

International humanitarian law-making and new military technologies

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Abstract

Military technology has developed rapidly in recent years, and this development challenges existing norms. It has produced countless debates about the application of international humanitarian law (IHL) to areas of war and technology including cyber military operations, military artificial intelligence (including autonomous weapons), the use of drones, and military human enhancement. Despite these rapid progressions, the prospect of creating new treaties to specifically regulate their use by militaries and in armed conflicts is very low. This is largely due to the unequal allocation of military technology among States and the differing interests that result from this inequality. The absence of formal regulation means that State and non-State actors are increasingly embracing informal means of law-making. This is similar to other areas of IHL, such as the regulation of asymmetric conflicts, where norms are contested. In such cases, State and non-State actors employ various informal law-making techniques to advance their normative positions through treaty interpretation and the identification of customary international law.

However, the discussion on military technology differs from other contemporary IHL debates. First, due to the rapid development of such technology and uncertainty about how it will be employed in practice, the interests of the various actors are less clear. Second, there are significant challenges in obtaining accurate information about new military technologies. This makes even the informal law-making path in the context of new technologies more challenging.

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This paper explores the dynamics of contemporary international law-making as it relates to the regulation of new military technologies. It identifies the main techniques that are used by the relevant actors and explores the common themes among the various debates over military technology, as well as the potential specific challenges in relation to certain technologies.

Keywords: law-making, military technology, IHL, cyber, autonomous weapons.

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Introduction

At the Second Lateran Council in 1139, Pope Innocent II launched an effort to ban the use of the crossbow, which since its development had had a sizeable impact on the battlefield.¹ This push was driven by ethical and political considerations. On the ethical side, the crossbow was presented as a deadly weapon that defied honourable fighting.² On the political side, the crossbow threatened to alter the power imbalance between different classes in society.³ Though Pope Innocent II's effort ultimately failed, it provides a popular – and poignant – reference point in the history of technology, warfare and law. The effort's failure itself demonstrates the real and continuing challenge of regulating new technologies that prove highly effective on the battlefield.⁴ Technological development has, throughout history, played a key role in shaping how armed conflicts are fought,⁵ and has been subject to debates over its regulation.⁶ Today we are facing a new era of technological development that poses significant challenges to the legal regulation of armed conflicts at an unprecedented pace.⁷ This includes various areas of technological development in war, such as cyber warfare, military artificial intelligence (AI) and more specifically lethal autonomous weapons systems (LAWS),⁸ the use of drones, and

- 1 See, e.g., William H. Boothby, *Weapons and the Law of Armed Conflict*, Oxford University Press, Oxford, 2009, p. 9.
- 2 Shane R. Reeves and William J. Johnson, "Autonomous Weapons: Are You Sure Those Are Killer Robots? Can We Talk about It?", *Army Lawyer*, Vol. 2014, No. 4, 2014, p. 27.
- 3 Sean Watts, "Regulation-Tolerant Weapons, Regulation-Resistant Weapons and the Law of War", *International Law Studies*, Vol. 91, 2015 (describing political fears regarding the societal revolutionary potential of the crossbow as a reason for the resistance to its use).
- 4 *Ibid.*, p. 568 (describing the failure of the attempts to ban the crossbow due to its effectiveness as a weapon).
- 5 See, e.g., Martin van Creveld, *Technology and War: From 2000 B.C. to the Present*, revised and expanded ed., Free Press, New York, 2010; Max Boot, *War Made New: Technology, Warfare and the Course of History, 1500 to Today*, Gotham Books, New York, 2006; William H. McNeill, *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000*, University of Chicago Press, Chicago, IL, 1982.
- 6 For a critical historical account of the attempts to regulate the use of weapons in armed conflict, see Chris af Jochnick and Roger Normand, "The Legitimation of Violence: A Critical History of the Laws of War", *Harvard International Law Journal*, Vol. 35, No. 1, 1994.
- 7 Rain Liivoja, "Technological Change and the Evolution of the Law of War", *International Review of the Red Cross*, Vol. 97, No. 900, 2015, p. 1173.
- 8 Also referred to as autonomous weapons, or as killer robots (by their opponents).

military human enhancement. Most of these areas of technological development have been the subject of continuous, complicated and heated debate over their regulation. These debates are part of the long history of law and technology in war but are also shaped by the current conditions of international law-making and the unique challenges of new technologies. Rather than focusing on a specific technological development, this paper offers a general exploration of the contemporary attempts to regulate new technologies in war.

The paper proceeds as follows. The first part of the paper offers a brief discussion of the development and conditions of formal and informal law-making in armed conflicts. The second part addresses four key features of the contemporary regulation of emerging military technologies. The first is the unique aspects of new technologies and their law-making implications, which include uncertainty regarding the ramifications of these technologies and their future development, the secrecy that surrounds their development and use, and scepticism towards technological development in general. The second is the evolution/revolution debate – namely, whether existing norms are sufficient to address the subject or if new norms, or far-reaching interpretations of existing norms, are needed in response to the challenges posed by new technologies. The third issue, which is at the heart of the discussion, is the form and substance of the new informal law-making processes, describing the participants and law-making techniques that are used in various law-making initiatives. The fourth feature relates to the role of States and non-State actors in the development of international law in the context of emerging military technologies, including the implications of power differences between various actors. Finally, the third part of the article offers some concluding remarks.

Formal and informal law-making and the regulation of armed conflicts

During the last two centuries, modern international humanitarian law (IHL) has gradually developed in an attempt to comprehensively regulate the conduct of the warring parties in armed conflicts. This section focuses on the development of IHL. Its first part describes a shift from regulation through formal sources, mainly treaties, to an increased emphasis on informal development of IHL. The second part examines the development of IHL in the context of new military technologies, following the recent shift to informal regulation.

The rise and decline of formal IHL and the emergence of informal IHL

Modern IHL has been shaped to a large extent by international treaties. From the 1864 Geneva Convention for the Amelioration of the Condition of the Wounded in Armies in the Field to the 1977 Additional Protocols to the four

Geneva Conventions of 1949, IHL treaties have been central in efforts to regulate warfare.⁹

Nonetheless, IHL treaty law is dependent on the ability of States to agree on norms and how they should be articulated and inform regulation. In traditional international armed conflicts between States, the interests of the parties to those conflicts are often similar, and thus it was possible to create a significant body of treaty law that applies to those conflicts.¹⁰ In contrast, where there are significant differences in the interests of the parties to a conflict or where there is significant difference in the law-making capacity of different actors, the creation of treaty law is much more challenging. Differing interests often exist when there are significant power differences between the parties, providing conflicting incentives for the regulation of warfare – often, powerful States have incentives to favour a less restrictive regime that enables them to take full advantage of their capabilities, while weaker states favour a more restrictive regulation that can potentially mitigate the power imbalance. With regard to law-making capacity, States are the primary law-makers in international law, and this allows them to create rules that favour themselves in their armed conflicts with non-State armed groups. As a result, there are significant gaps in the regulation of some areas of armed conflicts that include such differences. Most notably, non-international armed conflicts are severely under-regulated under existing treaty law. In addition, the ability of existing treaty law to adequately address questions regarding new phenomena, such as new military technologies, where significant power differences exist, is limited.

More generally, in the last few decades there has been a significant decline in the role of treaties in the regulation of armed conflicts. The 1977 Additional Protocols were the last formal, multilateral effort to regulate general conduct-of-hostilities rules. Indeed, most contemporary conflicts involve contrasting interests between relevant actors which pose significant obstacles for the creation of new treaties. For example, transnational armed conflicts between States and non-State armed groups often involve significant power differences between the parties to the conflict as well as gaps in the law-making capacity of those parties. As a result, there is general agreement that the prospect of creating new treaties to regulate the conduct of hostilities is low.¹¹

9 Steven Ratner, “War/Crimes and the Limits of the Doctrine of Sources”, in Samantha Besson and Jean d’Aspremont (eds), *The Oxford Handbook on the Sources of International Law*, Oxford University Press, Oxford, 2018, p. 916.

10 There are clearly exceptions to this tendency even in inter-State conflicts, mainly in relation to power differences between States. The paradigmatic example is the emergence of the Martens Clause as a result of such power differences: see Rotem Giladi, “The Enactment of Irony: Reflections on the Origins of the Martens Clause”, *European Journal of International Law*, Vol. 25, No. 3, 2014.

11 See, e.g., Tara Smith, “Critical Perspectives on Environmental Protection in Non-International Armed Conflict: Developing the Principles of Distinction, Proportionality and Necessity”, *Leiden Journal of International Law*, Vol. 32, No. 4, 2019, p. 761; Knut Dörmann, “The Role of Nonstate Entities in Developing and Promoting International Humanitarian Law”, *Vanderbilt Journal of Transnational Law*, Vol. 51, No. 3, 2018, p. 714; Yoram Dinstein, “The Recent Evolution of the International Law of Armed Conflict: Confusions, Constraints, and Challenges” *Vanderbilt Journal of Transnational Law*, Vol. 51, No. 3, 2018, p. 708; John B. Bellinger III and Vijay M. Padmanabhan, “Detention Operations

Soft-law literature has long identified that when the negotiating costs of formal rules are high, soft-law initiatives become much more attractive.¹² This is true not only for soft law in the strict sense but for informal law-making more generally.¹³ There is no formal definition of informal law-making¹⁴ – in fact, informal law-making addresses phenomena that are often addressed by scholars and practitioners using other terms, such as soft law or legal interpretation. Informality can relate to the outputs, the process and/or the actors that contribute to the law-making initiatives.¹⁵ This paper assumes a wide definition of informal law-making that encompasses any non-binding text which intends to shape international law. This includes informal law-making by States and a broad spectrum of non-State actors, as well as multilateral and unilateral initiatives such as experts' manuals and like-minded States' positions. This follows a broad, informal approach to the sources of international law, and in particular IHL.¹⁶

Thus, the decline of the formal law-making process due to the above-mentioned challenges incentivizes various interested actors to use informal processes in which these actors advance their normative positions. While not enjoying formal status, informal regulation is a much more feasible path and has the capacity to significantly influence international law. In the last few decades, various informal IHL law-making initiatives have emerged. These include soft-law initiatives such as the Copenhagen Process on the Handling of Detainees in International Military Operations;¹⁷ International Committee of the Red Cross (ICRC) initiatives such as the ICRC Customary Law Study and the *Interpretive Guidance on Direct Participation in Hostilities* (ICRC Interpretive Guidance);¹⁸ joint political declarations such as the Safe Schools Declaration¹⁹ and the draft Political Declaration on Strengthening the Protection of Civilians from the

in Contemporary Conflicts: Four Challenges for the Geneva Conventions and Other Existing Law", *American Journal of International Law*, Vol. 105, No. 2, 2011, p. 205; Yahli Shereshevsky, "Back in the Game: International Humanitarian Law-Making by States", *Berkeley Journal of International Law*, Vol. 37, No. 1, 2019, p. 10.

12 Kenneth W. Abbott and Duncan Snidal, "Hard and Soft Law in International Governance", *International Organization*, Vol. 54, No. 3, 2000.

13 Y. Shereshevsky, above note 11.

14 See, e.g., Nico Krisch, "The Decay of Consent: International Law in an Age of Global Public Goods", *American Journal of International Law*, Vol. 108, No. 1, 2014; Joost Pauwelyn, Ramses A. Wessel and Jan Wouters (eds), *Informal International Lawmaking*, Cambridge University Press, Cambridge, 2012; Anthony Aust, "The Theory and Practice of Informal International Instruments", *International and Comparative Law Quarterly*, Vol. 35, No. 4, 1986.

15 J. Pauwelyn, R. A. Wessel and J. Wouters (eds), above note 14.

16 S. Ratner, above note 9, pp. 913–914.

17 *The Copenhagen Process on the handling of Detainees in International Military Operation: Principles and Guidelines*, 2012, available at: <https://ihl.org/wp-content/uploads/2018/04/Copenhagen-Process-Principles-and-Guidelines.pdf>.

18 Jean-Marie Henckaerts and Louise Doswald-Beck (eds), *Customary International Humanitarian Law*, Vol. 1: *Rules*, Cambridge University Press, Cambridge, 2005 (ICRC Customary Law Study), available at: <https://ihl-databases.icrc.org/customary-ihl/eng/docs/home>; Nils Melzer, *Interpretive Guidance on Direct Participation in Hostilities*, ICRC, Geneva, 2005 (ICRC Interpretive Guidance), available at: www.icrc.org/en/doc/assets/files/other/icrc-002-0990.pdf.

19 The Safe Schools Declaration is a non-binding declaration that was developed in a process led by Norway and Argentina. It is available at: www.regjeringen.no/globalassets/departementene/ud/vedlegg/utvikling/safe_schools_declaration.pdf.

Humanitarian Consequences Arising from the Use of Explosive Weapons in Populated Areas;²⁰ experts' manuals such as the *Oslo Manual on Select Topics of the Law of Armed Conflict*,²¹ the *HPCR Manual on International Law Applicable to Air and Missile Warfare*²² and the *San Remo Manual on International Law Applicable to Armed Conflicts at Sea*,²³ and State initiatives such as the *US Law of War Manual*,²⁴ the *Military Manual on International Law Relevant to Danish Armed Forces in International Operations*²⁵ and the Israeli report on the 2014 Gaza Conflict.²⁶ It is therefore not surprising that IHL scholarship has demonstrated growing interest in such processes in recent years.²⁷

One partial exception to the tendency to embrace informal law-making remains the regulation of weapons.²⁸ In the last three decades, several formal treaties regulating the use of specific weapons under IHL have been created. These include treaties that prohibit the use of blinding laser weapons,²⁹ anti-personnel mines,³⁰ cluster munitions³¹ and nuclear weapons.³² Interestingly, the regulation of weapons is the clearest example of the regulation of technologies under the laws of armed conflict. In order to appreciate the promise of weapons regulation, it is important to take a step back and address the broad question of such regulation beyond these three specific examples.

The regulation of weapons under the laws of armed conflict is divided into general customary norms and prohibitions of specific weapons. Under general

- 20 Government of Ireland, "Draft Political Declaration on Strengthening the Protection of Civilians from the Humanitarian Consequences arising from the use of Explosive Weapons in Populated Areas", 2 March 2022, available at: <https://reliefweb.int/report/world/draft-political-declaration-strengthening-protection-civilians-humanitarian>.
- 21 Yoram Dinstein and Arne Willy Dahl, *Oslo Manual on Select Topics of the Law of Armed Conflict*, Springer, Cham, 2020.
- 22 Program on Humanitarian Policy and Conflict Research at Harvard University, *HPCR Manual on International Law Applicable to Air and Missile Warfare*, Cambridge University Press, Cambridge, 2013.
- 23 Louise Doswald-Beck (ed.), *San Remo Manual on International Law Applicable to Armed Conflicts at Sea*, Cambridge University Press, Cambridge, 1995.
- 24 Department of Defense, *Law of War Manual*, 2016 (updated version), available at: <https://tinyurl.com/yctsefz>.
- 25 Danish Ministry of Defence, *Military Manual on International Law Relevant to Danish Armed Forces in International Operations*, Defense Command Denmark, Copenhagen, 2020, available at: <https://mfa.gov.il/ProtectiveEdge/Documents/2014GazaConflictFullReport.pdf>.
- 26 State of Israel, *The 2014 Gaza Conflict Report: Factual and Legal Aspects*, May 2015, available at: <https://mfa.gov.il/ProtectiveEdge/Documents/2014GazaConflictFullReport.pdf>.
- 27 Emily Crawford, *Non-Binding Norms in International Humanitarian Law*, Oxford University Press, Oxford, 2022; Heike Krieger and Jonas Püschmann (eds), *Law-Making and Legitimacy in International Humanitarian Law*, Edward Elgar, Northampton, 2021; Y. Shereshevsky, above note 11; Sandesh Sivakumaran, "Making and Shaping the Law of Armed Conflict", *Current Legal Problems*, Vol. 71, No. 1, 2018.
- 28 K. Dörmann, above note 11, p. 714.
- 29 Protocol IV (Protocol on Blinding Laser Weapons) to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons which May Be Deemed to Be Excessively Injurious or to have Indiscriminate Effects, 1380 UNTS 370, 13 October 1995.
- 30 Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction, 2056 UNTS 211, 18 September 1997.
- 31 Convention on Cluster Munitions, 2688 UNTS 39, 30 May 2008.
- 32 Treaty on the Prohibition of Nuclear Weapons, UN Doc A/CONF.229/2017/8, 7 July 2017, available at: www.icanw.org/tpnw_full_text.

customary law, the use of weapons that cause superfluous injury and unnecessary suffering and the use of indiscriminate weapons are prohibited.³³ The prohibitions on specific weapons include several treaties that address various categorizations of weapons.³⁴

The distinction between these two types of regulation is closely related to the general notion of technology-neutral and technology-specific regulation.³⁵ Technology-neutral regulation addresses technological challenges broadly, with the aim that “the law will apply effectively and fairly in different technological contexts”.³⁶ In contrast, technology-specific regulation focuses on the challenges of specific technologies. The literature on law and technology features a continuous discussion on the advantages and disadvantages of regulating new technology through a focus on specific technologies. Some authors have addressed these considerations in the context of new technologies in war,³⁷ but in practical terms, the distinction between the two types of regulation seems less relevant to weapons law. The regulation of weapons is one of the most challenging areas of the law of armed conflict, and it often faces very limited success in relation to general prohibitions.³⁸ As the three examples above demonstrate, the heart of contemporary weapons law is found in treaties that address specific weapons.

In this context, it is important to consider possible explanations for the ability to create new weapons treaties. Sean Watts offers a distinction between regulation-tolerant and regulation-resistant weapons.³⁹ He identifies several factors, including effectiveness, novelty, deployment, medical compatibility, disruptiveness and notoriety, as being important in the ability to regulate weapons. Watts recognizes that the history of the regulation of weapons does not provide perfect coherence and consistency in relation to the effect of the various factors. For example, of the four recent successful attempts to regulate weapons, one involves the regulation of a new weapon that has not yet been deployed

33 Protocol Additional (I) to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts, 1125 UNTS 3, 8 June 1977 (entered into force 7 December 1978), Art. 35.

34 See, e.g., the prohibitions on blinding laser weapons, anti-personnel mines, cluster munitions and nuclear weapons cited in above notes 29–32.

35 See, e.g., Paul Ohm, “The Argument against Technology-Neutral Surveillance Laws,” *Texas Law Review*, Vol. 88, No. 7, 2010; Lyria Bennett Moses, “Recurring Dilemmas: The Law’s Race to Keep Up with Technological Change,” *University of Illinois Journal of Law, Technology and Policy*, Vol. 2007, No. 2, 2007.

36 L. Bennett Moses, above note 35, p. 270.

37 Rebecca Crotoft, “Regulating New Weapons Technology”, in Ronald T. P. Alcalá and Eric Talbot Jesnen (eds), *The Impact of Emerging Technologies on the Law of Armed Conflict*, Oxford University Press, Oxford, 2019, pp. 15–17; R. Liivoja, above note 7, pp. 1168–1171.

38 See, e.g., David Turns, “Weapons in the ICRC Study on Customary International Humanitarian Law”, *Journal of Conflict & Security Law*, Vol. 11, No. 2, 2006, pp. 211–212 (suggesting that there are very few examples in which the general principle had an impact on positions of States regarding the legality of weapons). For a general critical look on the historical regulation of weapons, see C. af Jochnick and R. Normand, above note 6 (suggesting that, in many cases, the banning of specific weapons is a direct result of the limited military effectiveness of those weapons).

39 S. Watts, above note 3.

(blinding laser weapons), and three involve weapons that were deployed and had been created several decades before the treaty (anti-personnel mines, cluster munitions and nuclear weapons).⁴⁰ Other commentators emphasize different factors relating to the aforementioned examples, including the cooperation of NGOs and certain States in promoting the treaty process.⁴¹

Nonetheless, there is one factor that according to Watts is key for the ability to regulate weapons: effectiveness. The more important a specific weapon is to the fighting force that uses it, the more difficult it is to impose significant limitations on the weapon's use. In addition, it seems that unequal distribution of a weapon, or differences in the relative importance of a weapon for particular States, creates significant obstacles for the ability to reach a general agreement on the weapon's regulation. For example, even the relatively successful initiatives to ban anti-personnel mines and cluster munitions do not enjoy the support of major powers such as the United States and China.⁴²

The emergence of informal IHL on new military technologies

The various aspects discussed in the previous section on the general development of IHL shed light on the contemporary regulation of new military technologies. The discussion on new military technologies is relevant to the general regulation of the conduct of hostilities as well as to the specific discussion over the regulation of new weapons. The debate over the use of LAWS, for example, includes discussions regarding a potential ban on their development and production, as well as debates over their actual use during armed conflicts. Currently, there are several institutional inter-State processes in relation to new technologies, most notably the UN Group of Governmental Experts on Advancing Responsible State Behaviour in Cyberspace in the Context of International Security (UN GGE), the Open-Ended Working Group on Security of and in the Use of Information and Communications Technologies (OEWG) and the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems (GGE on LAWS). These are platforms for discussion on the regulation of these new technologies that could potentially lead to the creation of formal or informal international law.

New technologies often present similar challenges to conduct-of-hostilities issues, as they do in other cases that exhibit conflicts of interests between relevant actors. New technologies are not distributed equally and thus create a potential clash of interests between those who are expected to benefit from their use and those who have much to lose from it. As a result, despite some calls for new regulation dealing with the use of contemporary technologies in armed conflicts,

40 Liivoja calls these types of weapons “newly controversial”: R. Liivoja, above note 7, p. 1175.

41 See, e.g., Margarita H. Petrova, “Naming and Praising in Humanitarian Norm Development”, *World Politics*, Vol. 71, No. 3, 2019; M. Patrick Cottrell, “Legitimacy and Institutional Replacement: The Convention on Certain Conventional Weapons and the Emergence of the Mine Ban Treaty”, *International Organization*, Vol. 63, No. 2, 2009.

42 See S. Watts, above note 3, pp. 584, 594.

there are no treaties that are dedicated specifically to such regulation. Moreover, it seems that in addition to the unequal distribution of technologies such as cyber capabilities and AI, such technologies have the potential to be extremely important to the effectiveness of military campaigns.⁴³ Under these conditions, it is not surprising that there is currently much reluctance to address the issue in the context of weapons law as well. Just recently, an attempt to ban the use of LAWS failed at the Convention on Conventional Weapons (CCW) Review Conference.⁴⁴ While some authors and NGOs believe that it is possible to promote a treaty – similar to those for anti-personnel mines and cluster munitions – outside the CCW’s institutional context,⁴⁵ LAWS, as well as other new technologies, are much more central to contemporary warfare and such attempts will likely face significant challenges. In any case, such attempts are expected to take time, and several powerful States that invest in these technologies are not expected to join a treaty. Under such circumstances, it is unlikely that comprehensive new treaties on emerging military technologies will be created,⁴⁶ and informal regulation of IHL is thus a key avenue for debate over the regulation of such technologies.⁴⁷ The form and substance of such informal regulation of IHL will be further discussed below.

Main features of emerging military technologies and international law-making

The observation that IHL has shifted towards informal regulation of new military technologies is only the starting point of the discussion. Such regulation includes various features that require scholarly attention. This section briefly identifies and addresses key features of the regulation of new military technologies. These are: (1) the unique features of new military technologies that distinguish them from other areas of contemporary debate over the regulation of IHL; (2) the evolution or revolution question, focusing on the extent to which existing laws can adequately address technological change; (3) the form and substance of informal IHL of new military technologies, including the “micro-processes” of informal

43 See, e.g., Jacquelyn Schneider, “The Capability/Vulnerability Paradox and Military Revolutions: Implications for Computing, Cyber, and the Onset of War”, *Journal of Strategic Studies*, Vol. 42, No. 6, 2019; Benjamin M. Jensen, Christopher Whyte and Scott Cuomo, “Algorithms at War: The Promise, Peril, and Limits of Artificial Intelligence”, *International Studies Review*, Vol. 22, No. 3, 2019.

44 Kasmira Jefford, “What Next for Talks on Regulating ‘Killer Robots?’”, *Geneva Solutions*, 21 December 2021, available at: <https://genevasolutions.news/global-news/what-next-for-talks-on-regulating-killer-robots>.

45 Charli Carpenter, “A Better Path to a Treaty Banning ‘Killer Robots’ Has Just Been Cleared”, *World Politics Review*, 7 January 2022, available at: www.worldpoliticsreview.com/articles/30232/a-better-path-to-a-treaty-banning-ai-weapons-killer-robots; Human Rights Watch, “Killer Robots: Military Powers Stymie Ban”, 19 December 2021, available at: www.hrw.org/news/2021/12/19/killer-robots-military-powers-stymie-ban.

46 Michael N. Schmitt and Sean Watts, “The Decline of International Humanitarian Law *Opinio Juris* and the Law of Cyber Warfare”, *Texas International Law Journal*, Vol. 50, No. 2, 2015, pp. 222.

47 Yahli Shereshevsky, “Are All Soldiers Created Equal? On the Equal Application of the Law to Enhanced Soldiers”, *Virginia Journal of International Law*, Vol. 61, No. 2, 2021, pp. 276–277.

IHL-making and the various techniques that international actors use to promote their legal position; and (4) the nuanced relationship between States and non-State actors in the informal development of the regulation of new military technologies, including the role and impact of power differences in such processes.

Unique features of new military technologies

Much of the discussion in this paper is relevant to law-making and IHL in general, rather than exclusively to emerging military technologies. Nonetheless, there are some features that are especially relevant in the context of new technologies. Some of those features are relevant to all emerging technologies and some are relevant to specific technologies. This section focuses on two issues that are common to many emerging military technologies and have an impact on their regulation: the first is uncertainty and secrecy, and the second is technological scepticism. Issues that are relevant to specific technologies are briefly addressed in the next section.

Uncertainty and secrecy

Emerging military technologies involve significant uncertainty in relation to their current implications as well as their potential future development.⁴⁸ At a relatively early stage in their development and deployment, the full potential impacts of such technologies are often not yet fully understood.⁴⁹ In the case of LAWS, for example, there is currently much uncertainty regarding the ability to design such systems with sufficient predictability and understandability.⁵⁰ Such uncertainty significantly affects the willingness and ability of States and other actors to commit to strong legal positions, when their current and future interests are not fully clear. In addition, in many cases secrecy surrounds the development and use of emerging technologies. States may not want to openly reveal their capabilities or to take responsibility for the development, use and as-yet-unknown effects of emerging technologies.⁵¹ This secrecy further complicates the ability of State and non-State actors to fully grasp the potential implications of such technologies and the legal solutions for the concerns that they raise.⁵²

There are three main implications that stem from the uncertainty and secrecy of emerging military technology. First, as several authors suggest, secrecy and uncertainty at least partially explain the reluctance of various States to

48 Steven Ratner, "Persuasion About/Without International Law: The Case of Cybersecurity Norms", in Ian Johnstone and Steven Ratner (eds), *Talking International Law*, Oxford University Press, Oxford, 2021, pp. 109–110; R. Crootof, above note 37, p. 21.

49 R. Crootof, above note 37, p. 21.

50 See Arthur Holland Michel, "In the Debate over Autonomous Weapons, It's Time to Unlock the 'Black Box' of AI", *Bulletain of Atomic Scientists*, 16 October 2020, available at: <https://thebulletin.org/2020/10/ban-regulate-or-do-nothing-the-debate-over-ai-weapons-and-one-path-forward/>.

51 S. Ratner, above note 48, p. 111; M. N. Schmitt and S. Watts, above note 46, pp. 210–211.

52 M. N. Schmitt and S. Watts, above note 46, p. 210.

express their positions on the laws that govern emerging military technologies.⁵³ As further discussed in the section below on “The Form and Substance of Informal IHL of New Military Technologies”, this tendency seems to be shifting in recent years, at least in relation to cyber warfare and LAWS.

Second, secrecy and uncertainty can affect the timing of law-making efforts. It is reasonable to suggest that law-making initiatives with regard to emerging technologies should take place when there is more clarity about the effects and future development of the technology, thus leading to a “wait and see” approach to the regulation of emerging technologies.⁵⁴ Nonetheless, when emerging technologies pose new and significant risks, as is often the case, there is a considerable price associated with adopting such an approach. One of those risks is, of course, that of deploying such technologies without adequate regulation, but well before that stage, other risks emerge: the longer States wait to regulate the technology, the more they will invest in its development, and the less likely they will then be to agree to restrictive regulation. Alternatively, it is possible to push for a precautionary ban on the technology or for pre-emptive regulation.⁵⁵ From a humanitarian perspective, an active approach to the regulation of these technologies, even if premature, seems to be the preferred approach, given the significant danger of the abuse of the under-regulation of specific technology by interested States. It is therefore not surprising that non-State actors are often the first to push for the regulation of emerging military technologies.

Third and finally, if an immediate law-making effort should indeed take place, the dynamic nature of emerging technologies might strengthen the justification to employ informal law-making strategies that allow greater flexibility and easier paths to accommodation and change.⁵⁶

Technological scepticism and law-making

While uncertainty and secrecy have implications for the participation, timing and form of law-making initiatives, technological scepticism primarily affects the substance of normative debates. At its core, IHL aims to balance two principles – military necessity and humanitarian considerations – which, though sometimes mutually reinforcing, often find themselves in tension. In such cases of tension, the IHL community is often divided between the so-called military lawyers and humanitarian lawyers.⁵⁷ To a large extent this divide, similar to other international law controversies, could be framed as an issue of trust. The more a person trusts the genuine willingness of States to apply the law in good faith, the

53 S. Ratner, above note 48, pp. 109–111; Kubo Macák, “From Cyber Norms to Cyber Rules: Re-engaging States as Law-Makers”, *Leiden Journal of International Law*, Vol. 30, No. 4, 2017, pp. 881–882; M. N. Schmitt and S. Watts, above note 46, pp. 223–224.

54 R. Crootof, above note 37, pp. 21–22.

55 *Ibid.*, pp. 22–25.

56 Rebecca Crootof, “Jurisprudential Space Junk: Treaties and New Technologies”, in Chiara Giorgetti and Natalie Klein (eds), *Resolving Conflicts in the Law*, Brill Nijhoff, Leiden, 2019.

57 David Luban, “Military Necessity and the Cultures of Military Law”, *Leiden Journal of International Law*, Vol. 26, No. 2, 2013.

more they will tend to belong to the military necessity camp, and vice versa. In the context of new technologies in war, another factor should be taken into account: the potential divide between those who are sceptical about new technologies, on the one hand, and those who look favourably upon technological progress, on the other. This is also a question of trust, and it will be interesting to explore a potential connection between trust in state behaviour and trust in new technologies.

New technologies can both positively and negatively impact the current state of affairs. Taking LAWS as an example, they pose significant concerns regarding, *inter alia*, unpredictability,⁵⁸ meaningful human control,⁵⁹ responsibility⁶⁰ and “PlayStation mentality”.⁶¹ But LAWS may also be more accurate than alternative weapons, do not suffer from the negative consequences of emotions such as anxiety and fear on the battlefield, and more generally could recognize the nature of a targeted object more reliably than humans and thus reducing suffering in warfare.⁶² However, looking at the contemporary debates over new technologies, it seems that a significant part of the focus is on the dangers of such technologies rather than their promise.⁶³

A potential explanation for the emphasis on concerns regarding new technologies is the prominence of scepticism or fear of new technologies, especially military technologies. Scepticism towards new technologies and its potential regulatory impact are well recognized, even beyond the military context.⁶⁴ There are a variety of potential explanations for fear or scepticism towards technology,⁶⁵ and such scepticism is expected to be greater in the context of new technologies in war, where life and death are on the line. Fear of

58 ICRC, *ICRC Position on Autonomous Weapon Systems*, Geneva, May 2021 (ICRC AWS Position), p. 7, available at: www.icrc.org/en/download/file/166330/icrc_position_on_aws_and_background_paper.pdf.

59 Vincent Boulanin, Moa Peldán Carlsson, Netta Goussac and Neil Davison, *Limits on Autonomy in Weapon Systems: Identifying Practical Elements of Human Control*, ICRC and SIPRI, June 2020, available at: www.sipri.org/sites/default/files/2020-06/2006_limits_of_autonomy.pdf.

60 See, e.g., Russell Buchan and Nicholas Tsagourias, *Autonomous Cyber Weapons and Command Responsibility*, *International Law Studies*, Vol. 96, 2020; Rebecca Crootof, “War Torts: Accountability for Autonomous Weapons”, *University of Pennsylvania Law Review*, Vol. 164, No. 6, 2016; Jack M. Beard, “Autonomous Weapons and Human Responsibilities”, *Georgetown Journal of International Law*, Vol. 45, No. 3, 2014, p. 676.

61 Marco Sassóli, “Autonomous Weapons and International Humanitarian Law: Advantages, Open Technical Questions and Legal Issues to be Clarified”, *International Law Studies*, Vol. 90, 2014, p. 317 (referring to the “Game Boy mentality” of the manufacturers).

62 See generally, Eric Talbot Jensen, “The (Erroneous) Requirement for Human Judgment (and Error) in the Law of Armed Conflict”, *International Law Studies*, Vol. 90, 2020.

63 While it is very challenging to demonstrate this argument through a comprehensive survey of the entire body of literature on new technologies in war, a useful example is States’ positions on the regulation of LAWS in which a majority of States emphasized the dangers of LAWS while only a minority discussed their potential positive effects. See Human Rights Watch, *Stopping Killer Robots – Country Positions on Banning Fully Autonomous Weapons and Retaining Human Control*, 2020, available at: www.hrw.org/sites/default/files/media_2021/04/arms0820_web_1.pdf.

64 See Steve Calandrillo and Nolan Kobuke Anderson, “Terrified by Technology: How Systemic Bias Distorts Legal and Regulatory Responses to Emerging Technology”, *University of Illinois Law Review*, Vol. 2022, No. 2, 2022; Dan M. Kahan, “Two Conceptions of Emotion in Risk Regulation”, *University of Pennsylvania Law Review*, Vol. 156, No. 3, 2008.

65 S. Calandrillo and N. Kobuke Anderson, above note 64.

technology is well documented⁶⁶ and is well represented in popular culture⁶⁷ (although such culture also includes, for example, favourable treatment of enhanced soldiers such as Captain America and Wolverine⁶⁸). As a result, there is a strong concern that scepticism towards new technologies might lead to suboptimal regulation, such as a ban on the use of LAWS or enhanced soldiers, even if those technologies can lead to better protection of civilians. There is also potentially the opposite risk that technology enthusiasts might not fully appreciate the costs of emerging military technologies, also leading to suboptimal regulation that does not limit the use of emerging technologies enough – for example, by being overly optimistic about the potential performance of military technologies on an uncontrolled, actual battlefield. However, as mentioned, it seems that the contemporary debate includes more representation of the perils than of the promises of such technologies.

There is no doubt that emerging military technologies present enormous risks that should be carefully considered in any law-making effort. It is an extremely challenging task to differentiate between justified concerns and unsubstantiated fears. Nonetheless, law-making efforts should recognize the potential adverse effect of fear of new technologies and should invest in careful assessment of the costs and benefits of such technologies. It would be helpful if the costs and benefits were acknowledged by both sides of the normative debate over the regulation of armed conflicts.

Evolution or revolution of IHL?

In major debates regarding new phenomena in warfare, there is continuous discussion regarding the adequacy of existing norms in addressing the new challenges involved.⁶⁹ Similar discussions exist in relation to new technologies and international law beyond the context of armed conflicts,⁷⁰ and they are likewise central features in debates over new technologies in war such as cyber warfare and LAWS.⁷¹

All sides of these debates agree that the law needs to accommodate emerging technologies.⁷² The crux of the debate is the ability to address the issue

66 *Ibid.*, pp. 626–628.

67 See, e.g., Daniel Dinello, *Technophobia! Science Fiction Visions of Posthuman Technology*, University of Texas Press, Austin, TX, 2005.

68 For a discussion of the fear of the other in relation to enhanced soldiers in the context of popular culture and its implications, see Y. Shereshevsky, above note 47, pp. 316–317.

69 See, e.g., R. Liivoja, above note 7, pp. 1160–1161; Ganesh Sitaraman, “Counterinsurgency, the War on Terror, and the Laws of War”, *Virginia Law Review*, Vol. 95, No. 7, 2009; Sean D. Murphy, “Evolving Geneva Convention Paradigms in the ‘War on Terrorism’: Applying the Core Rules to the Release of Persons Deemed ‘Unprivileged Combatants’”, *George Washington Law Review*, Vol. 75, No. 5–6, 2007; Roy S. Schöndorf, “Extra-State Armed Conflicts: Is There a Need for a New Legal Regime?”, *New York University Journal of International Law and Politics*, Vol. 37, No. 1, 2005.

70 See, e.g., Yuval Shany and Dafna Dror-Shpoliansky, “It’s the End of the (Offline) World as We Know It: From Human Rights to Digital Human Rights – A Proposed Typology”, *European Journal of International Law*, 2022 (forthcoming).

71 See, e.g., R. Crotofof, above note 37; Kristen Eichensehr, “Cyberwar and International Law Step Zero”, *Texas International Law Journal*, Vol. 50, No. 2, 2015.

72 R. Crotofof, above note 37; K. Eichensehr, above note 71.

using interpretation of existing norms, or alternatively through the creation of new norms. In some cases, the application of existing laws is relatively straightforward. Think, for example, about the application of the principle of distinction to attacks by drones (fully controlled by human operators), compared to attacks by fighter jets. The remote nature of the decision-making does not affect the ability to distinguish between lawful and unlawful targets.⁷³ Other cases, such as the definition of a cyber attack, are more complicated.⁷⁴ It seems that in most cases of emerging military technologies, the majority of issues could be adequately addressed by existing laws, while a limited number of unique features lie at the heart of the debate over the need for new laws.⁷⁵ For example, in the context of LAWS, the notion of meaningful human control and the related issue of responsibility for violations of the law by LAWS constitute the heart of the debate over the application of the law to the use of this emerging military technology.⁷⁶ Another example can be seen in the discussion of whether enhanced soldiers could be defined as weapons, and the implications of such a qualification.⁷⁷

It is important to note that the notion of law-making is broader than the creation of new formal rules. Interpretation, for example, is often an act that creates legal meaning rather than one that only identifies the one “true” meaning of a legal rule.⁷⁸ Similarly, as discussed in the next section, identification of customary norms can also serve as a law-making technique.⁷⁹ Dror-Shpoliansky and Shany offer a typology of the evolution of digital human rights that includes both a radical reinterpretation of existing rights and the development of new

73 Michael N. Schmitt, “Unmanned Combat Aircraft Systems and International Humanitarian Law: Simplifying the Oft Benighted Debate”, *Boston University International Law Journal*, Vol. 30, 2012 (making a similar comparison, stating that “there are very few legal issues unique to [drones]”).

74 See, e.g., Michael N. Schmitt, “Rewired Warfare: Rethinking the Law of Cyber Attack”, *International Review of the Red Cross*, Vol. 96, No. 893, 2014; Oona A. Hathaway, Rebecca Crootof, Philip Levitz and Haley Nix, “The Law of Cyber-Attack”, *California Law Review*, Vol. 100, No. 4, 2012.

75 K. Eichensehr, above note 71 (following Lois Henkin’s famous statement regarding compliance, Eichensehr suggests that “most law-of-war rules apply most of the time to most new technologies”); Rebecca Crootof, “Autonomous Weapon Systems and the Limits of Analogy”, *Harvard National Security Journal*, Vol. 9, No. 2, 2018 (while accepting Eichensehr’s position, Crootof suggests that autonomous weapons raise some aspects that require us to “explicitly revise rules or create entirely new ones”).

76 GGE on LAWS, *Meeting of the High Contracting Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects: Final Report*, UN Doc. CCW/MSP/2019/9, 13 December 2019, Annex III (GGE on LAWS Guiding Principles), available at: <https://undocs.org/CCW/MSP/2019/9>.

77 Rain Liivoja and Luke Chircop, “Are Enhanced Warfighters Weapons, Means, or Methods of Warfare?”, *International Law Studies*, Vol. 94, 2018.

78 Melissa J. Durkee, “Interpretive Entrepreneurs”, *Virginia Law Review*, Vol. 107, No. 3, 2021; Gleider Hernandez, “Interpretive Authority and the International Judiciary”, in Andrea Bianchi, Daniel Peat and Matthew Windsor (eds), *Interpretation in International Law*, Oxford University Press, Oxford, 2015; Ingo Venzke, *How Interpretation Makes International Law*, Oxford University Press, Oxford, 2012, p. 16; Y. Shereshevsky, above note 11, pp. 11–12.

79 Fernando Luca Bordin, “Reflections of Customary International Law: The Authority of Codification Conventions and the ILC Draft Articles in International Law”, *International and Comparative Law Quarterly*, Vol. 63, No. 3, 2014; Monica Hakimi, “Custom’s Method and Process: Lessons from International Humanitarian Law”, in Curtis A. Bradley (ed.), *Custom’s Future: International Law in a Changing World*, Cambridge University Press, Cambridge, 2016, p. 163; Y. Shereshevsky, above note 11, pp. 12–13.

rights as part of their evolution.⁸⁰ Similarly, Rebecca Crootof has discussed alternative possibilities for legal change in the context of emerging military technologies, exploring the advantages and disadvantages of interpretive approaches versus the creation of new rules.⁸¹ My own position is that even if a new technology poses new and challenging issues, it could often be addressed, if necessary, through far-reaching new interpretations of existing norms rather than through the creation of new formal rules. The choice between the two options can be based on the perception that at some point, extremely far-reaching interpretations can be discounted. But the choice is dependent not only on the nature of the normative challenge, but on the political availability of a formal law-making alternative. As mentioned above, the prospect of creating new, formal rules is low. It is therefore expected that interpretation and identification of customary IHL will offer a key law-making path, even when addressing extremely challenging and divisive issues. Alternatively, new norms can also be promoted through non-binding materials that include entirely new norms, such as soft-law initiatives. The form and substance of the various law-making processes is the subject of the next section.

The form and substance of informal IHL of new military technologies

Platforms of informal law-making

There is a wide array of platforms for informal law-making within the context of new technologies. These include the use of manuals such as the seminal *Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations* (Tallinn Manual 2.0),⁸² processes within established institutions such as the UN GGE and the GGE on LAWS, the unilateral law-making initiatives of States and non-State actors such as the ICRC position on autonomous weapons,⁸³ and various positions of States regarding the law of emerging military technologies,⁸⁴ as well as academic scholarship⁸⁵ and non-binding political declarations.

The vast scholarship of informal law-making and especially soft law has significantly contributed to our understanding of the general turn to such

80 Y. Shany and D. Dror-Shpoliansky, above note 70.

81 R. Crootof, above note 37.

82 Michael N. Schmitt (ed.), *Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations*, 2nd ed., Cambridge University Press, Cambridge, 2017 (Tallinn Manual 2.0).

83 ICRC AWS position, above note 58.

84 See, e.g., Roy Schöndorf, "Israel's Perspective on Key Legal and Practical Issues Concerning the Application of International Law to Cyber Operations", *International Law Studies*, Vol. 97, 2021; Michael N. Schmitt, "France Speaks Out on IHL and Cyber Operations: Part I", *EJIL: Talk!*, 30 September 2019, available at: www.ejiltalk.org/france-speaks-out-on-ihl-and-cyber-operations-part-i/; Jeffrey Biller and Michael N. Schmitt, "Un-caging the Bear? A Case Study in Cyber Opinio Juris and Unintended Consequences", *EJIL: Talk!*, 24 October 2018, available at: www.ejiltalk.org/un-caging-the-bear-a-case-study-in-cyber-opinio-juris-and-unintended-consequences/.

85 On the role of academic scholarship in law-making processes, see, generally, Sandesh Sivakumaran, "The Influence of Teachings of Publicists on the Development of International Law", *International and Comparative Law Quarterly*, Vol. 66, No. 1, 2017.

regulation in contemporary armed conflicts. Specifically, the literature on formal and informal law-making offers a theoretical account of the considerations affecting the choice between formal and informal regulation.⁸⁶ These considerations have been discussed in the context of emerging technologies and law.⁸⁷ The informal law-making literature also informs our understanding of the authority and legitimacy of informal initiatives, focusing primarily on the identity and behaviour of the States and non-State actors that are involved and the institutional framework of the initiatives.⁸⁸

Ostensibly, established institutions are the main path for law-making initiatives, with the ideal result of formal rules that govern the issue.⁸⁹ Nonetheless, while the two main institutional platforms on new technologies, the UN GGE and the GGE on LAWS, have a significant role to play in the attempts to regulate new technologies in war, they also reveal two important differences from the traditional path. First, the prospect of reaching an agreement through these processes on hard rules is low, and as mentioned, some suggest that alternative paths may yield better results in terms of formal regulation.⁹⁰ Therefore, they serve mainly as platforms for informal regulation in the form of traditional soft-law principles such as the UN GGE's 2015 report and the Guiding Principles of the GGE on LAWS,⁹¹ as well as written legal positions of States and non-State actors.⁹² Second, such platforms are not always the main law-making path. The UN GGE's limited success has contributed to the emergence of various other law-making initiatives, including statements and position papers by States,⁹³ the Tallinn Manual 2.0,⁹⁴ and the ICRC position paper on LAWS.⁹⁵

“Micro-processes” of informal IHL

Informal law-making initiatives are derived, *inter alia*, from the recognition that when the law is unsettled in a specific area, prominent legal outputs that discuss

86 See, e.g., Gregory Shaffer and Mark Pollack, “Hard and Soft Law”, in Jeremy Dunoff and Mark Pollack (eds), *Interdisciplinary Perspectives on International Law and International Relations*, Cambridge University Press, Cambridge, 2013; Andrew Guzman and Timothy Meyer, “International Soft Law”, *Journal of Legal Analysis*, Vol. 2, No. 1, 2010; K. W. Abbott and D. Snidal, above note 12.

87 S. Ratner, above note 48, p. 117.

88 Emily Crawford, *Non-Binding Norms in International Humanitarian Law*, Oxford University Press, Oxford, 2022; Heike Krieger and Jonas Püschmann (eds), *Law-Making and Legitimacy in International Humanitarian Law*, Edward Elgar, Northampton, 2021; Sandesh Sivakumaran, “Making and Shaping the Law of Armed Conflict”, *Current Legal Problems*, Vol. 71, No. 1, 2018.

89 S. Ratner, above note 48.

90 C. Carpenter, above note 45.

91 UN GGE, *Report of the Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of International Security*, UN Doc. A/70/174, 22 July 2015, available at: www.un.org/ga/search/view_doc.asp?symbol=A/70/174; GGE on LAWS Guiding Principles, above note 76.

92 See, for example, the various State commentaries on the GGE on LAWS Guiding Principles, available at: <https://meetings.unoda.org/section/group-of-governmental-experts-gge-on-emerging-technologies-in-the-area-of-lethal-autonomous-weapons-systems-laws-documents-4929-documents-4947/>.

93 See, e.g., R. Schöndorf, above note 84; M. N. Schmitt, above note 84.

94 Tallinn Manual 2.0, above note 82.

95 ICRC AWS position, above note 58.

the issue have strong potential to shape the law in that area.⁹⁶ Nonetheless, to date, international legal scholarship has paid little attention to what I call here the “micro-processes” of informal international law-making – namely, the variety of factors that are relevant to the authority and legitimacy of informal law-making processes. It is important to consider the various techniques that the relevant actors use to enhance the authority and legitimacy of their law-making initiatives. These micro-processes include the type of legal argument that is employed to advance an informal law-making initiative as well as the form of the initiative itself. I started to explore these factors in a previous work that relates to informal IHL law-making initiatives which are separate from issues relating to emerging technologies.⁹⁷

Type of legal argumentation

As regards the type of legal argument, very often the law-making initiative is presented as a mere representation of existing law rather than a pure aspirational project regarding future regulation of the issue. This is achieved through either treaty interpretation or identification of customary law as creative ways to advance a novel legal argument. Reliance on existing law is highly attractive for such initiatives since in this way, the initiative benefits from the authority of existing law and has greater potential to influence the international law community. This was done, for example, with the Tallinn Manual 2.0, in which the Manual claims that it

is meant to be a reflection of the law as it existed at the point of the Manual’s adoption by the two International Groups of Experts in June 2016. It is not a “best practices” guide, does not represent “progressive development of the law”, and is policy and politics-neutral. In other words, Tallinn Manual 2.0 is intended as an objective restatement of the *lex lata*. Therefore, the experts involved in both projects assiduously avoided including statements reflecting *lex ferenda*.⁹⁸

In this way, the Manual achieves the benefits of the authority of existing law while being able to recognize the informal nature of the project.⁹⁹ Such forms of legal argumentation are also used by States – for example, Australia’s recent submission to the UN GGE states that “existing treaties and customary international law provide a comprehensive and robust framework to address the threats posed by state-generated or sponsored malicious cyber activity”.¹⁰⁰ Such reliance on treaty interpretation as a law-making technique was recently described by Melissa J. Durkee as “*post hoc* law-making”, a phenomenon that focuses on international law-making initiatives outside of the context of armed conflicts.¹⁰¹

96 Y. Shereshevsky, above note 11.

97 *Ibid.*

98 Tallinn Manual 2.0, above note 82, pp. 2–3.

99 *Ibid.*, p. 2.

100 Australian Government, “Australia’s Submission on International Law to Be Annexed to the Report of the 2021 Group of Governmental Experts on Cyber”, available at: <https://tinyurl.com/58rhswsd>.

101 M. J. Durkee, above note 78.

Other initiatives are more modest in their claims about the legal authority of their text. For example, a recent report by the ICRC entitled *Avoiding Civilian Harm from Military Cyber Operations during Armed Conflict* (Civilian Harm Report) is articulated as a best practices guide for the application of well-established hard law regarding the protection of civilians in armed conflict.¹⁰² Another example is the ICRC position paper on LAWS, which explicitly states that its aim is that its position will lead to the adoption of “new legally binding rules”.¹⁰³ The approach of the ICRC in this regard is interesting, since previous IHL initiatives such as the ICRC Customary Law Study and ICRC Interpretive Guidance have relied on treaty interpretation and the identification of customary law.¹⁰⁴

Techniques to enhance the accessibility and authority of informal law-making initiatives

The best-case scenario for an informal law-making initiative is to become a focal point of reference in any discussion about the relevant rules.¹⁰⁵ The clearest example for such a case is the ICRC Customary Law Study, which is the focal point of reference in any discussion of customary IHL. In the context of new technologies, the Tallinn Manual 2.0 is clearly the most prominent informal law-making initiative, but its success in becoming the focal point of reference is controversial.¹⁰⁶ There are often several accounts of the law that compete to prevail in the legal debate, even after a specific initiative, such as the Tallinn Manual, has reached a central position. The form of the informal initiatives intends to increase the persuasive power of the initiatives compared to potential competing accounts of the law. It is interesting to note that States and non-State actors often use similar persuasion techniques in their law-making initiatives. These include mostly techniques that aim to increase the centrality and legitimacy of the initiatives.

In the broader discussion on informal IHL, States and non-State actors use various techniques to increase the accessibility of their positions, including the choice of language (mostly English), open access online, and presentation at international conferences and special academic events. In addition, they use various techniques to increase the legitimacy and authority of their texts. These techniques are mainly intended to strengthen the perceived neutrality and legal soundness of the position. For this purpose, the initiatives try to demonstrate a wide participation of States and relevant experts in the drafting process, and often use a quasi-academic form including in-depth legal reasoning, the use of

102 Ewan Lawson and Kubo Macák, *Avoiding Civilian Harm from Military Cyber Operations during Armed Conflicts: ICRC Expert Meeting, 21–22 January 2020*, Geneva, 2021 (Civilian Harm Report), available at: <https://shop.icrc.org/download/ebook?sku=4539/002-ebook>.

103 ICRC AWS position, above note 58.

104 ICRC Customary Law Study, above note 18; ICRC Interpretive Guidance, above note 18.

105 Tomer Broude and Yahli Shereshevsky, “Explaining the Practical Purchase of Soft Law”, in Harlan G. Cohen and Timothy Meyer (eds), *International Law as Behavior*, Cambridge University Press, Cambridge, 2021.

106 Dan Efrony and Yuval Shany, “A Rule Book on the Shelf? Tallinn Manual 2.0 on Cyberoperations and Subsequent State Practice”, *American Journal of International Law*, Vol. 112, No. 4, 2018.

footnotes, and sometimes even publication of the initiative in academic journals.¹⁰⁷

These techniques are also used in various initiatives in the context of new technologies in war. For example, the ICRC Civilian Harm Report is published online with open access and emphasizes the role of various experts in its preparation, including military officials from various States and international law academics.¹⁰⁸ It was also publicized in various ways, including through a blog series, several events, and at a briefing at the UN Security Council. In addition, an executive summary of the report was published in this journal.¹⁰⁹ Finally, a highly interesting and understudied new tool is the use of social media and especially Twitter as a technique for enhancing the visibility of new initiatives – the Civilian Harm Report was heavily promoted through Twitter.

Another example of the use of similar techniques is the Tallinn Manual 2.0. The Manual also emphasized that it was drafted with wide participation and input from international law experts as well as through observations made by States. It is a lengthy project, with a combination of rules and academic reasoning, that contains many footnotes. Finally, it was actively promoted through a series of events and published by Cambridge University Press.

As mentioned, for various reasons, States are more reluctant to explicitly express their in-depth legal views on new technologies compared to other areas of IHL. However, it seems that recently States have begun to take a more active position in relation to new technologies. Interestingly, States also use various techniques to increase the visibility of their positions. To give just one example, Israel recently presented its position on the application of international law to cyber operations. It was delivered through a keynote speech by the Israeli deputy attorney general at the Naval War College's Conference on Disruptive Technologies and International Law. Various attempts were made to increase the visibility of the speech: it was published online in one of the main international law blogs, *EJIL: Talk!*,¹¹⁰ and it was later published in an academic journal, *International Law Studies*, and enjoys open access.¹¹¹ Moreover, the deputy attorney general actively promoted the speech in advance through his professional Twitter account.¹¹²

The use of similar persuasive techniques by States and non-State actors is further developed in the next section, which explores the roles of various actors in informal law-making.

107 Y. Shereshevsky, above note 11, pp. 46–52.

108 Civilian Harm Report, above note 102.

109 “Executive Summary: Avoiding Civilian Harm from Military Cyber Operations during Armed Conflicts”, *International Review of the Red Cross*, Vol. 104, No. 919, 2022.

110 Roy Schöndorf, “Israel’s Perspective on Key Legal and Practical Issues Concerning the Application of International Law to Cyber Operations”, *EJIL: Talk!*, 9 December 2020, available at: www.ejiltalk.org/israels-perspective-on-key-legal-and-practical-issues-concerning-the-application-of-international-law-to-cyber-operations/.

111 R. Schöndorf, above note 84.

112 Available at: <https://twitter.com/RoySchondorf/status/1336263003734487042>.

States, non-State actors and informal law-making

There are (at least) five important aspects regarding the role of States and non-State actors in informal international law-making initiatives in the context of emerging military technologies.

First, while States are clearly superior law-makers in the context of formal international law-making, informal processes are more balanced, less hierarchical, and allow non-State actors to have a significant role in shaping the law. Often non-State actors produce informal law-making initiatives at an early stage of the law-making process, and thus enhance their influence. The ICRC Customary Law Study is, as mentioned, a seminal example of a highly influential law-making initiative on IHL by a non-State actor. The Tallinn Manual 2.0, although its influence is more controversial, is probably the most notable example in the context of emerging military technologies.

Second, while States are more reluctant to express their positions in relation to emerging military technologies than they are in other IHL contexts, they do engage more often in the debate over such technologies. This is evident by the rise of State positions on cyber operations as well as States' active engagement in the regulation of LAWS through the GGE on LAWS process. In a previous work I suggested that such engagement of States in the law-making process is a result of the understanding that leaving the informal law-making game primarily to non-State actors can push the common understanding of relevant norms away from the positions of various interested States.¹¹³ This applies also to the context of emerging military technologies, and is reflected, for example, in the willingness of interested states to actively participate in the GGE on LAWS process.

Third, it is interesting to note that due to the more horizontal nature of informal law-making, States employ similar micro-processes to those that were employed initially by non-State actors, as described in the previous section. Since a position of a single State (or even two or three States) has limited formal law-making power, for example for the purpose of establishing State practice or *opinio juris*, States must now play the persuasion game, investing in various micro-processes to increase the influence of their positions.

Fourth, while both types of actors employ persuasion techniques, States and non-State actors benefit from different advantages in the persuasion game. States enjoy formal authority but are often perceived as biased actors, while non-State actors are often perceived as less biased but do not have formal authority. In such circumstances, there is a strong incentive for both types of actors to cooperate in informal law-making initiatives in order to compensate for each other's weaknesses. Such cooperation complicates the common narration of a State–non-State actor law-making competition, towards what could be called like-minded State–non-State actor cooperation. Cooperation between States and non-State actors in norm creation is well documented in the international relations/international law literature,¹¹⁴ but it

113 Y. Shereshevsky, above note 11, pp. 40–42.

114 Julia C. Morse and Robert O. Keohane, "Contested Multilateralism", *Review of International Organizations*, Vol. 9, No. 4, 2014; Christine Ingebritsen, "Norm Entrepreneurs: Scandinavia's Role in

often focuses on attempts to push towards more restrictive norms and, in IHL terms, towards the humanitarian side of the equation.¹¹⁵ It is important to stress that such cooperation can be aimed at promoting both sides of the military necessity versus humanitarian considerations debate in IHL, especially in the informal law-making game.¹¹⁶ In the context of emerging technologies, such cooperation can be found, for example, in the micro-process of demonstrating wide participation in the drafting of law-making initiatives. There is also the possibility of more explicit cooperation, as the recent call for cooperation between States and non-State actors to promote a ban on LAWS outside the CCW framework demonstrates, in line with previous successful cooperation between such actors in the context of weapons law.¹¹⁷

Finally, as mentioned, the unequal distribution of emerging military technologies is a key factor that contributes to the difficulty of reaching an agreement over their regulation. Beyond their effect on the interests of the parties to a conflict, power differences also affect the ability to shape international law. While theoretically, all States can participate equally in informal law-making, the unsurprising reality is that powerful States, mostly from the global North, often take a more active role in informal IHL-making.¹¹⁸ It is important to note here that by “powerful States” I refer primarily to these States’ capacity to invest significant resources in law-making initiatives. Recently, a reform in the composition of the UN GGE and the establishment of the OEWG broadened participation in these processes, but it is yet to be seen to what extent these changes will increase the role of less powerful States in the law-making process, and to what extent they are merely part of the struggle between powerful States such as the United States, Russia and China. Still, such processes do hold some promise for more inclusion – for example, it has recently been noted that States from the global South significantly participate in the law-making process under the GGE on LAWS process.¹¹⁹

Conclusion

Emerging military technologies have already altered the nature of warfare and are expected to change it even more in the near future. As a result, they also produce

World Politics”, *Cooperation and Conflict*, Vol. 37, No. 1, 2002; Martha Finnemore and Kathryn Sikkink, “International Norm Dynamics and Political Change”, *International Organization*, Vol. 52, No. 4, 1998.

115 See, e.g., Elvira Rosert, “Norm Emergence as Agenda Diffusion: Failure and Success in the Regulation of Cluster Munitions”, *European Journal of International Relations*, Vol. 25, No. 4, 2019; Fen Osler Hampson and Holly Reid, “Coalition Diversity and Normative Legitimacy in Human Security Negotiations”, *International Negotiation*, Vol. 8, No. 1, 2003; M. Finnemore and K. Sikkink, above note 114.

116 Y. Shereshevsky, above note 11, pp. 52–57.

117 C. Carpenter, above note 45.

118 Y. Shereshevsky, above note 11 (focusing on the United States and Israel as the main actors in unilateral law-making initiatives in the context of extraterritorial armed conflicts against non-State armed groups).

119 Ingvild Bode, “Norm-Making and the Global South: Attempts to Regulate Lethal Autonomous Weapons Systems”, *Global Policy*, Vol. 10, No. 3, 2019.

continuous debate over the normative implications of their use and the need for the evolution of IHL to address those implications. This article has not engaged in the normative debate over the regulation of new military technologies; instead, it has focused on the process of the legal evolution itself. The premise of this article is that as a formal change of the relevant legal norms is unlikely, informal law-making initiatives are the main path to advancing legal change. These processes are relevant to various new military technologies, including cyber warfare, autonomous weapons and enhanced soldiers. While the informal path in IHL has been the subject of recent scholarly attention, much less attention has been given to the micro-processes of informal law-making. It is highly important to explore these micro-processes in depth, in order to better understand their potential to shape the future regulation of the battlefield. Specifically, while it is reasonable to assume that the use of the various persuasive techniques described in this article contributes to the effectiveness of informal law-making initiatives, this is an important empirical question that has not yet been adequately studied.