From Cyber Norms to Cyber Rules: Re-engaging States as Law-makers

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Abstract

Several indicators point to a crisis at the heart of the emerging area of international cyber security law. First, proposals of internationally binding treaties by the leading stakeholders, including China and Russia, have been met with little enthusiasm by other states, and are generally seen as having limited prospects of success. Second, states are extremely reluctant to commit themselves to specific interpretations of controversial legal questions and thus to express their cyber opinio juris. Third, instead of interpreting or developing rules, state representatives seek refuge in the more ambiguous term ‘norms’. This article argues that the reluctance of states to engage themselves in international law-making has generated a power vacuum, lending credence to claims that international law fails in addressing modern challenges posed by the rapid technological development. In response, several non-state-driven norm-making initiatives have sought to fill the void, including Microsoft’s cyber norms proposals and the Tallinn Manual project. The article then contends that this emerging body of non-binding norms presents states with a critical window of opportunity to reclaim a central law-making position, similarly to historical precedents including the development of legal regimes for Antarctica and nuclear safety. Whether the supposed crisis will lead to the demise of inter-state cyberspace governance or to a recalibration of legal approaches will thus be decided in the near future. States should assume a central role if they want to ensure that the existing power vacuum is not exploited in a way that would upset their ability to achieve their strategic and political goals.

Keywords

attribution; cyber security; governance; norms; rules

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‘A small group of thoughtful committed people can change the world. Indeed, it is the only thing that ever has.’

Margaret Mead¹

‘States are, at this moment of history, still at the heart of the international legal system.’

Rosalyn Higgins²

’[C]ompliance with international law frees us to do more, and do more legitimately, in cyberspace[.]’

Harold H. Koh³

1. Introduction

The international community faces today a wide gamut of diverse global challenges ranging from climate change to international terrorism to cyber threats. What these challenges have in common is that they cannot be adequately addressed by any single international actor, irrespective of how powerful that actor may be. Instead, all such contemporary phenomena necessitate a framework for effective international cooperation. It is international law that ‘affords [such] a framework, a pattern, a fabric for international society’ ⁴

Although the law establishes a framework of constraints, the flipside of the same coin is that it simultaneously guarantees a sphere of autonomy for its subjects.⁵ In the

⁵ Cf. J. Raz, The Morality of Freedom (1986), 155 (‘Autonomy is possible only within a framework of constraints.’).
context of international law, legal norms lay down shared boundaries of acceptable conduct in international relations, while preserving important space for manoeuvre, discretion and negotiation. This is the idea at the root of the famous ‘Lotus presumption’, according to which states may generally act freely unless prevented by a contrary rule of international law.

In order to delineate this zone of freedom for states and other international actors with respect to any internationally significant phenomenon, it is necessary to identify, interpret and apply relevant legal rules to it. Despite the ongoing debates about the supposed decline of the sovereign state, it remains the case that states have maintained their centrality in the formation, interpretation, and application of international legal rules in general. But have they kept an equally firm hold on the development of international cyber security law?

There is little doubt that cyberspace, broadly understood, is a phenomenon of international significance in the sense just described. Crucially, the uses and abuses of this complex borderless virtual space impinge on vital state interests in the physical

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6 See, e.g., J. Crawford, The Creation of States in International Law (2006), 41–42 (describing the presumption as a ‘part of the hidden grammar of international legal language’); but see, e.g., Accordance with International Law of the Unilateral Declaration of Independence in Respect of Kosovo, Advisory Opinion of 22 July 2010, [2010] ICJ Rep. 403, Declaration of Judge Simma, at 478, para. 2 (arguing that the presumption ‘reflects an old, tired view of international law’).

7 SS Lotus case (France v. Turkey), PCIJ Rep. Series A No. 10, at 18.

8 Cf. G. M. Danilenko, Law-Making in the International Community (1993), 1 (arguing that in order for the international legal system to remain effective, it needs to engage in (1) law-making in novel, so far ungoverned areas and (2) constant upgrading and refinement of the existing law).


10 See, e.g., Higgins, supra note 2, at 39; M. Byers, Custom, Power and the Power of Rules (1999), 13; H. Thirlway, The Sources of International Law (2014), 16–19. It is acknowledged that, in addition to state consent, modern international law may at least to some extent also be the product of abstract moral values such as ‘humanity’, ‘fairness’, or ‘communitarian values’. However, it would be beyond the scope of this article to revisit the longstanding debate about the relative contribution of state consent and abstract values to the process of formation of international law. For more on this topic, see, e.g., H. Charlesworth, ‘Law-making and Sources’, in J. Crawford and M. Koskenniemi (eds.), The Cambridge Companion to International Law (2012), 187 at 187–202 and works cited therein.

world, including national security, public safety, and economic development. As such, cyberspace extends far beyond the domain of internal affairs of any state.\textsuperscript{12} It therefore follows that it is imperative to clarify the boundary between constraints and autonomy as it applies to actors in cyberspace.

Yet, with respect to the management of cyberspace, it may appear that international law presently fails to deliver. Even though the main building blocks of the Internet’s architecture had been laid over two decades ago,\textsuperscript{13} it took until 2013 for state representatives to agree on the rudimentary threshold assumption that international law actually applies to cyberspace.\textsuperscript{14} The agreement was touted at the time as a ‘landmark consensus’,\textsuperscript{15} but its actual import is controversial.

To begin with, it was expressed in the form of a non-binding report of a Group of Government Experts (GGE) established by the UN General Assembly.\textsuperscript{16} At the time, the group was composed of representatives of 15 UN member states,\textsuperscript{17} including the three ‘cyber superpowers’ China, Russia, and the US.\textsuperscript{18} On the one hand, the fact of anchoring the process at the UN has added to the legitimacy of its outputs in general.\textsuperscript{19} Also, the 2013 report itself can arguably be taken as reflecting a shared understanding in the international community.\textsuperscript{20}

On the other hand, the report raised more questions than it answered. International law is supposed to apply, but \textit{which} international law? Although the group endorsed the centrality of the UN Charter,\textsuperscript{21} several of its members have questioned the


\textsuperscript{15} US, Department of State, ‘Statement on Consensus Achieved by the UN Group of Governmental Experts on Cyber Issues’, 7 June 2013, available at www.state.gov/r/pa/prs/ps/2013/06/210418.htm.


\textsuperscript{17} Ibid., at 12–13.

\textsuperscript{18} See, e.g, A. Segal, \textit{The Hacked World Order} (2016), 40.


\textsuperscript{20} The UN General Assembly subsequently ‘[w]elcom[ed]’ the GGE report in a unanimously adopted resolution without, however, discussing the details of its contents. See UN GA Res. 68/243, 9 January 2014, preambular para. 11.

\textsuperscript{21} GGE Report 2013, \textit{supra} note 14, at 8, para. 19 (‘International law, and \textit{in particular the Charter of the United Nations}, is applicable’) (emphasis added).
applicability of a prominent subdomain of international law – the law of armed conflict – to cyber operations.\textsuperscript{22} Perhaps more importantly, \textit{how} is international law supposed to apply?\textsuperscript{23} It is one thing to know that the online realm is not a lawless world, but quite another to understand how existing rules apply to cyber phenomena.\textsuperscript{24}

Against this background, this article examines if the current situation is fairly described as one of crisis. To that end, it starts by weighing three key crisis indicators reverberating around states’ general reluctance to engage in law-making in the area of the international cyber security law (section 2). Since new binding rules are few and far between, it then looks to the pre-existing landscape of international law and the extent to which it provides a regulatory mechanism in its own right (section 3). Subsequently, the article shows that states’ retreat from their traditional legislative function has generated a power vacuum, triggering a number of non-state initiatives seeking to fill it (section 4). On the basis of historical precedents that include the development of legal regimes for Antarctica and nuclear safety, the article then argues that states now have a critical window of opportunity to build on the plurality of emerging non-binding norms and thus reclaim their central law-making position (section 5). Whether they succeed in doing so will determine the future nature of cyberspace governance as well as the role played by international law in this regard.

2. Crisis indicators: International law and cyber security

Three indicators suggesting a crisis in this area of the law stand out. First, the domain of cyber security appears resistant to codification of the applicable rules in a comprehensive multilateral binding treaty.\textsuperscript{25} This is not for want of trying by the leading international stakeholders. Already in 1996, France put forward the earliest

\textsuperscript{22} See, e.g., US, Office of the Secretary of Defense, \textit{Military and Security Developments Involving the People’s Republic of China} (2011), 6 (‘China has not yet agreed with the U.S. position that existing mechanisms, such as International Humanitarian Law and the Law of Armed Conflict, apply in cyberspace.’); E. Chernenko, ‘Russia Warns Against NATO Document Legitimising Cyberwars’, \textit{Kommersant-Vlast}, 29 May 2013, available at rbth.com/international/2013/05/29/russia_warns_against_nato_document_legitimising_cyberwars_26483.html (reporting the Russian government’s scepticism towards the \textit{Tallinn Manual}’s endorsement of the applicability of international humanitarian law to cyberspace).

\textsuperscript{23} For an examination of different approaches to the rule of law in cyberspace taken by, respectively, western countries and China, see Z. Huang and K. Mačák, ‘Towards the International Rule of Law in Cyberspace: Contrasting Chinese and Western Approaches’, (2017) 16 \textit{Chinese Journal of International Law} (forthcoming).


\textsuperscript{25} For existing sectoral and regional treaties concerning aspects of cyber security, see text at notes 69–78, \textit{infra}.
proposal with the lofty title *Charter for International Cooperation on the Internet*. Later, a joint Russo-Chinese initiative resulted in two proposals for a *Code of Conduct for Information Security*, submitted to the UN General Assembly in 2011 and 2015, respectively. However, none of these proposals was met with much enthusiasm by other states and scholars describe the prospects of an ‘omnibus’ treaty being adopted in the near future as slim to negligible. In part, this is no doubt because, whatever the subject, the ‘very word “treaty” may conjure up the fearsome formalities of diplomacy’, with a chilling effect on states’ willingness to engage in this form of law-making. Yet, with respect to cyber security, this aversion appears to be particularly pronounced.

Second, states have shown extreme reluctance to contribute towards the development of cyber-specific customary international rules. In addition to state practice in this area being inevitably shrouded in secrecy, states have been reluctant

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27 Letter dated 12 September 2011 from the Permanent Representatives of China, the Russian Federation, Tajikistan and Uzbekistan to the United Nations addressed to the Secretary-General, UN Doc. A/66/359, 14 September 2011, at 3–5; Letter dated 9 January 2015 from the Permanent Representatives of China, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan and Uzbekistan to the United Nations addressed to the Secretary-General, UN Doc. 69/723, 13 January 2015, at 3–6.


31 See R. A. Clarke and R. Knake, *Cyber War: The Next Threat to National Security and What to Do About It* (2010), xi (‘The entire phenomenon of cyber war is shrouded in such government secrecy that it makes the Cold War look like a time of openness and transparency.’).
to offer clear expressions of *opinio juris* on matters related to cyber security.\textsuperscript{32} At times, this approach may certainly be understandable, being the consequence of a domestic political gridlock or even a deliberate waiting strategy.\textsuperscript{33} On other occasions, it may rather be due to the persisting ‘cybersecurity knowledge gap’, in other words the striking lack of understanding of cybersecurity matters, which permeates the government structures in countries around the world.\textsuperscript{34} On the whole, this reluctance adds to the pervasive ambiguity as far as the specific applicability of international law is concerned.

This trend is visible even in the most recent developments. A representative example of another missed opportunity to steer the development of cyber custom is provided by the recent US *Law of War Manual* adopted in July 2015 and updated in December 2016.\textsuperscript{35} Although it does contain a chapter on cyber operations,\textsuperscript{36} the *Manual* skirts virtually all of the unsettled issues, including standards of attribution, rules of targeting or the requirement to review cyber weapons.\textsuperscript{37}

While the first two indicators relate to states’ reluctance to act in ways meaningful for the generation of new rules, the third concerns their actual conduct in relation to cyber governance. It would be inaccurate to claim that states have entirely given up on standard-setting. However, instead of interpreting or developing rules of international law, state representatives have generally sought refuge in the more ambiguous term ‘norms’. It is true that law and norms are ‘intimately intertwined’ concepts and that inter-state agreement on ‘norms’ may gradually influence the development of the law.\textsuperscript{38} Yet, a fundamental difference between the two is that a violation of a binding


\textsuperscript{36} Ibid., ch. xvi.


\textsuperscript{38} Finnemore and Hollis, *supra* note 19, at 441–442.
rule of international law gives rise to international legal responsibility,\textsuperscript{39} while the same cannot be said of non-legal norms regulating cyber conduct.\textsuperscript{40}

The trend of promoting cyber norms is the most visible in the context of the work of the UN GGE. In its latest report, the group touted the advantages of ‘[v]oluntary, non-binding norms of responsible State behaviour’.\textsuperscript{41} The report claimed that such norms prevent conflict in cyberspace, foster international development, and reduce risks to international peace and security.\textsuperscript{42} The report further recommended 11 such norms for consideration by states,\textsuperscript{43} while making it clear that these norms operate on a decidedly non-legal plane.\textsuperscript{44} Despite their minimalistic nature, the norms have thus far received very limited endorsement by their addressees. For example, at a US-China summit in September 2015, the two participating heads of state ‘welcomed’ the report but refrained from committing themselves to any of the proposed norms.\textsuperscript{45}

Together, these three indicators signify a trend of moving away from the creation of legal rules of international law in the classical sense. Instead of developing binding treaty or customary rules, states resort to normative activity outside the scope of traditional international law. Although this trend appears to be especially prominent in the area of cyber security, it is by no means limited to it.\textsuperscript{46} In legal theory, this phenomenon has been described as ‘the pluralisation of international norm-making’,\textsuperscript{47} characterised by the observation that ‘only a limited part of the exercise of public authority at the international level nowadays materialises itself in the creation of norms which can be considered international legal rules according to a classical understanding of international law’.\textsuperscript{48} In order to understand the impact this situation

\textsuperscript{39} International Law Commission (ILC), Articles on Responsibility of States for Internationally Wrongful Acts, 2001 YILC, Vol. 53 II (Part Two), Art. 1; Rainbow Warrior Arbitration (New Zealand v. France), Special Arbitration Tribunal, (1990) 20 RIAA 215, at 251, para. 75 (‘any violation by a State of any obligation, of whatever origin, gives rise to State responsibility’).

\textsuperscript{40} See further Schmitt and Vihul, \textit{supra} note 29, at 25–27.


\textsuperscript{42} Ibid., at 7, para. 10.

\textsuperscript{43} Ibid., at 7–8, para. 13.

\textsuperscript{44} Ibid., at 7, para. 10.


\textsuperscript{46} For a general discussion of the process of gradual ‘surrender [of states’] monopoly on regulatory power’ from the perspective of global governance, see E. Benvenisti, \textit{The Law of Global Governance} (2014), 25 et seq.

\textsuperscript{47} J. d’Aspremont, \textit{Formalism and the Sources of International Law} (2011), 222.

\textsuperscript{48} Ibid., at 2.
has on the international legal regulation of cyber security, we must zoom out slightly to take in the broader context of existing international law.

3. Gaps and patches: Existing legal landscape

3.1. Generally applicable rules

The absence of a cyber-specific system of rules of international law does not mean that there are no legal rules that would apply to cyber activities. As we have seen, states accept that generally applicable rules of international law apply to states’ conduct in cyberspace, too. This is undoubtedly correct. If international law is to be an efficient governance structure, it must be adaptable to new phenomena without the need to reinvent an entire regulation framework on each occasion.49

By way of an example, the UN Charter was finalised when the invention of nuclear weapons was still a closely guarded secret50 and this instrument thus understandably did not refer to this type of weapons in its provisions on the use of force.51 Still, the International Court of Justice (ICJ) had little difficulty in holding, in the Nuclear Weapons Advisory Opinion issued decades later, that those provisions ‘apply to any use of force, regardless of the weapons employed’,52 notwithstanding the fact that a particular type of weapons might not yet have been generally known or even invented when the Charter was adopted.53 Following the same logic, cyber operations must equally be subject to the international law regulation of the use of force.54

The applicability of international human rights law (IHRL) to states’ conduct online is another highly relevant example. The foundations of this body of law were laid in

49 Cf. US, International Strategy for Cyberspace, supra note 32, at 9 (‘The development of norms for state conduct in cyberspace does not require a reinvention of customary international law, nor does it render existing international norms obsolete.’).

50 Cf. Legality of the Threat or Use of Nuclear Weapons Case, Berchmans Soedarmanto Kadarisman, CR 95/25, 3 November 1995, at para. 46 (‘the framers of the United Nations Charter could not be aware of the threat of nuclear weapons’).

51 Charter of the United Nations, 1 UNTS 16 (1945), Arts. 2(4) and 3–51.


53 See further S. Kadelbach, ‘Interpretation of the Charter’, in B. Simma et al. (eds.), The Charter of the United Nations: A Commentary (2012), 71 at 89 (arguing that the utility of the Charter travaux is limited given that many problems were not foreseen in 1945, whereas for others shared meanings have been worked out over time).

the post-Second World War period when states adopted instruments which together form the so-called ‘International Bill of Human Rights’.\textsuperscript{55} Needless to say, these texts predate, by a large margin, the contemporary challenges inherent to and amplified by cyberspace. Still, this chronology does not render IHRL inapplicable to cyber activities. Quite the contrary: the fact that today ‘people are as likely to come together to pursue common interests online as in a church or a labor hall’ requires that universal human rights ‘also apply in cyberspace’, as then-US Secretary of State Hillary Clinton argued in a path-breaking speech in 2011.\textsuperscript{56} This position has since been endorsed by two resolutions of the UN Human Rights Council in 2012 and 2016, which have included identical phrases affirming that ‘the same rights that people have offline must also be protected online’.\textsuperscript{57}

While the conclusion that these generally applicable rules of international law apply to conduct in cyberspace may offer some solace, many crucial questions remain unanswered. For instance, it is one thing to posit the applicability of the law on the use of force to cyberspace, but quite another to determine whether a specific cyber attack crosses the threshold of force in concrete circumstances. Although an influential set of factors known after their author as the ‘Schmitt criteria’ have emerged in the literature,\textsuperscript{58} little is known about states’ views in that regard.\textsuperscript{59} Crucially, no cyber operation—including Stuxnet, which has arguably been the most intrusive one thus

\textsuperscript{55} The International Bill of Rights consists of the Universal Declaration of Human Rights (1948); the International Covenant on Civil and Political Rights (1966) and the two Optional Protocols annexed thereto; and the International Covenant on Economic, Social and Cultural Rights (1966) and its Protocol.


\textsuperscript{58} M. N. Schmitt, ‘Computer Network Attack and the Use of Force in International Law: Thoughts on a Normative Framework’, (1999) 37 Columbia Journal of Transnational Law 914 (original list of six criteria: severity; immediacy; directness; invasiveness; measurability; and presumptive legitimacy); M. N. Schmitt, ‘Cyber Operations and the Jus Ad Bellum Revised’, (2011) 56 Villanova Law Review 576 (revised list of seven criteria: severity; immediacy; directness; invasiveness; measurability; presumptive legitimacy; and responsibility); Tallinn Manual 2.0, supra note 54, at 334–336 (restated list of eight criteria: severity; immediacy; directness; invasiveness; measurability; military character; state involvement; and presumptive legality).

\textsuperscript{59} For a notable exception, see Koh, supra note 3, at 3–4 (referencing the 1999 version of the ‘Schmitt criteria’).
far, having caused extensive physical damage to an Iranian nuclear facility in 2010—has ever been described as amounting to a use of force by any state, whether by a victim or a bystander.

Similarly, the general agreement that human rights are also available online tells us very little about the legal qualification of new cyber phenomena that are without precedents from the offline era. A case in point is Tor, a technology that protects users against surveillance and traffic analysis online and thus enables them to communicate anonymously on the Internet. Western states including the US or Sweden apparently see Tor as a means for furthering privacy and freedom of expression and as such worthy of their moral and financial support. In contrast, China views this technology as a security threat and a tool of cyber attacks; in this light, it is unsurprising that the use of Tor is unlawful in China. Likewise, other non-western states including Ethiopia, Iran, and Kazakhstan have reportedly sought to block Tor traffic in the past. In sum, it is unclear how to square states’ near-identical proclamations made at a high level of generality with their highly divergent behaviour with respect to particular phenomena unsubstantiated by any corresponding legal justification.

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61 But see *Tallinn Manual 2.0*, supra note 54, at 342 (noting that all members of the international group of experts considered the Stuxnet operation as a use of force).


65 Singer and Friedman, *supra* note 34, at 107.


68 See also *Tallinn Manual 2.0*, supra note 54, at 188 (noting that the international group of experts ‘could achieve no consensus on the precise parameters of the right to freedom of expression’) and 194–195 (‘although actions to prohibit, restrict, or undermine access to devices or technology that foster anonymity may, as a practical matter, reduce the exercise or enjoyment of international human rights online, such actions do not in themselves necessarily implicate international human rights law as a matter of *lex lata* on the basis of infringement with or loss of anonymity’).
3.2. Sectoral and regional treaties

In addition to generally applicable rules of international law, certain sectoral and regional treaties taken together provide a ‘patchwork of regulations’ for cyber activities. These include, in particular, the 1992 Constitution of the International Telecommunication Union; the 2001 Budapest Convention on Cybercrime and its 2006 Protocol on Xenophobia and Racism; the 2009 Shanghai Cooperation Organization’s Information Security Agreement; and the 2014 African Union’s Cyber Security Convention. Although important in their own right, these international agreements govern only a small slice of cyber-related activities (such as criminal offences committed by means of computer systems or operations interfering with existing telecommunications networks), or have a very limited membership (six states in the case of the Shanghai Cooperation Organization’s agreement and none yet in that of the African Union’s convention).

Therefore, although cyberspace is certainly not a lawless territory beyond the reach of international law, for now there is no complex regulatory mechanism governing state cyber activities. Moreover, states seem reluctant to engage themselves in the development and interpretation of international law applicable to cyber security. This

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69 Hathaway, supra note 29, at 873.
73 Agreement between the Governments of the Member States of the Shanghai Cooperation Organization on Cooperation in the Field of International Information Security (2009) (hereinafter ‘Yekaterinburg Agreement’).
75 Convention on Cybercrime, supra note 71, Arts. 2–10.
76 ITU Constitution, supra note 70, Art. 45 (prohibiting harmful interference) and Ann. (defining harmful interference).
77 Yekaterinburg Agreement, supra note 73. In 2017, India and Pakistan are expected to join the Shanghai Co-operation Organization (SCO), which will likely result in a corresponding increase in the number of state parties to the Agreement. See AFP, ‘India, Pakistan Edge Closer to Joining SCO Security Bloc’, The Express Tribune, 24 June 2016, available at tribune.com.pk/story/1129533/india-pakistan-edge-closer-joining-sco-security-bloc.
79 See also Hathaway, supra note 29, at 873.
voluntary retreat has generated a power vacuum, enabling non-state actors to move into the space vacated by states and pursue various forms of ‘norm entrepreneurship’.81

4. Power vacuum: Withdrawal of states and emergence of non-state initiatives

4.1. Power and law

Vectors of power and law do not overlap perfectly. State power is certainly influenced by many other factors, which may include military might, wealth, and moral authority.82 Nonetheless, it needs little emphasis that the relationship between power and law is a close one, particularly at the international level.83 In this sense, states may be said to normally opt for one of two archetypal approaches in order to actualize that relationship to further their interests. On the one hand, they frequently choose the path of legal certainty in order to consolidate and project their power. Indeed, if we understand power in the Nyean sense as ‘the ability to alter others’ behaviour to produce preferred outcomes’,84 then setting specific legal obligations is one way how to exercise this ability.85 Everything else being equal, it is more likely than not that these ‘others’ will act in accordance with a certain standard of behaviour when it is required by law than when it is not.86

On the other hand, in certain contexts, the competing approach of legal uncertainty may be deemed desirable by even the most powerful states. In other words, states may choose to instrumentalize the ambiguity surrounding the existence, content, and interpretation of legal rules as a power-protecting tool. For example, during the early days of space exploration, only two states were capable of acting in outer space: the US and the Soviet Union. Yet these two states resisted, for a significant time, to commit

80 This has now been expressly acknowledged even by state representatives. See, e.g., Egan, supra note 32, at 5.
82 Byers, supra note 10, at 5.
83 See further Higgins, supra note 2, at 3–4 (analysing the relationship between law and power from the perspective of international law).
85 See also Finnemore and Hollis, supra note 19, at 441–444 (arguing that, in addition to law, the bases on which particular conduct in cyberspace is labelled as appropriate or inappropriate include politics, culture, religion, and professional standards).
86 See further J. Crawford, Change, Order, Change: The Course of International Law (2013), 40–49 (demonstrating the effectiveness of international legal obligations on a diverse set of empirical examples including the protection of the ozone layer, restrictions on whaling, and slave trade).
themselves to any binding rules that would govern outer space. Both had believed that the adoption of such rules would only serve to constrain their activities in space. In that vein, ‘[l]egal uncertainty was useful to those with the power to act in space, on either side of the cold war.’

However, cyberspace and outer space – albeit frequently lumped together as so-called ‘global commons’ – are decidedly different from one another. This is not only because many states are challenging the very idea of cyberspace as commons by seeking to assert greater control online. More importantly, cyberspace is already a much more crowded domain than outer space could ever be. To wit, the US and the Soviet Union were not just the only states engaged in space exploration for several decades, they were also the only actors capable of space flight. In contrast, cyberspace is populated primarily by non-state actors, which include individuals, corporations, and other more loosely organised groups. The possibility of anonymity online combined with the corresponding difficulty of attribution of cyber operations have resulted in the ‘dramatic amplification’ of power in the hands of these non-state actors at the expense of their state counterparts.

The effect of legal uncertainty is thus much more complex than what we saw in the past in relation to outer space, as it affects a far more populous spectrum of actors, state and non-state alike. It is true that in terms of power and available resources, the relationship between states and non-state actors in cyberspace remains marked by ‘a clear disequilibrium in favor of States’. And yet, faced with states’ silence, non-state actors have moved into the vacated norm-creating territory, which had previously been occupied exclusively by states. These developments have been primarily driven

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87 S. Banner, Who Owns the Sky? The Struggle to Control Airspace from the Wright Brothers On (2008), 278.
89 S. Shackelford, Managing Cyber Attacks in International Law, Business, and Relations (2014), 58.
90 Of course, the situation has dramatically changed since then. The number of space-faring states has been steadily increasing and even some non-state actors have demonstrated their capability to engage in outer space activities. See further P. Jankowitsch, ‘The Background and History of Space Law’, in F. von der Dunk (ed.), Handbook of Space Law (2015), 1 at 1–28.
by the private sector and by the academia, as epitomised by Microsoft’s cyber norms proposal and by the so-called Tallinn Manual project.

4.2. Leading non-state-driven initiatives

Firstly, Microsoft’s proposal entitled *International Cybersecurity Norms: Reducing Conflict in an Internet-Dependent World* was published in December 2014.94 Interestingly, this white paper was not the first private-sector initiative of this kind. Exactly 15 years earlier, Steve Case, then the CEO of AOL, urged states to revise their ‘country-centric’ laws and adopt instead ‘international standards’ governing crucial aspects of conduct online, including security, privacy, and taxation.95 Still, Microsoft’s text was the first comprehensive proposal of specific standards of behaviour online, which, despite its private origin, proposed norms purporting to regulate solely the conduct of states.96 The openly proclaimed central aim of this white paper was to reduce the possibility that information and communications technology (ICT) products and services would be ‘used, abused or exploited by nation states as part of military operations’.97 To that end, the paper put forward six cyber security norms, which collectively called on states to improve their cyber defences and limit their engagement in offensive operations.98

Microsoft’s original proposal was met with criticism to the effect that by focussing on states, the paper ignored the crucial role that the industry must itself take on to achieve global cyber security.99 In 2016, Microsoft responded to these claims by issuing another white paper entitled *From Articulation to Implementation: Enabling Progress on Cybersecurity Norms*.100 In it, the company proposed six further cybersecurity norms,

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96 McKay et al., supra note 94, at 2–3.
98 McKay et al., supra note 94, at 2. The complete list of the proposed norms may be found in the annex to the document: ibid., at 20.
100 Ibid.
this time addressed to ‘the global ICT industry’. These were meant to complement and strengthen the norms published in the earlier document.

On the whole, however, the text made no secret of the fact that it, like the entire Microsoft-led cyber norms project, was still primarily addressed to states. Even parts that concerned the role of the industry were written in the form of demands that the recognition of that role would place on states. For instance, the paper appealed to states to involve the industry in the norms debate, to draw on its technical expertise, and to give greater weight to its input overall. In early 2017, Microsoft further stepped up its initiative, calling on states to transform its six state-oriented norms into an international treaty with a bold working title: ‘a Digital Geneva Convention’.

Secondly, the Tallinn Manual process was a seven-year project undertaken under the auspices of the Estonia-based NATO Cooperative Cyber Defence Centre of Excellence (CCD COE). The project brought together an international group of experts under the leadership of Professor Michael Schmitt and resulted in the publication of two editions of the Manual respectively in 2013 and 2017. Although both editions acknowledged the support of the NATO CCD COE, they also made it clear that their text reflected only the personal views of the experts and not the states or institutions from which they originated.

The first edition, entitled Tallinn Manual on the International Law Applicable to Cyber Warfare, maintained an almost exclusive focus on activities occurring above the level of the use of force. Its text identified 95 purported rules of customary international law, the vast majority of which related to the law on the use of force (jus ad bellum) and the law of armed conflict (jus in bello). The Manual quickly became a standard reference point and was deservedly praised for breaking new ground as well as for providing useful practical guidance. However, early reviews and reactions from

101 Ibid., at 7.
102 Ibid., at 6.
103 Ibid., at 2.
106 Tallinn Manual, supra note 54.
107 Tallinn Manual 2.0, supra note 54.
states not involved in the project criticized the project’s preoccupation with military uses of cyberspace and noted that in reality, most (if not all) cyber operations fall below the threshold of the use of force.\textsuperscript{112}

The 2017 edition, published under the slightly modified title \textit{Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations}, addressed these criticisms by considerably expanding the scope of the study.\textsuperscript{113} The second edition thus nearly doubled the number of rules identified, for a total of 154 agreed rules of custom, only about a half of which related to the \textit{jus ad bellum} and the \textit{jus in bello}.\textsuperscript{114} In addition, the Tallinn Manual 2.0 covers multiple areas of ‘peacetime international law’,\textsuperscript{115} including state responsibility,\textsuperscript{116} the law of the sea,\textsuperscript{117} air and space law,\textsuperscript{118} and even human rights law.\textsuperscript{119} This substantive revision and expansion of the text will likely further strengthen the project’s overall relevance as well as its claim to authority. Yet, like the Microsoft paper, both iterations of the \textit{Tallinn Manual} project put forward standards of state behaviour and are avowedly state-centric in their approach.

4.3. \textbf{Differences and similarities}

Understandably, the two initiatives differ in important ways. The ‘norms’ proposed by Microsoft are clearly meant as broad suggestions only, meaning that states need to transform them into more specific commitments. For instance, norm 2 stipulates that ‘states should have a clear principle-based policy for handling product and service vulnerabilities that reflects a strong mandate to report them to vendors rather than to stockpile, buy, sell, or exploit them’.\textsuperscript{120} As recognised in the 2014 paper, such policies need to be developed by each individual state and tailored to the needs of that state.\textsuperscript{121}

The 2016 paper complements this general proposal by endorsing the existing best

\begin{itemize}
\item \textsuperscript{113} \textit{Tallinn Manual 2.0, supra} note 54, at 1–6.
\item \textsuperscript{114} See \textit{ibid.}, rules 68–154.
\item \textsuperscript{115} \textit{Ibid.}, at 2
\item \textsuperscript{116} \textit{Ibid.}, at 79–167.
\item \textsuperscript{117} \textit{Ibid.}, at 232–258.
\item \textsuperscript{118} \textit{Ibid.}, at 259–283.
\item \textsuperscript{119} \textit{Ibid.}, at 179–208.
\item \textsuperscript{120} McKay et al., \textit{supra} note 94, at 12; Charney et al., \textit{supra} note 99, at 7.
\item \textsuperscript{121} McKay et al., \textit{supra} note 94, at 12.
\end{itemize}
practice standards of co-ordinated vulnerability disclosure by the ICT industry.\textsuperscript{122} However, neither of the two texts puts forward any more detailed prescriptions for states.\textsuperscript{123}

By contrast, the Tallinn Manual ‘rules’ take on the more restrictive and specific form of purported customary legal obligations, which should simply be observed by states as binding without the need for their further endorsement or adaptation.\textsuperscript{124} In other words, both editions of the Manual have aimed to interpret how ‘extant legal norms’ apply to conduct in cyberspace,\textsuperscript{125} and not to ‘set forth lex ferenda’.\textsuperscript{126} Nonetheless, the detailed and frequently novel positions put forward by the Manuals blur the fuzzy line between norm interpretation and norm development.\textsuperscript{127} For example, Rule 99 (ex Rule 37) sets out the prohibition of cyber attacks against civilian objects in the context of an armed conflict.\textsuperscript{128} Both crucial terms – ‘cyber attacks’ as well as ‘civilian objects’ – are precisely defined by the Manual.\textsuperscript{129} Although some disagreements may persist about the application of the rule in specific circumstances,\textsuperscript{130} the content of the norm is sufficiently clear and precise to generate legal rights and obligations.

Yet, what initiatives like Microsoft’s white papers or the Tallinn Manual project share is their non-state origin and expressly non-binding nature. Microsoft was keenly aware of its proposal’s limitations in this respect and noted that it merely ‘encouraged’ states to set the proposed norms on the trajectory towards making them first ‘politically’ and then ‘legally’ binding.\textsuperscript{131} Similarly, the first edition of the Manual stated

\textsuperscript{122} Charney et al., supra note 99, at 8.
\textsuperscript{123} See also Smith, supra note 104, at 10 (calling on states to adopt a ‘global convention’ that would include norms from Microsoft’s 2014 and 2016 proposals).
\textsuperscript{124} Tallinn Manual 2.0, supra note 54, at 4; see also Tallinn Manual, supra note 54, at 6.
\textsuperscript{125} Tallinn Manual, supra note 54, at 1; Tallinn Manual 2.0, supra note 54, at 1.
\textsuperscript{126} Tallinn Manual, supra note 54, at 5; Tallinn Manual 2.0, supra note 54, at 3.
\textsuperscript{128} Tallinn Manual 2.0, supra note 54, at 434; see also Tallinn Manual, supra note 54, at 124.
\textsuperscript{129} Tallinn Manual 2.0, supra note 54, at 415 (definition of cyber attack) and at 435, para. 4 (definition of civilian objects); see also Tallinn Manual, supra note 54, at 91 (definition of cyber attack) and at 125, para. 3 (definition of civilian objects).
\textsuperscript{131} McKay et al., supra note 94, at 3; see also Smith, supra note 104, at 10 (‘And we then need to build on that with a global convention.’).
in its introduction that it was meant to be ‘a non-binding document’. As all of these texts are in their entirety the products of non-state initiatives, they could hardly amount to anything else. After all, with potential minor qualifications in the area of collective security, it is still true that only ‘the states are the legislators of the international legal system’.133

If these texts are non-binding, one might question their relevance from the perspective of international law altogether. Admittedly, their normativity (in the sense of the strength of their claim to authority134) is lower than that of international legal rules. Similarly, the ongoing International Law Commission (ILC) study on the Identification of Customary International Law notes in this regard in its draft conclusion 4(3) that conduct of actors other than states and international organizations ‘is not practice that contributes to the formation, or expression, of rules of customary international law’.135

But that does not mean that these efforts are wholly irrelevant for the formation of rules of international law, and even less do they document any supposed irrelevance of international law to the area of cyber security. On the contrary, non-state-driven initiatives of this kind potentially amount to ‘a vital intermediate stage towards a more rigorously binding system, permitting experiment and rapid modification’.136 Moreover, they render the law-making process more multilateral and inclusive than the traditional state-driven norm-making can ever be.137 As the ILC recognizes in the remainder of the cited draft conclusion, conduct of non-state actors may be relevant

132 Tallinn Manual, supra note 54, at 1. The sentence in question does not appear in the second edition of the Manual, however, there is nothing in its text suggesting that the Manual should not be seen as a non-binding document. Cf. Tallinn Manual 2.0, supra note 54, at 2 (‘Tallinn Manual 2.0 is not an official document … Tallinn Manual 2.0 must be understood only as an expression of the opinions of the two International Groups of Experts as to the state of the law.’).

133 S. Talmon, ‘The Security Council as World Legislature’, (2005) 99 AJIL 175, at 175. As the title of Professor Talmon’s article suggests, the qualification to that general observation arises from the Security Council’s recent practice of adopting resolutions containing obligations of general and abstract character. For a recent argument to the effect that non-state actors should be granted a role in international law-making, see A. Roberts and S. Sivakumaran, ‘Lawmaking by Nonstate Actors: Engaging Armed Groups in the Creation of International Humanitarian Law’, (2012) 37 Yale Journal of International Law 107. For more on the supposed ongoing surrender of states’ monopoly on regulatory power from the perspective of global governance, see Benvenisti, supra note 46, at 25 et seq.


137 Besson, supra note 134, at 170–171; Charlesworth, supra note 10, at 199.
when assessing the practice of states.\textsuperscript{138} Therefore, the crucial question is whether states decide to pick up the gauntlet thrown at them by their non-state counterparts.

5. Offline analogies: States at a critical juncture

5.1. Soft law and hard law

The current situation is certainly not without prior historical parallels. Cyberspace is not the first novel phenomenon to have resisted the development of global governance structures for some time after its emergence. A degree of waiting or stalling may even reflect states’ desire to obtain a better understanding of the new phenomenon’s strategic potential.\textsuperscript{139} Yet with states’ improved comprehension of the new situation, their willingness to subject themselves to binding rules usually increases, too. Even the domain of outer space was eventually subjected to a binding legal regime,\textsuperscript{140} despite the strong initial reluctance of the dominant spacefaring states.\textsuperscript{141}

Other domains with a higher number of participants may provide more appropriate analogies. A good example is the legal regime of the Antarctic region. Although its central instrument, the 1959 Antarctic Treaty,\textsuperscript{142} is a binding international agreement, it did not establish a comprehensive legal regime regulating all aspects of the Antarctic


\textsuperscript{141} See text at note 87, supra.

\textsuperscript{142} Antarctic Treaty, 402 UNTS 71 (1959).
environment. Instead, it allowed for and, to some extent, encouraged the adoption of ‘recommended measures’ and other types of non-binding norms for specific areas of international concern. Indeed, in the 1960s and 1970s, state representatives put forward many ‘soft norms’ of this kind, which shared the objective of preservation and conservation of living and non-living resources in Antarctica. Subsequently, some of these measures were implemented by many (though not all) parties to the Antarctic Treaty in their domestic law, paving the way towards the consolidation of the norms in question into international ‘hard law’. This finally materialized with the adoption of the 1991 Antarctic Environmental Protection Protocol, a complex binding instrument that has since been ratified by all key stakeholders.

Another useful parallel is the regulation of nuclear safety in international law. Although the first nuclear power plant in the world was launched already in 1954 in Obninsk, Soviet Union, it took over three decades until the first international conventions on nuclear safety were adopted. In the meantime, states were guided by non-binding safety standards and criteria, most of which were issued by the International Atomic Energy Agency (IAEA). Afterwards, nuclear safety conventions adopted in the 1980s and 1990s consolidated this emerging body of non-binding norms and made many of the relevant standards mandatory for all member states. Once again, states proceeded cautiously, slowly transforming into binding law those norms that were perceived as workable and acceptable by all stakeholders.

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143 Notably, the Antarctic Treaty did not expressly include the protection of the Antarctic environment among the objectives of the treaty regime. However, it did encourage the contracting parties to propose measures regarding, inter alia, the preservation and conservation of living resources in Antarctica. Ibid., Art. IX(1)(6).
144 Ibid., Art. IX(1).
146 See further ibid., at 179–181.
151 See note 149, supra.
152 See further N. Pelzer, ‘Learning the Hard Way: Did the Lessons Taught by the Chernobyl Nuclear Accident Contribute to Improving Nuclear Law?’, in the Joint Report by the OECD Nuclear Energy
Of course, there are important differences between these areas of international law and the cyber security domain. Perhaps most visibly, unlike the cyber norms initiatives analysed previously, the law-making processes relating to the environmental protection in Antarctica or the global nuclear safety had been predominantly state-driven. However, that should not detract from their value as examples demonstrating the time-tested trajectory of transformation of soft law norms into hard law rules.\textsuperscript{153}

After all, there is no doubt that non-state actors have, on many occasions, contributed to the adoption of binding multilateral international treaties. For instance, it is well known that the lawyer Raphael Lemkin played a central role\textsuperscript{154} in campaigning for and later drafting the 1948 Genocide Convention.\textsuperscript{155} Similarly, the 1984 Convention against Torture\textsuperscript{156} was adopted after years of international pressure led by Amnesty International.\textsuperscript{157} A yet more recent example is the 2008 Convention on Cluster Munitions,\textsuperscript{158} the agreement on which was catalysed by the personal presence of survivors of cluster munition attacks at the formal negotiations.\textsuperscript{159} To partially paraphrase Margaret Mead’s famous quote,\textsuperscript{160} non-state actors might not be the only thing that ever has changed international law, but they are certainly capable of doing so.\textsuperscript{161}

Therefore, instead of lamenting over a supposed crisis of international law, it is more appropriate to view the current situation as an intermediate stage on the way towards the generation of cyber ‘hard law’. Non-state-driven initiatives provide opportunities for states to identify overlaps with their strategic interests. In other words, these initiatives may serve as norm-making laboratories, allowing states to weigh the pros and cons of various proposals in their context and to decide on this

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\textsuperscript{153} See further A. Boyle and C. Chinkin, \textit{The Making of International Law} (2007), 211–229 (exploring the significance of soft law for international law-making).


\textsuperscript{156} Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, 1465 UNTS 85 (1984).


\textsuperscript{160} See text at note 1, supra.

\textsuperscript{161} For a recent comprehensive discussion of the diverse roles played by non-state actors on the international plane, see M. Noortmann, A. Reinisch, and C. Ryngaert (eds.), \textit{Non-State Actors in International Law} (2015).
basis which ones to endorse and which ones to reject. Their usefulness in this sense is confirmed by a 2015 report of the EastWest Institute, which helpfully maps out areas of convergence across various proposals of norms of state behaviour in cyberspace including those analysed in this article. As noted in the report, most norm-making initiatives agree on the general principles ensuring the stability and security of cyberspace as well as on the need for state co-operation in mitigating malicious cyber incidents.

5.2. Timeliness and attribution

Even if this article’s contention regarding the feasibility of the soft-to-hard-law pathway in cyberspace is accepted, one might still question whether it already is the right time for states to start taking specific legislative action. It is submitted that the key to this question of timeliness can be found by unpacking the so-called attribution problem, which relates to the difficulty in determining the identity or location of a cyber attacker or their intermediary. In fact, for some time, the attribution problem was rightly seen as an impediment to the development of effective legal regulation of cyber activities. It was argued that the prevailing anonymity online ‘makes it difficult – if not impossible – for rules on either cybercrime or cyberwar to regulate or deter.’ Indeed, without the victim states being at least theoretically capable of identifying the source of malicious cyber operations against them, any attempts to design rules aimed at constraining the perpetrators of such attacks would have very limited prospects of success.

However, recent technological progress has translated into increased confidence of states with respect to attribution of cyber activities. For instance, since 2012, the US has maintained that it possesses the capacity to locate its cyber adversaries and hold them accountable. It has subsequently put this position in practice by unequivocally

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163 Ibid., at 15.


attributing several high-profile cyber attacks to other states, including the 2014 ‘Sony hack’ to North Korea\textsuperscript{167} and the 2016 ‘DNC hack’ to Russia.\textsuperscript{168} In a recent publication, a US Department of Justice official made the link between cyber attribution and norm-making explicit: ‘[W]e will be able to use our ability to attribute malicious cyber activity to push other countries toward accepting and abiding by cyber norms.’\textsuperscript{169}

Other countries have soon followed suit. In 2014, Canada noted that it had robust systems in place allowing it to localize cyber intrusions, including those orchestrated by state-sponsored actors.\textsuperscript{170} In 2015, the United Kingdom stated it was ‘increasingly confident in our ability to determine from where attacks come’.\textsuperscript{171} In 2016, Germany’s Federal Office for the Protection of the Constitution reported that it had been able to attribute ‘electronic attacks’ against targets in Germany to attackers operating from China and Russia as well as to Iranian governmental agencies.\textsuperscript{172}

It remains debated to what extent these public statements should be taken at face value.\textsuperscript{173} When signalling confidence with respect to their attribution capabilities, states may admittedly be motivated also by other factors, including their legitimate


aim to deter future attacks in general.\textsuperscript{174} After all, to put the point at its lowest, deception is certainly not a behavioural pattern foreign to the cyber domain.\textsuperscript{175} Nevertheless, as a matter of general trend, maintaining anonymity online is becoming more difficult and actors in cyberspace may consequently be expected to give increased consideration to the regulation of cyber conduct.

In addition to these technical considerations, significant progress has also been made in the understanding of the legal standards of attribution as applied to online conduct.\textsuperscript{176} Although the existing law of state responsibility is certainly not without persisting uncertainties in relation to attribution of cyber operations to states, it can no longer be plausibly claimed that this area of law is unsuitable for conduct in cyberspace. On the basis of the foregoing, it can therefore be summarized that while it is probably correct that the attribution problem can at most be managed but not solved,\textsuperscript{177} these developments show that time may be ripe for states to endorse the regulatory and deterrent potential of international legal rules.

### 5.3. Way forward

Building on the emerging normative convergence identified above, states have today a unique opportunity to reclaim their central role in international law-making as far as the law of cyber security is concerned. Due to the complex nature of the field and the plurality of actors that populate it at present, this will likely not be a quick or a simple process. In this regard, states’ prospects of success will depend on their willingness to act in specific legislative ways that can be organized in a chronological order as short-, medium-, and long-term strategies.

In the more immediate future, states should become more forthcoming in expressing their opinion as to the interpretation of existing international law to cyber issues.\textsuperscript{178} This will in time enable the applicable \textit{opinio juris} to consolidate, thus

\textsuperscript{178} For other similar calls on states to be more proactive in expressing their cyber-specific \textit{opinio juris}, see, e.g., K. Ziolkowski, ‘General Principles of International Law as Applicable in Cyberspace’, in
facilitating the process of transformation of state power into obligations of customary
law.\footnote{Ziolkowski, supra note 92, 135 at 175; Schmitt and Vihul, supra note 29, at 47; Schmitt and Watts, supra note 33, at 230–231; Egan, supra note 32, at 6–7.} In order to increase their ability to meaningfully engage in this process, all states should make the development of cyber security expertise into one of their domestic
priorities; complete or update their national cyber security strategies;\footnote{Cf. Byers, supra note 10, at 18.} and streamline their decision-making leading into the adoption of positions on ambiguous legal
matters concerning cyber security.

Crucially, these steps may include the need to engage with those non-state actors
that are currently driving the ongoing norm-making efforts.\footnote{For existing national cyber security strategies, see NATO CCD COE, ‘Cyber Security Strategy Documents’, 7 March 2017, available at ccdcoe.org/cyber-security-strategy-documents.html.} States participating in
the UN GGE process acknowledged as much already in their 2013 report.\footnote{See Section 4, infra.} Similarly, Microsoft included a call on states to take industry input into account in its most recent white paper.\footnote{Charney et al., supra note 99, at 2; see also Smith, supra note 104, at 15 (highlighting the role of the industry in working with nation states on issues of cyber security).} Finally, in early 2016, over 50 states submitted their observations on the draft second edition of the Tallinn Manual to the international group of experts as part of the so-called Hague Process, a joint co-operative effort of the Dutch Ministry of
Foreign Affairs and NATO CCD COE.\footnote{NATO CCD COE, ‘Over 50 States Consult Tallinn Manual 2.0’, 2 February 2016, available at ccdcoe.org/over-50-states-consult-tallinn-manual-20.html.} This demonstrates states’ growing awareness of the importance of contributing to the international norm-making process.\footnote{Asser Institute, ‘The Tallinn Manual 2.0 and The Hague Process: From Cyber Warfare to Peacetime Regime’, 3 February 2016, available at www.asser.nl/media/2878/report-on-the-tallinn-manual-20-and-the-hague-process-3-feb-2016.pdf (‘As a result of the significant impact the Tallinn Manual had, States now want to know of the progress being made and be a part of the process.’).} However, the Hague Process consultations were held behind closed doors and the views submitted by the participating states have not and will not be made public.\footnote{NATO CCD COE, ‘Experts: Multiple International Law Regimes Apply to Cyber Operations’, 11 February 2016, available at ccdcoe.org/experts-multiple-international-law-regimes-apply-cyber-operations.html.} As such, they cannot be seen as contributing to the formation of customary international law per se.\footnote{International Law Association (ILA), Final Report of the Committee on the Formation of Customary (General) International Law: Statement of Principles Applicable to the Formation of General Customary International Law (2000), at 15, principle 5 and commentary.} Still, the fact that so many states felt ready and able to take part in the consultations suggests that to the extent states remain silent on their opinio
juris, this decision needs to be explained by factors other than the purported absence of considered legal views on their part.188

Although it is important for states to become more open in expressing their cyber opinio juris, that is but the necessary first step if they are to succeed in reclaiming a central role in international law-making. In the medium term, states should also aim to gradually overcome their current aversion to treaty commitments. There are some early signs that this process may already be underway. For example, in September 2015, the US and China concluded a ‘surprising’189 agreement to refrain from certain types of cyber espionage.190 A series of further non-binding bilateral agreements between the key players entered into in the recent period may also gradually pave the way towards legally binding cyber treaties.191

Finally, this iterative process of state-appropriated norm-making could in the long run quite plausibly result in the adoption of one or several comprehensive multilateral undertakings. These would likely commence with definitional matters to enable future consensus-building over more substantive issues.192 There are a number of terms with

188 See, e.g., D. Bethlehem, ‘The Secret Life of International Law’, (2012) 1 Cambridge Journal of International and Comparative Law 23, at 32–33 (discussing the complexity of considerations that states must take into account before deciding whether or not to make an official statement on a question of international law).

189 S. W. Harold, M. C. Libicki, and A. S. Cevallos, Getting to Yes with China in Cyberspace (2016), at x; see also ibid., at 86 (observing that the agreement was ‘not something that, to the best of our knowledge, any serious commentators on either side of the Pacific had predicted before the summit took place’).


192 See, e.g., Hathaway, supra note 29, at 877.
contested or unclear meaning, including such central notions as critical infrastructure,\textsuperscript{193} cyber attack, cyber warfare or cybercrime.\textsuperscript{194}

Once states agree on a shared definition of these concepts, the next step may be to turn to identification of the ‘low-hanging fruit’ of possible agreement on matters of substance. Their precise scope falls to be determined by further research. However, studies looking at overlaps between various norms proposals may provide some initial pointers.\textsuperscript{195} Equally, states may be willing to act—including by legislating on the international plane—against threats that affect them all. A good example in this regard may be botnets, in other words, networks of private computers infected by malware and controlled as a group without their owners’ knowledge.\textsuperscript{196} These have rightly been described as ‘a scourge to all’ and a multilateral consensus to outlaw the building of such systems may indeed be within the realm of the possible.\textsuperscript{197}

6. Conclusion

International cyber security law is at a critical juncture today. It is true that states’ hesitation to engage in the development and application of international law has generated a power vacuum allowing for the emergence of non-state norm-making initiatives. Still, it would be premature to speak of a situation of crisis.

Several historical parallels show that a mixture of initial soft-law approaches combined with a growing set of binding rules can provide a logical and functioning response to a novel phenomenon. In the twenty-first century, pluralisation of norm-making processes involving diverse state and non-state actors is a common feature at the international level and it need not be feared as such.\textsuperscript{198} Moreover, states have recently started to awake to the need to publicly express their views on how international law applies in cyberspace.\textsuperscript{199}

To return to the quotes cited at the start of this article, initiatives by small groups of thoughtful committed people from academia, industry or elsewhere should be

\textsuperscript{193} Shackelford, \textit{supra} note 89, at 194 (noting that national definitions of critical infrastructure vary broadly due to an array of socioeconomic and political factors); but see Harold, Libicki, and Cevallos, \textit{supra} note 189, at 71 (observing that US and Chinese stakeholders held ‘relatively similar views of the definition of critical infrastructure’).

\textsuperscript{194} Hathaway, \textit{supra} note 29, at 881–882.

\textsuperscript{195} See, e.g., Austin et al., \textit{supra} note 162.


\textsuperscript{197} Singer and Friedman, \textit{supra} note 34, at 187–188.

\textsuperscript{198} See d’Aspremont, \textit{supra} note 47, at 2–3.

\textsuperscript{199} See, e.g., Egan, \textit{supra} note 32, at 6–7.
welcomed because of their potential to change the world by steering the development of the law accordingly. What matters is whether states will decide to respond in a way that will reaffirm their position at the heart of the international legal system also when it comes to cyber security. It appears that at least some state representatives already realize that compliance with international law in fact frees them to do more, and do more legitimately, in cyberspace.

Hence, it remains to be seen whether this awareness will spread and gradually translate into states’ general willingness to also shape the content of the law by reclaiming their traditional central legislative role in this area. In this way, states’ conduct in the next few years will determine whether we will observe a gradual demise of inter-state governance of cyberspace or a fundamental recalibration of legal approaches with states taking centre stage once again. If they want to ensure that the existing power vacuum is not exploited in a way that might upset their ability to achieve their strategic and political goals, states should certainly not hesitate too long.

\[200\) Cf. Mead, supra note 1, at 12.
\[201\) Cf. Higgins, supra note 2, at 39.
\[202\) Cf. Koh, supra note 3, at 10; see also Egan, supra note 32, at 14.