarding definitions, such as how 'permanent blindness', reiterating a WHO definition, would be defined, but also what the term 'weapon' would mean in this context. Article 1 explicitly refers to 'laser weapons' and to 'specifically designed', which raised the question of whether other types of laser devices not primarily designed as a weapon would be covered by the protocol (Zöckler 1998, 335–6). The extent of linguistic ambiguity is a recurring feature of the protocol as can be seen in table 2.14 and is also relevant for discussions on AWS, as repeatedly outlined in this book.

However, the protocol does not prohibit the production or use of laser weapons that can 'incidentally' cause blindness, nor does it prohibit BLW causing temporary blindness or permanent blindness if it is not considered as 'seriously disabling'. Nevertheless, the adoption of the protocol, which represents a rare case of 'outright prohibitions of conventional weapons' (Peters 1996, 109), is regarded as an important step in the regulation of weapons systems, and potentially in the advancement of norms ostracising brutal weapons systems: 'It is the first time since 1868 that a weapon has been prohibited before it has been used on the battlefield. It has also stigmatized deliberate blinding' (Doswald-Beck 1996, 296). The protocol became widely accepted and has 108 states parties as of October 2020, including key military powers and weapon-producing countries, such as China, France, Germany, India, Israel, Japan, Russia, the United Kingdom, and the United States.

Table 2.14 UN-CCW Protocol on Blinding Laser Weapons, Articles 1–4.

Article 1
It is prohibited to employ laser weapons specifically designed, as their sole combat function or as one of their combat functions, to cause permanent blindness to unenhanced vision, that is to the naked eye or to the eye with corrective eyesight devices. The High Contracting Parties shall not transfer such weapons to any State or non-State entity.
Article 2
In the employment of laser systems, the High Contracting Parties shall take all feasible precautions to avoid the incidence of permanent blindness to unenhanced vision. Such precautions shall include training of their armed forces and other practical measures.
Article 3
Blinding as an incidental or collateral effect of the legitimate military employment of laser systems, including laser systems used against optical equipment, is not covered by the prohibition of this Protocol.
Article 4
For the purpose of this protocol 'permanent blindness' means irreversible and uncorrectable loss of vision which is seriously disabling with no prospect of recovery. Serious disability is equivalent to visual acuity of less than 20/200 Snellen measured using both eyes.

Apart from the issue of definition, the effectiveness of the protocol is further complicated by the fact that different categories of lasers exist for tactical and non-tactical purposes (see Seet and Wong 2001, 217–18). These are Category A lasers, for example, range finders for measuring target distances; Category B lasers, which are anti-sensor lasers used to destroy electro-optical equipment; Category C lasers, which comprise two types of anti-personnel laser weapons (dazzle lasers, which only temporally blind or confuse, for example, pilots, and lasers specifically designed to blind opponents); Category D lasers, which are high-energy anti-material lasers that can potentially cause serious bodily harm.

This means that the protocol in fact only prohibits a specific segment of laser weapons or laser devices that could be used as a weapon. In this regard, the existing legal framework was also relevant for considering the status of BLW. Article 35, Additional Protocol I of the 1977 Geneva Convention, outlining basic rules, stipulates in Paragraph 2 that 'it is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering'. The aspect of unnecessary suffering, in particular, led to discussions about the general lawfulness of BLW in absence of a specific regulation, as in the case of chemical weapons. A 1995 Human Rights Watch report provided a detailed discussion of this aspect, highlighting that there was large consensus that blinding causes suffering – whether this suffering is unnecessary or disproportionate compared with other weapons systems is, however, more controversial (Human Rights Watch 1995). The United States, for instance, argued for the legality of BLW. As the ICRC notes, '[a]n evaluation in 1988 by the Office of the Judge Advocate General concluded that such weapons would not cause unnecessary suffering and therefore would not be illegal' (ICRC 2018b). However, the US Secretary of Defense clearly stated in 1996 in a letter on the question of BLW: 'there is no prohibition in [the CCW] on research, development or production. Nevertheless, the Department has no intent to spend money developing weapons we are prohibited from using. We certainly would not want to encourage other countries to loosely interpret the treaty's prohibitions, by implying that we want to develop or produce weapons we are prohibited from using' (ICRC 2018b).

The attempt to establish a legal norm outlawing the use of BLW appears to have been successful not only regarding international law, but also in terms of anchoring a widely accepted taboo against blinding as a means of warfare – at least at a rhetorical level. For example, China, which had invested significantly in researching and developing BLW in the 1990s, stated on the occasion of the adoption of the protocol that '[t]he Chinese delegation positively appraises the important results achieved by this conference. We adopted a new Protocol banning the use and transfer of blinding laser weapons which are specially designed to cause permanent blindness to naked eyes. This is the first time in human history that a kind of inhumane weapon is declared illegal and prohibited before it is actually used. This is significant' (ICRC 2018b).

While laser weapons (more specifically, dazzler weapons) had been used by the United Kingdom during the Falklands War in 1982 and deployed by the United States during the Gulf War and the intervention in Somalia in the early 1990s (Peters 1996, 109), the development and use of laser weapons meant to blind seemed to become more prominent and contributed to the adoption of the protocol. At the time when the negotiations intensified in the early 1990s, countries such as China, France, Germany, Israel, Russia, Serbia, Ukraine, the United Kingdom, and the United States arguably had research and development programmes on BLW in place (Human Rights Watch 1995). In the case of China and the United States, such systems were basically operational (Henckaerts *et al*. 2005, 293; Doswald-Beck 1996, 283). In this regard, the prohibition of a weapons system that is cheap to manufacture, psychologically effective, and overall constitutes 'a military capability that provides a superior technological edge against enemy troops, vehicles and aircraft' (Seet and Wong 2001, 216) is noteworthy because the establishment of a legal norm and ethical considerations prevailed over reasons of practical and strategic usefulness.

However, research into laser technology continued after the protocol entered into force; this is unsurprising given the dual-use character of lasers and their importance in military devices that are not banned by the protocol. Nevertheless, it is reported that, for example, China has made at least four different laser weapons operational since 2015, including the BBQ-905 Laser Dazzler Weapon, the WJG-2002 Laser Gun, the PY132A Blinding Laser Weapon, and the PY131A Blinding Laser Weapon. China was also reported to have used a dazzler weapon against US aircrafts in Djibouti – the type and spread of these weapons is, however, unknown (Brown 2018; Trevithick 2018). Also, the United States has continued its research and development programme on BLW, arguably in order to protect own troops from becoming victims of enemy laser weapons (Drolette Jr 2014). It is noteworthy in this context that dazzler weapons have the potential to cause permanent damage to the eye when used at a shorter distance and their widespread acquisition in the military increases the risks of 'collateral' blinding, which is not prohibited by the 1995 Protocol.

The debate and negotiations leading to the protocol are an interesting case from the perspective of AWS as a non-state actor (ICRC) lobbied strongly and firmly for the prohibition of blinding (in contrast to the US/UK position). The ICRC pursued this strategy in collaboration with Sweden and Switzerland and later supported by key human rights advocacy NGOs, such as Human Rights Watch. Even though countries had research and development programmes in place and BLW seemed a 'promising' weapon from a military-tactical viewpoint at that time, the case of the BLW demonstrates that the preventive prohibition of weapons systems is possible in a relatively short period of time and can be largely uncontested.

However, this example also shows that it is difficult to adopt precise language in a binding treaty and there is often considerable political interest in keeping a certain degree of ambivalence: neither blinding in all circumstances nor all types of laser devices that could cause incidental but permanent damage to the human eyeball were banned. This again underlines the often ambivalent or indeterminate character of norms enshrined in international law, as we have already demonstrated via considering the case of submarine warfare earlier in this chapter. The development of laser devices and weapons was not completely stopped by the protocol – not least due to its dual-use character in the military context and the lack of prohibiting dazzler weapons, for example.

With regard to the case of AWS, the prohibition of BLW has some similarities in terms of process and the preventive nature of the protocol. However, the case is also different because BLW are a very specific type of weapon that was banned due to the specific injuries it would cause (Rosert and Sauer 2021). AWS are ill-defined regarding their autonomous features and their weaponry would be the same as other conventional weapons. In other words, the injuries caused by dropping bombs or firing bullets or missiles are not the reason why a ban of AWS is considered.

NORMS AND PRACTICES OF WARFARE: IMPLICATIONS OF HISTORICAL CASES

The preceding sections presented a historical overview of how an emerging international community has addressed novel weapons technologies since the late nineteenth century. Although the four cases diverge considerably with regard to time, circumstances, and context, as well as with regard to the technical characteristics of the weapons, they demonstrate that attempts to regulate weapons with features that noticeably changed warfare (compared with conventional means with a long-standing legacy of acceptance) have always been undertaken. The post-Second World War international order, with the UN system at its core, transformed the way disarmament and the legality of the use of force are deliberated. In the following, we highlight six aspects that are of particular importance when discussing how weapons systems and use-of-force norms relate to each other. These apply both in general and in particular to our consideration of AWS.

First, establishing international legal norms governing the use of force regarding specific weapons systems is a slow process, often more reactive than proactive, and one that is dominated by political considerations. In the cases of submarine warfare and nuclear weapons, the international community did not agree on specific norms before these weapons had been used and also failed to comprehensively regulate what a legal use could mean in practice afterwards. In the case of chemical weapons, a norm that was limited in scope had been in place since the early twentieth century, but it did not influence their excessive usage in the First World War. Blinding laser weapons mark the only case where the international community was able to proactively agree on preventively banning a specific weapon category, although blinding as a (coincidental) act of warfare was not completely prohibited.

This implies that norms defined by international law often lack impact for three main reasons: they may not even exist at the time the weapons are used; they are ambivalent or indeterminate; and they exist but are ignored, often because they arguably conflict with military strategy or 'necessity' as in the cases of submarine and chemical warfare demonstrate. These three observations influence the way legal norms *matter* in governing the use of force.

Second, and more importantly, historical cases provide us with answers to the question of how and why norms matter. In those cases where legal norms exist, there is often a wide gap between the codification of rules and the practice of warfare. Partly, this is the result of ambiguous or unspecific legal norms with regard to how weapons can be used appropriately. In other cases, such as chemical weapons norms, the rules explicitly prohibit their use and leave little room for interpretation. Nevertheless, practices of warfare have completely ignored such norms at times. Without going into detail about the different strategic and political reasons for why legal norms are followed or ignored, the initial chemical weapons norm completely failed to develop either a regulative or a constitutive impact during the First World War. This means that there was no impact based on prohibition or based on understandings of what the morally 'right' thing to do is in this context.

Third, the question of where norms originate should be examined when considering their impact. It is apparent that legal norms in the sense and meaning that dominates the political and academic debate, and in particular the current considerations of AWS, are an outcome of intensive, institutionalised, and long-lasting negotiations and deliberations. With the creation of the UN in 1945 and the subsequent establishment of specialised forums such as the UN-CCW to address disarmament, the process guiding these deliberations has become more formalised and inclusive than the processes at the beginning of the nineteenth century. All UN member states are invited to participate in these talks, which is certainly progress in comparison with the treaties only signed by a very limited number of major powers.

Fourth, from a more comprehensive social sciences point of view, the question of what defines appropriate action, or the appropriate use of force, is not answered exclusively by international law. The cases of new weapons systems presented in this chapter point to the importance of practices and the micro level. The relevant literature for the most part focuses on the deliberation of legal norms at a macro level of international politics. The outcome of this process is international law. But we have also seen that practices of warfare are performed at the micro level by individuals, such as submarine commanders or military leaders and personnel in the First and Second World Wars. The use of chemical weapons in the First World War was an established practice by some proponents to some extent, and it defined what was 'appropriate' use of force in certain situations.

Appropriateness should be taken here as a multifaceted concept, comprising military, moral, or legal appropriateness. The use-of-force practices described in this chapter were often illegal and morally widely considered as illegitimate due to the characteristics of the weapons systems – although understandings of legitimacy in the military context seem to have been chiefly influenced by enemy action.

Further, the legal norms of naval warfare defining rules for the conduct of submarine warfare were considered to be impractical and ambivalent, for example, with regard to the right to protect one's own boat. Therefore, they never developed the power of legitimacy among submarine personnel and in navies. The consequence of unrestricted submarine warfare led to the emergence of a specific understanding of appropriateness located in a contested area between legality and legitimacy. Regarding legality, the norms were comparatively explicit and clear in prohibiting unrestricted attacks on merchant vessels. Nevertheless, the extensive sinking of vessels loosely linked to the enemy established a strong practical norm defining the confines of the 'appropriate' use of force. In the case of submarine warfare, practices even had an impact on the implementation of international law, as the Dönitz trial shows. This means that the micro level fed back to the macro level of law and policymaking.

The implication is that the relationship between deliberation and implementation, between the macro- and the micro levels, is complex and multilayered. Conventionally, we would expect established legal norms to shape practices and to be implemented in a more or less linear way. While legal norms certainly define the range of prohibited actions, depending on the degree of specificity they exhibit, practice often deviates from this range, or may even contradict or conflict with it. If these practices are repeated and patterned, an understanding of hybrid-appropriateness emerges, which might or might not be in line with what has been established as legal or legitimate. In cases where specific norms exist, this can have an effect on how legal norms are understood and respected.

In cases where there are no specific norms in international law, existing practices do not necessarily mean that law will follow practice. The use of nuclear weapons at a time when no specific regulations existed shows that it did not establish a precedent of what would be appropriate in future conflicts, nor did the use of chemical weapons prevent the emergence of strict rules (although the entire annihilation of cities like Hiroshima and Nagasaki would today in any case conflict with norms of IHL such as distinction and proportionality). However, there is a close interplay of deliberation and implementation when it comes to legal norms. Attempts to define what is appropriate when it comes to using weapons are typically more complex than is often acknowledged.

If we leave behind the rather narrow perspective on legal norms, the question arises of what other norms might influence the way actors behave. There is a widespread conflation of legal norms and ethical norms in the sense that what is legal is considered as the 'right' thing to do. But this is does not need to be case – primarily, because law only defines what is prohibited and typically does not give guidance on moral questions. Certainly, legality and ethics are often closely connected, and the deliberate killing of civilians in war is not legal nor would be regarded as a legitimate or 'moral' practice.

However, the above examples of redefining what is appropriate use of force in a military context, whether it was unrestricted submarine warfare or the use of chemical and nuclear weapons, show that the boundaries of what is legitimate are being pushed and other guiding principles can play a role here. Even normative considerations might be relevant. The use of nuclear weapons against Japanese cities, in full awareness of the devastating consequences for hundreds of thousands of civilians, was justified at that time by the necessity to save lives and end the war – the life not just of US troops, but also of Japanese soldiers and civilians who might have been affected in future combat scenarios on Japanese soil. Decision-making is influenced by an array of reasons and ethical-normative, strategic, or legal considerations can be important.

Fifth, on what level are norms defined or emerge? This foregrounds the role of individuals and small groups. Enacting norms at a macro level, and their formal codification in the case of legal norms, still leaves the implementation of norms up to individuals. Practices comprise acts by individuals, and the examples of weapons regulations also show that individuals define appropriateness and substantiate indeterminate law. If actions follow a pattern or small groups of decision makers define appropriate actions, this can have a norm-shaping or even a norm-making effect. IR research has taken on this challenge of diversifying perspectives on norms in the last two decades, as we will see in more detail in the following chapters. However, the individual level of norm emergence, different types of norms, and the complex interrelatedness of macro and micro levels has not been studied comprehensively. The lesson learned from the historical cases of this chapter is that there are limits to international law in terms of specification, relevance, consideration, and implementation. It might lag behind technological developments or established practices; it might be too vague or be simply ignored; or it might be non-existent because agreements have not been found.

Sixth, can weapons systems be banned preventively? This question is particularly important for current debates on AWS. The case of BLW shows that the international community can act in a relatively efficient and goal-oriented manner within the established frameworks of international cooperation that arguably assist the emergence of comprehensive legal treaties tremendously compared with historical conditions. The main characteristic of the BLW case is that a specific practice, the deliberate blinding of humans as a means of warfare, was prohibited. Laser weapons were not banned completely; there are devices that can be used legally, and cases of collateral damage or incidental blinding were not defined as violations of the legal norm.

The advantage for those advocating a ban on BLW was that these weapons were comparatively easy to define as only serving a specific purpose and enabling a practice that was considered as a normative violation. This is similar to chemical weapons, although the range of chemical weapons is greater. In the case of submarine warfare, it was the practice that was contentious not the weapon. Initial norms defined prohibited ways of using submarines in warfare, which were, however, not sufficiently respected. The Nuclear Weapon Prohibition Treaty refers to 'catastrophic humanitarian consequences' and 'unacceptable suffering of and harm caused to the victims', which the use of nuclear weapons had and would have caused. In the same vein, chemical weapons and blinding laser weapons have been discussed as causing unnecessary suffering, being uncivilised and brutal. This implies that the way weapons are or could be used largely shapes whether a weapons system is subject to regulation.

If we put this into the context of AWS, it is apparent that these systems are much more complex in terms of their shape, features, and methods of potential use. A remote-controlled weapons system, such as a drone, can be used within the margins of conventional warfare with regard to ammunition and aspects such as distinction and discrimination. As technological development advances, the contested feature is technological autonomy and its implications for human decision-making, while the actual means used to kill are conventional. This implies that neither the practice of using AWS nor the weapons systems themselves are as clearly defined as those cases discussed in this chapter (see also Rosert and Sauer 2021).

Overall, the developments described in this chapter show the struggle to establish what Garcia (2015, 55) calls 'humanitarian security regimes', which are defined as 'regimes driven by altruistic imperatives aiming to prohibit and restrict behaviour, impede lethal technology, or ban categories of weapons through disarmament treaties, and centrally embracing humanitarian perspectives that seek to prevent civilian casualties, precluding harmful behaviour, and protecting and guaranteeing the rights of victims and survivors of armed violence'. Garcia argues here that three conditions have an impact on whether humanitarian security regimes emerge: marginalisation and delegitimisation, multilevel agency in terms of state and non-state activities, and reputational concerns.

Indeed, the historical cases show that these conditions can contribute to the emergence of legal and normative regimes making specific weapons illegal and illegitimate. However, Garcia (2015, 73) also posits that '[f]or the other emerging humanitarian regimes, namely those relating to nuclear weapons, to depleted uranium and other toxic remnants of war, and to the use of explosive weapons in populated areas, incendiary weapons and killer robots, there is either no recent use or no use at all. This will make the work of activists and champion states substantially harder'.

This underlines the difficulties in discussing or even promoting the prohibition of AWS as weapons systems whose definition and therefore existence is, in fact, contested. Nevertheless, it should be considered that the use or non-use of weapons is not exclusively influenced by formal considerations, as important as the treaties described in this chapter are. The perspective on norms we take throughout this book can shed more light on the question of what the inclusion of autonomy in weapons systems means for international standards influencing their development and deployment.