International norms and the regulation of innovative warfare:

Applying lessons from history to emerging cyber warfare

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This thesis is presented for the degree of Doctor of Philosophy of The University of Western Australia

School of Social Sciences

Political Science and International Relations

2017

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ABSTRACT

There are presently several forms of innovative warfare poised to revolutionise the theory and practice of international conflict, security and strategy. Cyber warfare is one of these, and increasingly prominent in recent years at that. A rapidly growing number of strategically significant events over the past decade has accelerated states' effort grappling with this development, its implications and how to respond. Today, as in the past, cultivating international norms to regulate warfare is a useful tool available to key actors. Yet, the innovative nature of cyber and other novel forms of warfare necessitates the attempted normative regulation of phenomena that do not yet (fully) exist. This dilemma has important implications for processes of norm establishment and contestation, and for outcomes. This dissertation explores the puzzle: what does it mean to regulate innovative warfare in advance of deep understanding?

Naturally, the outcomes of present efforts remain uncertain. Thankfully we can draw upon history for analytical inspiration. Just over a century ago The Hague Conferences considered the regulation and prohibition of three innovative forms of warfare prior to their first major use: submarines, aerial bombardment, and shells releasing 'asphyxiating and deleterious' gases. This began a regulatory journey for all three that spanned much of the last century. This dissertation examines these precedents to derive relevant lessons for application to contemporary circumstances. To accomplish this, this dissertation explores the normative processes associated with each and their ramifications in two critical phases: norm establishment prior to widespread use, and contestation closely following first widespread use.

I argue that norm establishment in advance of first use encounters major obstacles regarding specificity and concordance. This culminates in either outright failure of norm establishment or, at best, 'incomplete' establishment wherein accepted suggestions of a norm are unaccompanied by detailed content, leaving operationalisation uncertain and reliant on states interpreting their content and application *in media res*. An examination of WWI demonstrates that as a consequence regulatory norms crafted in advance are highly unlikely to yield meaningful restraint in practice. I further argue that contestation of innovative warfare faces additional difficulties related to its uncertain nature, varied interpretations, and uneven experiences.

Having derived several historical lessons from detailed empirical analysis of the historical regulation of innovative warfare, I apply these to present prospects for regulating cyber warfare in advance. I conclude that establishing a regulatory norm addressing cyber warfare faces comparable challenges to those which impeded historical efforts, suggesting a comparably poor outcome. Furthermore, I argue that the variable, low-impact, and ephemeral nature of cyber warfare will contribute to enduring difficulties securing meaningful regulation.

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ACKNOWLEDGEMENTS

My deepest thanks go to Associate Professor Sarah Percy, Dr David Mickler, and Professor Mark Beeson for their guidance and patience throughout the various stages towards the completion of this thesis. Their support and instruction has been insightful, invaluable, and will always be greatly appreciated.

Special thanks also go to my parents for their unflinching support in suffering through untold rough drafts over the years, and to my friends and colleagues for their camaraderie.

This research was supported by an Australian Government Research Training Program (RTP) Scholarship.

CHAPTER 1: INTRODUCING THE PUZZLE AND THE PROCESS

Introduction

The first public indications of what would become known as Stuxnet came to light in mid-2010. This was a highly-sophisticated worm targeting one specific configuration of industrial control systems like a "guided missile," eventually destroying as many as 1,000 Iranian nuclear enrichment centrifuges.[1] Its sophistication led the first cyber security researchers to discover it to remark that "until a few days ago, people did not believe a direct attack like this was possible."[2] That it achieved the physical destruction of a well-defended target situated within a mountain meant that it appeared to many as a new phenomenon and a coming of age point for cyber warfare. While later analysis has cast some doubt on the full measure of Stuxnet's impact in practical terms, its symbolic significance has not diminished.[3] Cyber warfare joins the long tradition of new technologies entering war.

[1] Clayton quoting Langner, a German cyber-security who was one of the first to discover Stuxnet. Mark Clayton, 'Stuxnet Malware Is "Weapon" out to Destroy ... Iran's Bushehr Nuclear Plant?', *Christian Science Monitor*, 21 September 2010 <http://www.csmonitor.com/USA/2010/0921/Stuxnet-malware-is-weapon-out-to-destroy-Iran-s-Bushehr-nuclear-plant> [accessed 8 December 2012]; See also, David Albright, Paul Brannan and Christina Walrond, *Stuxnet Malware and Natanz: Update of ISIS December 2, 2010 Report* (Institute for Science and International Security, 15 February 2011).

[2] Clayton, quoting Langner. ibid. Clayton, 'Stuxnet Malware Is "Weapon" out to Destroy ... Iran's Bushehr Nuclear Plant?' In terms of the attack's sophistication, it could breach fully patched and secured computers. In itself this is not entirely unusual. So-called 'zero-day' vulnerabilities (i.e. those previously unknown until revealed by malicious use) are common enough. Stuxnet, however, used three rare and highly potent zero-days in conjunction with a collection of equally rare compromised security certificates from legitimate vendors, all while effectively hiding its presence for an extended period despite its visible effects. As such, it marked a sizable leap in sophistication unlike anything publicly known before.

[3] Pointing to the circumstantial evidence of its effect, Barzashka suggests that Stuxnet may instead have been far less effective than supposed, and possibly a net-benefit to Iran. Ivanka Barzashka, 'Are Cyber-Weapons Effective?', *The RUSI Journal*, 158:2 (2013), 48–56.

A parallel tradition accompanying new introductions to warfare comes in the form of efforts to regulate innovations before their use is widespread or accepted. For example, The Second Lateran Council under Pope Innocent II once famously attempted to ban the crossbow throughout Christian Europe, arguably the most significant military innovation of the 12th century, as it was believed it too effective in untrained hands and against plate armour, rendering it too great a threat to the social order.[4] In much the same fashion, efforts towards governing, regulating, or otherwise harnessing cyberspace are gathering steam.

Interestingly, these efforts aim to address behaviours and techniques that do not yet exist. Stuxnet and its ilk demonstrate that cyberattacks hold promise as a means of innovative warfare, but are perhaps analogous to the Wright brothers' first flight, not the substance and mature form of cyber conflict. That much is almost entirely unknown despite many efforts to guess at its shape. The vast gulf of technical and conceptual space separating the present from the future begs an immediate question; can we control cyber warfare in advance?

At present this represents a curious, ambitious, and somewhat maddening task—devising regulation for a method of conflict we know next to nothing about, have practically no experience of, and can only glimpse through often hyperbolic and deeply compromised imaginings of the future. No doubt there are significant advantages to regulating war, but the challenges surely remain immense. What form might this take, and how might it be achieved? Nye recently pondered the same question, suggesting some manner of normative approach surrounding targeting might offer the best chance.[5] At least one strand of conventional

[4] Stuart Croft, *Strategies of Arms Control: A History and Typology* (Manchester University Press, 1996), 24.

[5] Joseph S. Nye, 'A Normative Approach to Preventing Cyberwarfare', *Project Syndicate*, 2017 <https://www.project-syndicate.org/commentary/global-norms-to-prevent-cyberwarfare-by-joseph-s--nye-2017-03> [accessed 14 March 2017].

wisdom suggests that the task is impossible. Royse, a prominent theorist of aerial warfare of the interwar period, argued that:

> A weapon will be restricted in inverse proportion, more or less, to its effectiveness; that the more efficient a weapon or method of warfare the less likelihood there is of it being restricted in action by the rules of war.[6]

The puzzle at the heart of this dissertation is: what does it mean to regulate innovative warfare? Understanding how states have dealt with the regulation of innovation in the past will help with the regulation of current innovations such as cyber warfare. The history of this regulation illuminates a key debate regarding regulation of all military advances: are states engaged in this regulation cynically or do they genuinely seek control? This question also arises in cyber warfare.

Attempting to explore this puzzle directly through the lens of cyber warfare would present us with the same challenges states face when attempting regulation in advance, and so distinctly limit the analytical potential. To borrow from Dunn, "… to gain an understanding of security in the digital age, we take on an exceedingly difficult task. Not only has this issue hardly ever been addressed before, leaves us with barely any literature to base our analysis on—we also enter a realm of vast extent, indistinct boundaries, and a sloppy conceptual arsenal."[7] As our conceptual understandings in the domain are distinctly limited, and our theoretical frameworks have only just begun the immense task of engaging with the indistinct possibilities of cyberspace, we must look elsewhere.

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[6] Morton William Royse, *Aerial Bombardment and the International Regulations of Warfare* (H. Vinal, 1928), 131–32.

[7] Quoted in Johan Eriksson and Giampiero Giacomello, eds., *International Relations and Security in the Digital Age* (Taylor & Francis, 2007), 83.

Fortunately, we do not start with a blank slate. There are several prominent examples from the past of states grappling with the regulation of innovative warfare before its use became widespread. Just over a century ago in 1899 the great powers of the world met in The Hague to codify the laws of war and discuss disarmament. Included in discussions were proposals to completely prohibit the use of aircraft (though limited to balloons at that early stage and later amended to retroactively include fixed wing aircraft after their invention), submarines, and asphyxiating shells in warfare—crucially, all in advance of their first meaningful usage. These amounted to the major innovations of the day in warfare, two of which introduced entirely new spatial domains (beneath the waves, and the skies above), while the third fell almost entirely outside existing conceptions of war. Following the use of all three in WWI, the interbellum saw renewed attempts at regulation.

These three cases offer suitably analogous examples of the regulation of emerging warfare, norm establishment in advance, and the contestation of those norms, and they share a broader environment involving many of the same major actors simultaneously, under the same impetuses. Given the importance of international climate, when cases share a surrounding environment and undergo regulatory discussions in parallel, potential idiosyncratic variances are minimised. As such, they represent a strong empirical basis for the dissertation from which to explore the nature of regulation in advance.

This dissertation therefore considers what these three past cases can tell us about the process of regulating innovative warfare, and how it might be applied to cyber warfare today.

Approach

The regulation of innovative warfare prior to its widespread use and/or prior to fuller understandings of that warfare presents an interesting challenge. The task of regulating and governing international actors renders this challenge fundamentally a normative one, given the 'anarchic' nature of international relations.[8] Thus, regulation requires states to attempt the creation, institutionalisation, and ultimate implementation of a regulatory norm devised prior to the full development of the phenomenon it aims to govern.

This situation offers significant theoretical and practical benefits. First, from a contemporary policy perspective, a better understanding of such a challenging task and its pitfalls has obvious relevance and practical application to any present or future efforts ranging well beyond the immediate case of cyber warfare. Second, from an International Relations (IR) perspective this presents a useful and informative conceptual lens through which to explore the circumstances involved. There is ample IR scholarship discussing norms and their role in the regulation of warfare, however to date the literature does not address these processes as applied to innovative warfare before its use is widespread.[9] Therefore, given this absence, we lack directly useful theoretical literature for application to cyber warfare or other comparable cases in the future. How do states attempt such a task? What does it mean for the processes

[8] Alexander Wendt, 'Anarchy Is What States Make of It: The Social Construction of Power Politics', *International Organization*, 46:02 (1992), 391–425.

[9] Ward Thomas, *The Ethics of Destruction: Norms and Force in International Relations* (Cornell University Press, 2001); Geoffrey Best, *Cultural Norms, War and the Environment* (Oxford University Press, 1988); Jeffrey W. Legro, *Cooperation Under Fire: Anglo-German Restraint During World War II* (Cornell University Press, 1995); Jeffrey W. Legro, 'Which Norms Matter? Revisiting the "Failure" of Internationalism', *International Organization*, 51:01 (1997), 31–63; Emanuel Adler, 'The Spread of Security Communities: Communities of Practice, Self-Restraint, and NATO's Post—Cold War Transformation', *European Journal of International Relations*, 14:2 (2008), 195–230; See, for example, Friedrich V. Kratochwil, *Rules, Norms, and Decisions: On the Conditions of Practical and Legal Reasoning in International Relations and Domestic Affairs* (Cambridge University Press, 1991).

of emergence, contestation, and influence? How do such norms fare when tested? This dissertation aims to shed light on these theoretical questions. Finally, a study of these questions in relation to historical cases promises some insight into where present efforts concerning the regulation of cyber warfare may lead.

In approaching these questions this dissertation also sits at the nexus of two broad disciplines and academic traditions: International Relations and Military History. As the empirical substance of this dissertation sits firmly in the latter, I adopt an analytical approach and style to match in the empirical chapters, which comprise the bulk of the dissertation. However, this remains an International Relations thesis with its focus on international norms. Thus, for the sake of expediency and parsimony in what is ultimately a comparative International Relations work, I do not dive fully into the vast and immeasurable depth of primary source material available or explore the minutia events to the depth one might typically expect of a pure history thesis.

The focus of this dissertation is emerging and innovative warfare, a concept which requires brief exploration. Without the benefit of hindsight, there is rarely a simple or single point where we can distinguish between 'emerging' and 'emerged'. Rosen offers a definition of innovations in warfare as 'those requiring major shifts in doctrine or practice.'[10] I adopt this definition of innovative warfare with the further understanding that such shifts tend to unfold over time. How long depends on the manner and scope of the innovation—i.e. whether it amounts to a new twist on an existing domain, or is an entirely new domain for exploitation, comprehension, and ultimate reconciliation with warfare. In either case, it will take time and

[10] Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Cornell University Press, 1994).

experience for actors to comprehend the fundamental nature of an innovation that is likely to extend beyond its first battlefield exposure, especially in cases involving highly novel domains of warfare. While this process is ongoing—with doctrine and practice still undergoing major shifts of accommodation—the form of warfare can be said to be innovative. I use this distinction to delineate between conventional cases of regulation and those more directly analogous to cyber warfare and other similar cases.

For one final and brief acknowledgment, the scholarship in this dissertation addresses a highly contemporary subject. Cyber warfare is still very much an emerging phenomenon with new developments, including major changes in capability and form, arising regularly. This presents an obvious problem in that our analytical efforts are rapidly dated by new developments and discoveries. I compensate for this to some extent through the dissertation's historically comparative approach, but it nevertheless remains a difficulty of covering recent events that must be borne in mind. Accordingly, I note that this dissertation only addresses matters up until early-mid 2017.

Research questions

Having offered an outline of the puzzle and a method of approach to its study, I turn to the specific research questions used to guide the historical elements of the research project:

1. How does regulating an innovative weapon or technique of war before its widespread use and/or understanding affect the processes of norm establishment and contestation? I refer to this as regulation 'in advance'.
2. Is such regulation effective?

These questions guide the examination of the historical precedents. With the benefit of that empirical investigation I return to the case of emerging cyber warfare and explore present trends in light of past lessons. Guiding that component of the research project is the following question:

1. How does the regulation of cyber warfare in advance compare with the lessons of past cases?

Ultimately, this dissertation argues that the establishment and contestation of innovative warfare faces major barriers in identifying and developing norm content prior to widespread use. These barriers result in significant ambiguity regarding any regulatory norms created in advance, the consequence of which is probable failure to constrain state behaviour in major war. Subsequent contestation must then challenge the established practice included in this outcome, whilst approaching a form of war that is still not evenly or entirely understood. The outcome of contestation, I argue, is highly contingent on a range of external factors.

Conceptual and theoretical foundations: Exploring regulatory norms addressing innovative warfare

With the research puzzle identified and the approach detailed, it is now necessary to develop the theoretical and conceptual foundations to inform that analysis. I establish the foundations for further exploration of this normative process in three parts. First, drawing on constructivist insights, I examine three critical concepts required to understand norms and regulation occurring in advance. I argue that there are two critical phases in examining the

regulation of innovative warfare: establishment prior to widespread use, and contestation in the immediate wake of widespread use. Second, I examine the implications of regulating in advance on norm evolution and change. Third, I step beyond the direct implications of norm evolution and consider several dynamics that are predominantly external to norms and regulation, but which also have strong influence on the outcomes of attempted regulatory norms addressing innovative warfare.

Before delving further into the distinctly constructivist foundations of this examination and its execution, it is necessary to first address the considerable insight that other theoretical approaches may offer. One might easily note that the outcomes I examine in the coming chapters can be (and already are) well accounted for by existing scholarship, all with relatively little need for constructivist frameworks. Axelrod's widely cited *Evolution of Cooperation* is one such prominent example addressing a similar slice of history.[11] A more rationalist or realist argument—such as Axelrod's—pointing to logics of preservation and raw calculus rather than logics of appropriateness offers a compelling accounting for the observed decision-making surrounding the innovations in question. Robert's *The Military Revolution,* then built upon by Parker in a later work of the same name, offers a further relevant perspective on the adoption of military innovation that does not directly invoke constructivist concepts.[12] This example is directly relevant to cyber warfare as the ultimate concern of this thesis in its examination of the discourse oft-dubbed the 'revolution in military affairs' which concerns itself extensively with the integration of information technology—including cyber as

[11] Robert Axelrod, *The Evolution of Cooperation: Revised Edition* (Hachette UK, 2009).
[12] Michael Roberts. The Military Revolution, 1560–1660. (1956) reprinted in Clifford J. Rogers, *The Military Revolution Debate: Readings On The Military Transformation Of Early Modern Europe* (Avalon Publishing, 1995); Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800* (Cambridge University Press, 1996).

it has evolved—since the 1970s.[13] Importantly, these works include extensive discussions on the tactical and strategic decisions to forego the use of novel weapons. The detail of the examinations that follow in this dissertation largely aligns with these models, often finding decisions for restraint that are—at least in part—justified by rationalist logics of advantage/disadvantage alongside wider factors of doctrine and trend.

However, it is also clear that strictly rationalist dynamics are not seriously at work during the periods of in advance norm entrepreneurship also examined throughout this dissertation. Though states engaged with the normative process strategically, a strictly rationalist perspective suggests that they would not engage at all, for why concede or contemplate any limitations in the face of such uncertainty and in response to unproven concerns. Furthermore, however insightful those discussions are in retrospect, a clear trend that emerges in the chapters to come is that contemporary actors frequently fail to accurately or adequately assess the impact of innovative warfare in advance, or even *in media res.* Thus, there is more at work here than purely rationalist explanations can account for.

A focus on norms and norm entrepreneurship which precede the widespread use and understanding of innovative warfare offers another piece of the puzzle. Not only are states engaging in this behaviour prior to conflict, but norms explored in advance clearly still play a role even when considering immediate battlefield and wartime decision-making where rationalist explanations offer otherwise compelling accounts. In essence, the presence of norm entrepreneurship in advance—whatever its outcome—fundamentally alters the menu of options. Accompanying the plethora of choices available to states in war is the knowledge

[13] For example, see: Stephen Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton University Press, 2010); See also: E. Halpin and others, eds., *Cyberwar, Netwar and the Revolution in Military Affairs* (Palgrave Macmillan, 2006).

that some of those options now come with a normative dimension that may include social, political, diplomatic, and legal costs. The greater the robustness of relevant norms, the more the menu is altered in turn. Therefore, achieving a fuller understanding of the dimension shaping those options on the menu is imperative and complementary to an oversight in the existing scholarship.

Given the focus on norms, a constructivist framework clearly offers the best theoretical foundation. Drawing on constructivist literature, I argue in this chapter that norm establishment in advance is particularly prone to either weakness or initial failure. It further follows that weakened norms of this nature emerging from in advance processes will impose little constraint on actor behaviour. Thus, other logics—such as those described by more strictly rationalist frameworks—are prone to carry the day in practical terms in the absence of strong normative constraints, explaining the ease with which the normative dimension has been overlooked. Consequently, rather than competing or conflicting with the works of Axelrod, Roberts, Parker, Biddle, and a host of others, this dissertation functions instead as a complement in exploring that missing piece of the puzzle. However diverse they may appear, realist and constructivist analytical perspectives are actually quite complementary, as Jackson and Nexon, Barkin, Reus-Smit, and Buzan all well note.[14]

Perhaps understandably—given the likelihood of failure, limited impact, and overshadowing by the enormity of the events surrounding them—in advance norms are understudied. Yet

[14] Patrick T. Jackson and others, 'Bridging the Gap: Toward a Realist-Constructivist Dialogue', *International Studies Review*, 6:2 (2004), 337–52; See also: Patrick T. Jackson and Daniel H. Nexon, 'International Theory in a Post-Paradigmatic Era: From Substantive Wagers to Scientific Ontologies', *European Journal of International Relations*, 19:3 (2013), 543–65; Patrick T. Jackson and Daniel H. Nexon, 'Paradigmatic Faults in International-Relations Theory', *International Studies Quarterly*, 53:4 (2009), 907–30; J. Samuel Barkin, 'Realist Constructivism', *International Studies Review*, 5:3 (2003), 325–42; Christian Reus-Smit, 'Imagining Society: Constructivism and the English School', *British Journal of Politics & International Relations*, 4:3 (2002), 487–509; Barry Buzan, 'The English School: An Underexploited Resource in IR', *Review of International Studies*, 27:3 (2001), 471–88.

they remain an intriguing case of norm establishment from which we can learn a great deal. In addition to the theoretical implications, the legacy of those initially doomed efforts—including their lacklustre impact when first tested—constitutes a significant component of later norm development in each case. All three innovations exhibit relatively robust present-day regulatory norms built on that legacy of initial failure. After all, norm violation does not automatically equate to norm death. Violation can instead invite responses that strengthen the norm, or function as a form of contestation that refines norm content rather than eroding it outright. Perhaps, as Percy argues, it is more useful to think about violation in terms of norm change, rather than norm death and regress as we often do.[15]

Accordingly, I explore each historical case to the extent necessary to achieve an understanding of the norm's condition and influence, while leaving a broader comprehensive accounting of outcomes to the established literature. With this framing established, it is now necessary to conceptualise norms and then explore how their formation and state may differ under in advance circumstances.

Conceptualising norms

To explore the ramifications of creating norms in advance of their subject, it is first necessary to understand the norm life-cycle. In their widely-cited article, Finnemore and Sikkink describe the norm life cycle as a three-stage process; norm emergence, followed by norm

[15] Sarah Percy, '4: The Unimplemented Norm', in *Implementation and World Politics: How International Norms Change Practice*, ed. by Alexander Betts and Phil Orchard (Oxford University Press, 2014), 68–84; For a further discussion of norm 'death', see: Ryder McKeown, 'Norm Regress: US Revisionism and the Slow Death of the Torture Norm', *International Relations*, 23:1 (2009), 5–25.

cascade, and finally internalisation. They argue that between the first two stages is a tipping point "at which a critical mass of relevant state actors adopt the norm" resulting in a further cascade of support.[16] Since this landmark work, much scholarship has expanded and refined the model.[17]

Norms do not necessarily progress through all of these phases, nor do they do so in a linear fashion. They may regress, or even decay/degenerate.[18] As this thesis focusses primarily on norms during their emergence—typically prior to internalisation—I limit my analysis to the phases of initial establishment and the subsequent development of that idea occurring during norm emergence. These are the critical phases of regulating innovative warfare: establishment in advance and norm development via contestation while the innovation is still emerging.

Norm establishment addresses the genesis period in which configurations of ideas and expectations come together to form a cohesive behavioural suggestion, which may then gain status as a cohesive norm with a quality of 'oughtness'.[19] The source of establishment varies. At times norms may emerge as consciously created responses by norm entrepreneurs addressing some recognised problem, or collection of problems, with a corresponding behavioural expectation. Similarly, exogenous shocks and crises can encourage the deliberate

[16] Martha Finnemore and Kathryn Sikkink, 'International Norm Dynamics and Political Change', *International Organization*, 52:04 (1998), 895.
[17] See, for example, Mona Lena Krook and Jacqui True, 'Rethinking the Life Cycles of International Norms: The United Nations and the Global Promotion of Gender Equality', *European Journal of International Relations*, 18:1 (2012), 103–27; Amitav Acharya, 'How Ideas Spread: Whose Norms Matter? Norm Localization and Institutional Change in Asian Regionalism', *International Organization*, 58:02 (2004), 239–275; Wayne Sandholtz, 'Dynamics of International Norm Change: Rules against Wartime Plunder', *European Journal of International Relations*, 14:1 (2008), 101–31.
[18] See, for example: McKeown, 'Norm Regress: US Revisionism and the Slow Death of the Torture Norm', 5–25; Diana Panke and Ulrich Petersohn, 'Why International Norms Disappear Sometimes', *European Journal of International Relations*, 18:4 (2012), 719–42.
[19] Finnemore describes 'oughtness' as an essential component of a norm. A suggestion that its content ought to be followed. Martha Finnemore, 'Are Legal Norms Distinctive', *NYUJ Int'l L. & Pol.*, 32 (1999), 699–705.

creation of new norms to serve as regulatory mechanisms.[20] These are most directly analogous to regulating warfare in advance, in that states perceive a problem and consciously attempt the creation of a norm in response. However, the majority of norm emergence appears less consciously directed.[21] Most norms emerge from the interaction of actors and structures through contested discursive negotiations yielding mutual understandings that may create new norms, or reinterpret old ones.[22]

Whatever the source, norms emerge from and in relation to existing ideas, expectations, and other norms. In Kowert and Legro's words, "norms are rarely (if ever) created de novo."[23] Congruency with the existing pool of norms and the ability of new norms to 'resonate' with other domestic and international norms therefore constitutes an important trait.[24] Moreover, the trajectory of that wider pool of norms has an influence on the emergence of new norms. Disarmament periods, for example, are arguably more conducive to new norms expanding the regulation of warfare than periods of re-armament or amidst international tensions.

Congruency with domestic structures plays a particularly important role as the influence of international norms is conditioned by those structures, understood through them, and enacted by them in turn.[25] Specific to warfare, new norms must negotiate with a refined pool

[20] Paul Kowert and Jeffrey W. Legro, 'Chapter 12. Norms Identity, and Their Limits: A Theoretical Reprise', in *The Culture of National Security: Norms and Identity in World Politics.* (Columbia University Press, 1996), 470–74; Finnemore and Sikkink, 'International Norm Dynamics and Political Change', 909.
[21] Annika Björkdahl, 'Norms in International Relations: Some Conceptual and Methodological Reflections', *Cambridge Review of International Affairs*, 15:1 (2002), 16–17.
[22] Kowert and Legro, 'Chapter 12. Norms Identity, and Their Limits: A Theoretical Reprise', 474–75.
[23] Kowert and Legro, 'Chapter 12. Norms Identity, and Their Limits: A Theoretical Reprise', 469. Though this also introduces some tautological concerns. See: Martha Finnemore and Kathryn Sikkink, 'International Norm Dynamics and Political Change', *International Organization*, 52:04 (1998), 897; Richard M. Price, 'Reversing the Gun Sights: Transnational Civil Society Targets Land Mines', *International Organization*, 52:03 (1998), 628.
[24] See: Price, 'Reversing the Gun Sights', 616.
[25] See, for example, Jeffrey T. Checkel, 'Norms, Institutions, and National Identity in Contemporary Europe', *International Studies Quarterly*, 43:1 (1999), 83–114; Legro, 'Which Norms Matter?', 31–63; Thomas Risse-Kappen, 'Ideas Do Not Float Freely: Transnational Coalitions, Domestic Structures, and the End of the Cold War', *International Organization*, 48:2 (1994), 185–214; Peter J Katzenstein, *The Culture of National Security: Norms and Identity in World Politics* (Columbia University Press, 1996).

of existing norms pertaining to concepts such as Just War, and each state's interpretation of those norms. It is particularly worth noting that this framework operates on the principle that "even when it demands a strong critique of particular acts of war, it is the doctrine of people who do expect to exercise power and use force. … fighting in itself cannot be morally impermissible. A Just War is meant to be, and has to be, a war that is possible to fight."[26] Consequently, the establishment of a new norm of war must find salience not just with other existing norms, but also with the expectation that any limitations on warfare be themselves limited in nature. The greater the distance from these expectations, and the lesser the congruence with surrounding norms, the greater the justifications required.

A development phase follows norm establishment, where the content of a norm continues its evolution in response to influences from events, actors, and entrepreneurs via the ongoing process of contestation. At this point the norm may begin to spread or diffuse significantly throughout the international community—possibly to the point of a cascade—through processes of socialisation, emulation and coercion, among others. It is important to note that throughout this process a norm's content remains "in a constant state of dynamism and flux. Norms are born anew every day as actors instantiate them through their beliefs and actions."[27] Again, this emphasises the role of domestic structures in continually parsing norm content. Fundamentally, norms are not fixed or exogenously given. Rather they are a product of perpetual intersubjective interaction and contestation which necessarily involves a substantial degree of ambiguity, enabling norm spread through diverse communities of

[26] Michael Walzer, *Arguing About War* (Yale University Press, 2008), 14.
[27] Matthew J. Hoffmann, 'Norms and Social Constructivism in International Relations', *The International Studies Encyclopaedia*, 2010, 5419.

international actors as each actor constructs their own version of the norm from that ambiguity.[28]

With this basic conception of norm phases in mind, and having identified establishment and development as two relevant phases in the norm life cycle for regulating norms in advance, there are three critical concepts needed in order to explore regulating norms in advance: norm specificity and concordance, the processes of norm influence—particularly implementation—and the mechanisms of contestation. I consider each in turn to achieve two ends; to clarify the underlying analytical framework guiding this dissertation, and to provide a point of comparison against which to contrast regulative norms emerging prior to and alongside a form of innovative warfare.

Norm specificity and concordance

Legro develops a tripartite conceptualisation to explore the robustness of a given norm, with a mind to assessing its influence on state behaviour when tested, namely: specificity, concordance, and durability.[29] This dissertation focuses on specificity and concordance.[30] In Legro's words, "Specificity refers to how well the guidelines for restraint and use are defined and understood. … Concordance means how widely accepted the rules are in diplomatic

[28] Krook and True, 'Rethinking the Life Cycles of International Norms', 103–27.
[29] Legro, 'Which Norms Matter?', 31–63; See also: Jeffrey W. Legro, *Cooperation under Fire: Anglo-German Restraint during World War II (Cornell Studies in Security Affairs)*, 1st Kindle Edition (Cornell University Press, 2013).
[30] Legro's third conceptual component—durability—is less immediately useful in analysing innovative warfare prior to its use as it is a measure of support over time as reflected in the history of the subject norm. The application of durability to norm establishment occurring in advance of that history is obviously hamstrung by the lack of history.

discussions and treaties (that is, the degree of intersubjective agreement)."[31] If a norm is simultaneously clearly and thoroughly specified, has a history of strong endorsement including acts of redress for breach, and sustains a high degree of intersubjective agreement between actors, it can be said to be highly robust. Conversely, a weaker showing in one or more of these axes indicates a less robust norm which is less likely, in turn, to influence actor behaviour and more likely to be susceptible to decay.

This framing is useful in contemplating the regulation of warfare in advance. Efforts to establish a regulatory norm addressing an innovative form of warfare are, in effect, steps to develop specificity and concordance around that specificity. Put another way, entrepreneurs seek to draft guidelines for restraint in the use of new means and techniques of warfare, and to secure shared understandings of those guidelines along with commitments from states to their observation in combat. Viewing norm establishment and contestation along these two axes enables a clearer conceptualisation of the internal characteristics of norms during establishment and contestation, and greater insight into the processes therein.

Importantly, the focus of this dissertation is not so much the concept of norm robustness as the elements comprising it. Here, Legro's conceptualisation presents the clearest and most useful analytical rubric for exploring the development of regulatory norms addressing innovative warfare and their internal characteristics, particularly in advance. Specificity and concordance take precedence as they offer an insightful framing of the internal dynamics of norm establishment and the grounds for contestation, meaning they provide useful axes for assessing shifts in the normative content attached to an innovative method of warfare as it evolves.

[31] Ibid. pp. 34-5.

Pathways of norm influence—institutionalisation and implementation

Another critical concept that requires further consideration before proceeding is how norms influence or constrain states. Finnemore and Sikkink's model offers a starting point in analytically distinguishing between two such mechanisms: institutionalisation and implementation. Institutionalisation operates as an international process, where implementation is domestic. Institutionalisation in the context of regulation in advance is a signpost of maturity in a norm's emergence. Taken in isolation, attaining sufficient prominence to support institutionalisation is a strong signifier of successful establishment. Moreover, even attempted institutionalisation has the capacity to drive towards norm cascade by clarifying the content of the norm through codification, while also formalising major commitments to the norm which secure its maintenance. However, the regulation of conduct by these means lacks the enforcement mechanisms applicable in war, and although institutionalisation can be significant, it is not a potent path of norm influence with respect to warfare.[32] Instead, as I have begun to argue in this chapter, the influence of domestic structures is far more important in understanding the influence of norms related to conduct in war.

As a brief aside on institutionalisation, it is worth noting that levels of commitment from states in pursuing or entertaining the regulation of warfare may be half-hearted or opportunistic, which partially explains the variances observed throughout the history examined in subsequent chapters. To some extent this explanation rings true, but half-

[32] Finnemore and Sikkink, 'International Norm Dynamics and Political Change', 900.

hearted participation by some or many states is common enough across regulations and norms. While it partially accounts for any variance in outcomes, it simultaneously offers little insight into the specific challenges inherent in attempting to regulate a norm in advance. Moreover, it sheds little light on why those variances of enthusiasm might exist, details of their finer contours, where they originate, or how they may change state practice beyond immediate negotiations. For that insight, I argue that we should focus on a deeper understanding of the domestic domain, implementation (as I discuss below), and the ramifications of acting while the innovation targeted by the norm remains in a state of flux. Therefore, while institutionalisation and commitments to it offer a useful milestone, an accessible snapshot of a norm's content, and an insight into states' degrees of enthusiasm and preferences over that content from contestation, it has limited usefulness when examining norms tied to innovative warfare.

Returning to implementation, this represents a stronger path of norm influence relating to conduct in war, and is therefore the more informative and insightful lens through which this dissertation focuses. Implementation is a parallel process to institutionalisation operating at the domestic level within each state.[33] As each state encounters a norm, it will likely arrive at a bespoke interpretation of the norm and its content. Consequently, each state will develop differing 'meanings-in-use' and will apply those diverse meanings even more differently in practice.[34] Moreover, ongoing intersubjective negotiation over a norm's content occurs domestically just as it does internationally—thus implementation is a highly significant arena of contestation with direct effect on how a norm influences behaviour in practice.

[33] Alexander Betts and Phil Orchard, eds., *Implementation and World Politics: How International Norms Change Practice* (Oxford University Press, 2014).
[34] Antje Wiener, 'Enacting Meaning-in-Use: Qualitative Research on Norms and International Relations', *Review of International Studies*, 35:01 (2009), 175–193.

Furthermore, the international position of each state is drawn from its own domestic structures, and the reception of a norm domestically shapes a state's position at the international level just as much as the reverse. The wide range of attitudes, interests, and structures between states leads to an immense degree of variance, and the effects of legalisation (however hard or soft), internalisation, and implementation will likewise differ immensely.[35] This helps to account for the variance we frequently see in norm influence, despite the appearance of agreement at the international level and the presence of significant legalisation. Thus, whether and how a norm is implemented constitutes the primary dimension of norm influence on state practice in warfare, and is therefore important in understanding how regulation in advance functions and the likelihood of it altering conduct in warfare.

However, implementation is also a largely understudied mechanism. Until recently much of the scholarship focused on institutionalisation, and then often conflated implementation-as-mechanism with compliance processes attached to internalisation.[36] Betts and Orchard argue that this oversight constitutes an institutionalisation-implementation gap in the IR literature.[37] Nevertheless, implementation remains the best place to look to examine the influence of regulating norms in advance on actual outcomes, as domestic structures will exert the greatest influence on the use and non-use of innovations in warfare—in military organisations especially. Thankfully, Betts and Orchard offer a conceptual starting point in the form of three (somewhat overlapping) structural dimensions to implementation: ideational,

[35] Abbott et. al. directly note that legalisation-as-concept 'does not include the degree to which rules are actually implemented domestically or to which states comply with them.' See: Kenneth W. Abbott and others, 'The Concept of Legalization', *International Organization*, 54:3 (2000), 402.
[36] Harald Muller and Carmen Wunderlich, *Norm Dynamics in Multilateral Arms Control: Interests, Conflicts, and Justice* (University of Georgia Press, 2013), chap. 1.
[37] Betts and Orchard, *Implementation and World Politics*, chap. 1.

material, and institutional.[38] In other words, norms are constituted and constrained variably in each state along each of those axes subject to their unique circumstances and characteristics. I use this in the coming chapters to inform understandings of how international norms can differ between states subject to those factors, gaining a greater insight into the reception of emerging norms and their influence on practice in war.

This also presents a challenge for the present analysis. Within each state is a vast, complicated, and bespoke policy apparatus along with a plethora of individual actors whose depths are far too great to plumb—especially across three innovative forms of war amidst a tumultuous period of change and disruption spanning several decades. Furthermore, the myriad of personal and political motivations behind norm entrepreneurship are almost certainly non-transitive within each state's institutions and policy apparatus, to say nothing of being simply too far abstracted by the time they reach international discussion and regulatory negotiation. In essence, the conduct of major states in warfare and international treaty negotiations is typically ordered and hierarchical and so subsumes and abstracts the personal motivations and beliefs of most involved. Thus, we can generally treat states as relatively unitary actors for most purposes without major analytical detriment. I selectively examine individual figures throughout the coming examination where their influence is particularly pronounced and sufficient to warrant closer attention, but while the details and motivations of the many individuals involved is—of course—fascinating, the breadth of the task at hand means that this level of fine detail must regrettably be foregone.

In sum, this brief foundation provides the necessary theoretical and conceptual backbone to inform further discussion. I now return to the matter of regulatory norms in advance. As

[38] Betts and Orchard, *Implementation and World Politics*, 13–14.

innovation is an open-ended process with differing dynamics throughout, I divide the study of regulatory norms addressing innovative warfare in advance into two critical phases: establishment prior to widespread use, and contestation immediately following widespread use. Thus, establishment addresses innovations recognised but unseen in practice, while contestation addresses innovations seen but not yet understood. I structure my empirical analysis along these lines accordingly: first examining establishment and its outcome, then contestation and its outcome, before finally considering a prospective cyber regulatory norm.

Before embarking on a detailed empirical examination, however, it is important to establish how we might expect addressing innovative warfare prior to, and immediately following, its introduction to alter the underlying processes of establishment and contestation as we understand them in theory.

The ramifications of addressing innovative warfare

Norm establishment in advance of its subject will no doubt differ considerably. If norms emerge from interactions between actors and systems, processes of discursive negotiation and/or conscious construction in response to shared problems in time, undergoing all of this before knowledge of the target must alter the process fundamentally. The shared problem, systemic interaction, or other impetus driving states towards establishment also drives them to tackle something unavoidably unknown, as the subject does not yet exist meaningfully in practice. Moreover, if congruency with what came before is significant, then how can major innovations that are substantial shifts in doctrine and/or practice which haven't yet occurred be congruent with what they are changing? Or, for that matter, find easy accommodation

within discourse and negotiations premised on the very frameworks they often proceed to alter?

Following the norm life-cycle model detailed above and the analytical distinction of two critical phases, I approach this discussion in two parts: a) how norm establishment differs under these circumstances and b) how later contestation during the development phase is in turn altered. These two critical phases mirror the structure of the chapters that follow. Chapters 2 and 3 examine establishment and its outcomes in WWI, while Chapters 4 and 5 consider contestation following the first widespread use and as each innovative method emerges into doctrine and/or practice.

Overall, I argue that the cumulative effect on norm processes of operating in advance of the phenomenon they aim to govern is that resulting norms are likely to undergo fragile and incomplete establishment—at best—and that their longer-term fate is particularly prone to contingent, longitudinal and external factors.

How does norm establishment in advance differ?

In considering norm establishment prior to widespread use, I employ the two directly applicable components of Legro's tripartite conceptualisation of norm robustness (specificity and concordance) as an analytical rubric and organisational tool.

Specificity

Specificity refers to the degree of understanding in a norm's guidelines which governs use and non-use. Understandably, norm establishment in advance has a dramatic effect on the level of specificity that is achievable. In essence it is very difficult to accurately predict the future at the best of times, and war is an inherently unpredictable business which only increases that difficulty. To borrow from Clausewitz, "In war everything is uncertain and variable, intertwined with psychological forces and effects, and the product of a continuous interaction of opposites."[39] Innovations that include entirely new domains of conflict only amplify the uncertainty and variability already deeply infused in war. Perhaps even more troubling are those aspects which go beyond uncertainty in remaining entirely unrecognised ahead of time. As discussed above, some level of vagueness or ambiguity over a norm's content is an inherent trait. However, norm establishment in advance of the subject itself pushes the bounds of that ambiguity far beyond usual levels. The consequent prospective norms emerge with higher degrees of ambiguity harbouring great doubt, not only over their content but also its application.

To use an analogy, drafting regulation targeting innovative warfare that does not yet exist is akin to shooting at an obscured target where both you and it are in motion. Not only can you not effectively grasp where the target is, but your and its future movements are erratic at best. Even the most carefully aimed shot can easily miss entirely through no fault of the shooter. To make matters still more challenging, the intersubjective nature of norms and the cooperative nature of international regulation mean that attempting this task yields influence

[39] Carl Von Clausewitz, *On War, Indexed Edition*, trans. by Michael Howard and Peter Paret, 1984 Edition, 1st Princeton Paperback Printing (Princeton University Press, 1989), bk. 2, Chapter 1.

only over where to aim, which must then compete with many other influences, differing state to state. Thus, each actor has its own guess where the target will be, estimates its own position, and its own preferred approach, built on all of these estimates. This crudely approximates the difficult task for entrepreneurs in attempting norm establishment in advance.

That said it is worth noting here that the motives of states in regulating warfare are open to ample debate. Strategic interests are obviously a major element, but less certain is the extent to which entrepreneurs are concerned about the long-term humanitarian aspects in regulating warfare. In other words, do entrepreneurs concern themselves with the long-term diminishment of the horrors of war, including those that do not yet exist, or are they driven by more immediate and strategic concerns? In the historical cases examined in the subsequent chapters, thought went to the longer-term costs of new weapons and questions of how to "legislate about weapons still on the drawing-board, whose effects cannot be calculated."[40] However, it may easily be said that entrepreneurs and delegates alike focused their attention squarely on the present and the present alone—with those 'drawing-board' possibilities acknowledged as distant and obscured targets infeasible for direct contemplation. Yet there was also clear recognition that the measures they concluded would echo beyond the immediate. The discussions demonstrated prominent refusals to enshrine restrictions whose long shadow may excessively limit the conduct of warfare in the future, and the humanitarian costs that excessive regulation might impose by denying decisive tools. In arguing for the long-term regulation of aerial bombardment, the American delegate at the 1899 Hague conference exemplified this, stating: "… if it were possible to perfect aerial

[40] See: Geoffrey Best, 'Peace Conferences and the Century of Total War: The 1899 Hague Conference and What Came After', *International Affairs*, 75:3 (1999), 626.

navigation in such a way as to do away with these defects, the use of balloons might decrease the length of combat and consequently the evils of war as well as the expenses entailed thereby." In the end, the extent to which entrepreneurs concern themselves with the present and the distant future is unclear. It is safe to assume, however, that attention is not solely on the present but also on the long shadows regulation might cast.

Nevertheless, whether pre-emption is an immediate goal or simply a by-product, developing an understanding of innovative warfare in advance in sufficient detail to inform guidelines of use and non-use under these conditions is challenging in the extreme. Moreover, as I explore in Chapter 6, the breadth of this challenge is certainly present in current-day efforts towards cyber warfare, just as it was in the measures taken prior to WWI and beyond.

Information scarcity gives rise to several complications. First, without knowledge of how an innovation behaves in practice from which to craft nuanced guidelines, entrepreneurs may instead seek to mollify their concerns by seeking much broader restrictions—even the complete prohibition of an entire form of war—as a shortcut to alleviating information scarcity. However, this typically constitutes a highly recognisable overreach that is, crucially, incongruent with existing norms that only sparingly support opprobrium-as-solution. Moreover, as I explore in the coming chapters, the boldness of such measures renders their success elusive under these conditions as a result of that incongruence. Consequently, what might appear a promising shortcut around the information scarcity issue is likely unsustainable as states have historically been extremely unwilling to shut the door on potentially useful military technologies and tactics, let alone based on loosely supported and inherently ambiguous moral speculation. This is especially so when considering that similar demands meet most significant innovations from those caught unawares, only to fade away

in short order. Price terms this the amoral monopoly.[41] The essence of the problem is that extraordinary claims require equally extraordinary justifications that are most often absent.

Second is the absence of hard facts—or at least something approaching them. This constitutes a tremendous barrier to achieving higher degrees of specificity. Misunderstandings and erroneous predictions aside, the very real probability of misinformation and the withholding of newer details are near-certain to hamper an establishing norm's specificity. States are understandably reluctant to offer more information than is absolutely necessary regarding the latest innovations. An illustrative example in recent history is the Soviet decision to de-classify and later permit global publication of research findings on radar wave propagation. The fruits of this work formed the crucial foundation of an American project that yielded the first stealth aircraft (Lockheed's Have Blue) then grew into the first operational stealth fighter, the F-117 Nighthawk. The US, for its part, continues to maintain extensive secrecy surrounding this aircraft and its capabilities even well after its obsolescence. In fact, some details regarding its radar absorbent coatings remain closely guarded to this day, more than two decades after the aircraft became common knowledge, and near to a decade after its full retirement. One can easily argue that the Soviet misstep conceded a persisting generational advantage in stealth technology and succinctly illustrates the perils of sharing the details of any innovation, however minor they may appear, driving states towards often extreme secrecy around exact capabilities. Consequently, building nuanced regulation around newly emerging technologies remains challenging.

Compounding the pressures towards secrecy is the presence of propaganda and misinformation, be it deliberate or inadvertent. These can radically warp normative discourse

[41] Richard M. Price, *The Chemical Weapons Taboo* (Cornell University Press, 1997).

to help or hinder norm establishment and development. During the interbellum, understandings of air power and chemical weapons were both heavily distorted by error, propaganda, and deliberate misinformation. Allied aerial theorists had little notion of the effectiveness of their endeavours until well after WWI concluded, and were left to theorise from incomplete and misleading data. As a result, understandings of air power's future role swiftly became detached from reality leading to a mistaken belief in the power and reliability of bombing and consequently the apparent futility of imposing normative bounds. Similarly boisterous and hyperbolic claims from the chemical industry and military branches about the increasing potency of chemical weapons—driven in large part by the threat of sharp budgetary pressures—convinced many that the threat from chemical weapons far exceeded reality.[42] This erroneous belief aided in securing the renewal of the lapsed (and arguably unintentional) pre-war ban on chemical weapons, against the apparent trend towards the normalisation of chemical weapons. In both cases, misinformation and active propaganda dramatically altered the course of norm development by seizing on the scarcity of solid information.

A final key point of difference is the simple reality that matters may shift dramatically once an innovation reaches the battlefield. This represents an inherent and unavoidable element of anticipatory action. For all the efforts taken ahead of time, however nuanced and thoughtfully crafted, the reality of an innovation may not resemble what was expected at all. Consequently, any specificity achieved in advance is inherently tentative. Even best-case scenarios where an innovation represents a relatively small adjustment to a well-regulated

[42] Though, interestingly, the hyperbole was unknowingly accurate in at least one respect. German chemists had developed nerve agents that came very close to the exaggerated threat, and against which masks offered no defence. The costs had these been employed would have been staggering.

domain—as was the submarine at its introduction— anticipation of the outcome cannot be guaranteed, and even otherwise successful normative or regulatory efforts predicated on the best understandings of the day may find themselves woefully off-base when tested.

Concordance

Concordance refers to the degree of intersubjective agreement over the content of a norm. Norm establishment in advance of its subject also altered this significantly. Disagreement and divergence between actors is already an expected, and as discussed earlier, inherent trait of norms. States are likely to interpret and construct their own understandings, creating their own specific "meanings-in-use" regardless of the novelty of the subject.[43] In scenarios in which the subject is poorly defined, questionably understood, and where each actor has little exposure to it in practice, this tendency is amplified, and takes several forms.

First, normative aspects aside, states will interpret innovations very differently and ascribe to them different practical meanings, as was prominently reflected in the reactions of various states to the submarine. Prior to WWI, enthusiasm between states for the submarine varied considerably based principally on two factors. The first was the potential strategic advantage or disadvantage wrought by its introduction. A French school of strategic thought, the *Jeune École* (young school), held great hopes for the early submarine as a solution to British naval dominance. The submarine offered a means to prevent the Royal Navy from blockading French ports. This in turn would enable the French navy to pursue its preferred naval

[43] Wiener, 'Enacting Meaning-in-Use', 175–193.

doctrine—commerce raiding with suitable high-speed surface vessels (cruisers). Conversely, the British Admiralty was far less enthused about the submarine as it offered them little they could not already achieve with surface dominance, while simultaneously threatening to undermine that dominance. The second factor to emerge was the prominent naval doctrine espoused by Alfred Thayer Mahan. Mahan argued for a main battle fleet centred on massive capital ships, meaning that submarines stood in direct competition against the main fleet for resources. In states where Mahanian and British ideas dominated, the submarine was viewed very differently from those where they did not. This in turn predisposed them differently to the question of regulating the submarine in advance. Similar dynamics are present in the emergence of chemical weapons, with a discrepancy in interpretations between the relevant states.

Second, states are prone to interpret the underlying guidelines of international law quite differently, and to extrapolate from them more differently still. This is already a common occurrence in well-trodden areas and it is further amplified when confronting the uncertainty of a major innovation. Referring again to the submarine, prior to WWI the perspectives of British and soon-to-be-neutral states were deeply vested in maritime norms, which the British had also played a major role in creating and maintaining. Their expectation, generally speaking, was that the submarine as a new weapon would play by those well-established, specific, and reasonably concordant rules. German attitudes towards this body of norms, on the other hand, revealed themselves to be bluntly at odds with that assumption. German interpretations fuelled by the so-called ‘Copenhagen complex’ and a non-traditional German school of legal thought produced a starkly contradictory position on the role of the submarine,

and new weapons generally.[44] Collectively, this came to embody fundamentally divergent ideas of underlying international law, and a radically different place for the submarine within it. This split persisted into WWII despite repeated efforts to remedy it.

A third and compounding complication is that states will likely have experienced analogous cases differently just as they will likely experience the innovation itself differently if/when it gains prominence. For example, the British experience of blockade as a military strategy was distinctly different from that of Germany both before and during WWI. Perspectives on the legitimacy of submarine commerce raiding as a strategic measure and a form of pseudo-blockade differed as a result. Germany believed the loss of enemy merchant crews was permissible given the direct military relevance of the action to achieve a blockade, and was unreceptive to British arguments giving preference to the rights of their merchants while German civilians starved under the British blockade. Britain, on the other hand, prioritised their view of international law and condemned the arbitrary sinking of their merchants in contravention of that law, while noting that their execution of a blockade was within those bounds—regardless of the disastrous effect on German civilians. Each side's very different experience of this method of war was mirrored in their view of its legitimacy. Conversely, the two nations shared comparable experiences of chemical warfare in WWI, and developed opposition to it in parallel which helped to secure a concordant revival of the opprobrium during the interbellum.

In essence, then, states are unlikely to agree simply or immediately on the nature of an innovation in warfare, its relation to existing norms, or even the body of international law

[44] Germany believed British commitments to international law hollow following the seizure/destruction of the Dutch fleet in Copenhagen while it was neutral. They particularly feared a repeat against their own fleet and the concern dictated their interpretation of British actions for over a century. See: Jonathan Steinberg, 'The Copenhagen Complex', *Journal of Contemporary History*, 1:3 (1966), 23–46.

they might try to apply. Thus, they are likely to approach the task of regulating norms in advance even more divided than they would be under conventional circumstances.

Fragile and incomplete establishment in advance

The difficulties inherent in securing strong specificity and concordance for norms that emerge in advance of their subject produce norms which are likely to be fragile, if they emerge at all. Weaknesses in specificity and concordance suggest that there is poor prospect for institutionalising such a norm and, in the event that it is institutionalised, implementation will have little consistency between states, contributing to further weakness. States will not make or continue strong commitments to an ambiguous norm, nor will they enforce or reinforce it unless it particularly suits their interests to do so. Thus, support between states will be inconsistent. Given weak specificity and concordance, the emerging norm can be said to be fragile.

Without further and ongoing entrepreneurship/stewardship, or an external shock (such as the shock of first-use which gives significant substance to moral concerns) establishment in advance may give way to norm decay and the fragile norm may become just another faltered, futile attempt at limiting warfare. Fragility and the possibility of decay are, therefore, consequences of incomplete norm establishment in advance. The degree of incompleteness will vary depending on the weakness present. The deeper the ambiguity over the core purpose and justification of the proposed norm, the more fragile it will be.

A useful comparative point is the recent anti-personnel landmines norm. In contrast to cases where regulation developed in advance, land mines are well understood both technologically

and practically, and are a reasonable example of conventional establishment. Through the 1990s a prohibitive norm fairly swiftly emerged against anti-personnel (AP) land mines.[45] The norm narrowed to a clear target (AP land mines, but not anti-tank) and cited clear and observable justification in the long-term effects on non-combatants, especially from ordinance remaining long after a conflict ceased. From this came the codified and partially ratified (though with major notable exceptions) expectation that states would cease the development, use, and stockpiling of AP land mines. The core idea behind the norm was clear; AP land mines were unacceptably indiscriminate. In comparison, neither narrowed focus nor directness of justification are realistically feasible in the uncertainty of establishment in advance. Thus, while a behavioural suggestion may emerge ('x' should not be used because it may be somehow bad) the core understanding of what 'x' is, and how exactly it is bad remains ambiguous—the idea is incomplete. Parsing and applying an incomplete norm tasks states and entrepreneurs with more than debating the merits or demerits of an idea. They must also decipher or even fill the content at the norm's core. As I explore next, that incomplete and fragile nature carries over from the establishment phase into the development phase.

How does the contestation of emerging innovative warfare differ?

Assuming the fragility of norms established in advance, as discussed above, how does contestation differ during the development phase of norm life? I argue that there are three primary areas of note: the now compounded consequences of fragility from establishment,

[45] See: Price, 'Reversing the Gun Sights', 613–644.

compromised mechanisms of contestation caused by the novelty and uncertainty of the subject, and the extremely challenging gulf of implementation under those conditions. I explore each of these in turn.

The continuing effects of novelty and the legacy of fragile and incomplete establishment

The first major area in which contestation will differ arises from the differences and difficulties in establishing a norm in advance of its subject. As discussed, norms established in this manner exhibit particularly weak specificity and concordance, and therefore remain incomplete without extensive further development of their core content. The most immediate issue is that reliably predicting the future is often no simpler after first-use than it was before. As long as the innovation is evolving (with doctrine and practice still changing in response to it) many of the underlying difficulties present during establishment will continue to confound the process of contestation. Misinformation, misdirection, and misunderstanding will continue throughout an innovation's emergence ensuring that matters remain murky—perhaps even escalating with the addition of proven strategic importance from first-use. In essence, and to recall the analogy used earlier, entrepreneurs are still aiming at a moving target even if they can better guess at its outline. In these circumstances, entrepreneurs must complete the norm's core content amidst ongoing and pervasive uncertainty, confronting as well the regular difficulties of contesting a practice of warfare that now, presumably, has a tradition of use and a consequent degree of normalisation.

A potential saving grace is that knowledge from first-use brings an opportunity to narrow or refine the focus of the norm. As discussed earlier, entrepreneurs may overreach when faced with pervasive uncertainty prior to first-use. As the nature and capabilities of an innovation become clearer, though still not well understood, norm entrepreneurs can increasingly constrain their focus to the specific elements of the innovation that they find the most troubling, and/or against which they can muster the strongest argument—as opposed to challenging the entire innovation out of necessity. Whether this occurs, of course, is another matter.

Nevertheless, even with the benefit of a narrowed focus, significant flaws still exist in the core content of the norm due to fragile and incomplete establishment. Pre-existing brittle, irrelevant, inapplicable, and/or poorly conceived expectations applied to an innovation in an attempt to grapple with its implications must be teased out and dealt with during contestation. This is most pressing for specificity. As explored in Chapter 3, the earlier attempts at regulating aerial conflict had been heavily predicated on previous understandings which were difficult or outright unsuited for use in governing aircraft. Later contestation over the appropriate bounds of bombing had to contend with these expectations extensively. One such understanding was the concept of a defended town. Originally this related to besieging a town with land forces in the immediate vicinity. Combatants accepted the bombardment of a town to force its submission—with the certainty of civilian casualties—as it was assumed that opportunities to surrender or flee had been rejected. Consequently, civilian injuries and deaths were a burden on the defending commander and not the responsibility of the attacker. A nuanced version of this concept was haphazardly applied to aerial bombing simply because it related to the bombardment of a city, despite substantial differences in the underlying circumstances.

During WWI and in its aftermath, states, entrepreneurs, and theorists struggled to reconcile where the burden of civilian casualties lay outside the context of a siege, when the siege originated from a great distance rather than the immediate vicinity. Did the presence of defences, or any military objective whatsoever, near a city permit the free bombardment of the city? Who bore responsibility for the protection of civilians and where did the limitations on indiscriminate attack apply? The war rendered Europe entirely defended by the presence of continuous trench lines, just as the nationalised war economies assigned almost every city a direct role in the war. Was this sufficient to make every city a legitimate target? Was the distance from the front a meaningful factor? Traditional understandings held that anything within artillery range was a permissible target so did this apply to aircraft as well? These are only a sample of the outstanding questions after narrowing from aviation as a whole to bombing alone. In essence, the raft of earlier understandings made translating the principle of discrimination to the complex business of aerial bombardment all the more difficult.

Any fragile and/or incomplete establishment is likely to include a similar maze of conceptual and practical questions, each to be explored and resolved amidst the uncertainty and secrecy of ongoing innovation. Concordance will also continue to be a substantial barrier. Contestation surrounding these lingering questions operates and resonates differently between states, which only serves to increase the likelihood of a fractious result. Even assuming good faith and the absence of strategic motives, if states already differ on the original content and intent of the norm, their interpretation of subsequent bouts of contestation will exhibit greater variance, potentially leading to even weaker concordance and norm decay. As I will demonstrate in the coming chapters, the result can be as many bespoke versions of the norm as there are actors, with no easy path towards reconciliation.

Compromised means of contestation

The second major area in which contestation is likely to differ following fragile establishment is in its effect on the tools of contestation. Normative arguments necessarily use precedent and advocate change relative to existing norms and rules.[46] Reference, precedent, and analogy are key tools here too, but in the early stages before an innovation is fully rendered into reality these methods are directly undermined. Precedent is broadly unavailable—or at least distinctly limited—given the emerging state of the innovation. When encountering entirely novel domains of warfare, reference and precedent become even more tenuous. Analogy also harbours major problems. As Yuen Foong Khong persuasively argues, the use of analogy is often superficial and exceptionally poor if not carefully applied, and so frequently leads to erroneous understandings.[47] To arrive at this finding his analysis examines analogical invocations of the Korean War by US policy makers striving to understand their position in Vietnam. Despite the fog-of-war, these cases still exhibit only a fraction of the uncertainty involved in dealing with innovative warfare. If analogical reasoning is prone to error in a closely-related, better understood and less novel scenario, it is surely far more suspect elsewhere.

Moreover, the basis for the tools of contestation (experiences) and their application (reference to those experiences) is victim to the raft of concordance issues already discussed. The adaption of normative concepts to concrete reality through appeal to such events is already a primary locus of contestation and one reliant on sharing comparable experiences. As Sugden argues, "because [norm] prominence is largely a matter of common experience …

[46] Sandholtz, 'Dynamics of International Norm Change', 101–31.
[47] Yuen Foong Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965*, 1st Edition (Princeton University Press, 1992).

the conventions that are best able to spread are those most susceptible to analogy."[48] Common experiences are a major stumbling block for two reasons. First, looking past the pitfalls of analogical reasoning there remains a lack of common or effective reference points. Second, other bodies of experience available are prone to differ considerably in their content and interpretation between actors. For example, in Britain the lived experiences of German submarine warfare were markedly different to German experiences. For the British, who were unaccustomed to civilian losses and the direct effects of conflict but were accustomed to dominance at sea, civilian losses to submarines stood out in the extreme. Germans, on the other hand, were far more accepting of civilian deaths pursuant to the war effort, due to the significant hardship and eventual famine during the Turnip Winter caused by the British blockade. Moreover, as inhabitants of a continental state well versed in land warfare on their territory, Germans were more accustomed to the direct effects of warfare reaching beyond the battlefield. Each state and society interpreted these events through their own lens shaped by differing exposure to their effects. As the "strategic use of information, symbolic politics, leverage politics and accountability politics, issue framing and shaming" is inherent to contestation this much is a given, exacerbated by the newness of an innovation and unequal exposure to its use and effects.[49]

[48] Robert Sugden, 'Spontaneous Order', *The Journal of Economic Perspectives*, 3:4 (1989), 93.
[49] Martha Finnemore and Kathryn Sikkink, 'Taking Stock: The Constructivist Research Program in International Relations and Comparative Politics', *Annual Review of Political Science*, 4:1 (2001), 401.

Implementation

Finally, as discussed earlier, implementation is a crucial element in the development and realisation of a norm. Institutionalisation of a norm, even assuming it to be effectively codified and ratified, does not translate cleanly or reliably to practice. Conversely, nor is the implementation of a norm dependent on its institutionalisation. Legro offers a strong argument that alignments in military cultures can go a substantial distance towards explaining the somewhat paradoxical cooperation between states to limit a means of warfare when they are actively seeking each other's destruction in total war.[50] Legro identifies the adoption or rejection of various international norms seeking to regulate specific forms of warfare, and their respective implementations, as a strong explanatory variable in Anglo-German decisions for use and non-use in WWII.[51]

The question then is how do fragile establishment, and the peculiarities of in advance establishment, affect contestation at the domestic level as components of implementation? As established earlier, as unitary actors at the international level states are already likely to arrive at unique interpretations of innovative warfare relative to each other, and to ascribe their own meaning to any related regulating norms in advance. Inherent weaknesses in specificity and concordance will also affect the domestic level, as will information scarcity and the compromised tools of contestation. Combined with the deep and complex pool of domestic dynamics—often including quarrelsome competition between governmental and military branches vying for limited funds—these weaknesses contribute to another idiosyncratic domain of intense contestation of fragile regulation in advance. Further

[50] Legro, *Cooperation Under Fire: Anglo-German Restraint During World War II*.
[51] Ibid.

differences in outcomes and implementation arise as each state constructs its own 'meaning-in-use' throughout its internal contestation. The deeper the incompleteness in establishment, the wider the divergence between starting points for each state's domestic contestation and the wider the resulting divergence in likely outcomes.

The contingency of regulating innovative warfare

I have argued so far that norms emerging in advance of their fully developed subjects harbour substantial ambiguity leading to incomplete and fragile processes of establishment, further complicating the process of contestation. In lieu of a robust and/or complete norm, regulatory norms addressing innovative warfare are predisposed to a high degree of extrinsic influence on their practical outcome. Put another way, a norm addressing a subject in a state of flux is highly contingent on events and trends external to the norm itself and directly tied to the course of the warfare it aims to regulate. As one becomes obsolete so too must the other. Thus, when considering the regulation of innovative warfare we must be mindful of the role contingency plays in how it might shape the norm's development directly and the pressures to which it is subjected.

Many external pressures originate in broader shifts in the balance of power. Powerful states will advance norms that suit their interests and impede those that do not – a dynamic Thomas refers to as the power maintenance function of global norms.[52] Similarly, crises and major shifts in global affairs can result in adjustments to the global and normative climates, can

[52] Thomas, *The Ethics of Destruction: Norms and Force in International Relations*, 25, 32–33.

override the power maintenance function, or change the composition and/or character of states enacting it – all with obvious consequences for emerging norms.

As such, an appreciation of these at the theoretical level and their likely scope of influence is necessary before proceeding. Overall, I note three key areas of potential extrinsic influence that must be borne in mind; implementation vis-à-vis path dependency and congruency, the influence of technological developments, and the balance of thresholds against strategic imperatives.

Implementation, path dependency and congruency

How innovations are received in war represents a major area of extrinsic influence over outcomes. As discussed earlier, actors create 'meanings-in-use' for norms based on their domestic variables. This naturally extends to innovations in warfare. I discussed the presence of a variety of internal actors in each state and the likelihood of them constructing diverse interpretations of a norm given its ambiguity. The complexity of negotiating the role of innovative warfare internally is yet another step. Changes in the means and methods of warfare are interpreted differently within each state, and are accepted or rejected accordingly. Political, economic, social, and institutional attitudes and circumstances can dramatically affect the enthusiasm or scorn that greets an emerging innovation and capacity for its adoption, entirely aside from any normative elements.

The legacies of past decisions—even those nominally unrelated to the military innovation itself—can prove decisive. Avant emphasises the significant role of path dependence in the

shift from mercenaries towards civilian armies in Europe.[53] In her words, "path dependency suggests that in key instances domestic distributional issues affect not only the timing and outcomes in individual states but also the character of international practices in general."[54] Another example discussed in the coming chapters is the reluctance of military organisations to devote major resources to expanding the production and development of chemical weapons during the interbellum. For the most part this was not a normative decision. Instead, investment in chemical weapons was curtailed due to resource constraints and doctrinal preferences for mobile warfare in reaction to trench warfare combined with mutual wishes to avoid another war of attrition. A long-run consequence of decisions made in the early 1930s positioned states with a distinct lack of combat readiness plus a pervasive belief in a disadvantage (owing to that neglect). Each side favoured cautious interpretation contributing to ultimate non-use as a result.

Beyond material constraints, organisational attitudes can have a similar effect. For example, there was initial and lasting opposition to the submarine in many major navies throughout much of the 20th century. This arose because of the resource and conceptual threat the submarine posed against other options preferred by the dominant doctrine at the time. In other words, it was incongruent with organisational culture. Many navies, political factions, and industrial institutions had a significant stake in the construction of large surface vessels, creating hostility towards anything that might take resources or political capital away from that purpose—such as the submarine. Moreover, these forces also at times strongly and opportunistically supported the adoption of strict norms and regulatory measures due to

[53] Deborah Avant, 'From Mercenary to Citizen Armies: Explaining Change in the Practice of War', *International Organization*, 54:01 (2000), 41–72.
[54] Avant, 'From Mercenary to Citizen Armies', 42.

their general opposition to the submarine. That broad doctrinal commitment persisted well past the end of WWII, and even retarded the development of anti-submarine tactics despite the tactical threat posed.[55] Conversely, at other points a strong commitment to unrestricted submarine warfare within the German submarine forces retarded effective implementation of rules for submarine warfare, despite their successful institutionalisation. This example, explored in greater detail in coming chapters, illustrates the substantial influence of attitudes within domestic structures on the adoption of innovative warfare and the development of related norms.

I argued above that implementation—especially with regard to the military dimension—is a decisive arena for the outcome of regulating norms in advance. In essence, what I argue here is that such outcomes are also highly contingent on non-normative factors. The degree of congruency with existing attitudes and the path dependencies imposed by institutional and resource constraints must first permit a norm's emergence then enable restraint in the long-term.

Thresholds vis-à-vis strategic imperatives

A second extrinsic influence I aim to explore is the relative position of an innovation in competition with other available means of warfare. Use of an innovation is not typically a one-off choice between use and non-use. However much we might prefer that when presented with a choice in isolation states would forgo normatively laden forms of war

[55] R. A. Bowling, 'The Negative Influence of Mahan on Anti-Submarine Warfare', *RUSI*, 122:4 (1977), 52–59.

altogether, war rarely offers such a choice. In reality, the question shifts to the necessity for that troublesome form of war versus just how troublesome it is. States will often answer this question differently, with a different threshold where imperatives surpass normative reservations. In effect, when does use of a normatively challenged form of war become permissible—or at least the lesser of two evils? Retaliation-in-kind and no-first-use understandings reflect formal statements of these thresholds in practice, while signalling an encouraging potential willingness to forego certain forms of war as long as there is no net-disadvantage.

However, one actor electing use over non-use can rapidly force all actors to follow suit lest they concede a decisive advantage contributing to their defeat. Escalatory spirals of this nature, combined with the strong likelihood that actors will disagree given poor concordance as discussed above, foster disagreement on exactly where the bounds on behaviour lie, and what constitutes sufficient imperative to permit the use of a normatively challenged form of warfare. For example, a lower severity conflict (i.e. a war of choice) does not present the same existential aspect as total war (i.e. a war of necessity). The latter can easily create a perilous calculus predisposed towards the weakening or abandonment of restraint through each state's exposure to greater strategic imperatives, with states in turn more likely to push the bounds of what is considered acceptable use, and therefore more likely to transgress behavioural limits as perceived by their adversaries. An example might be where one state considers the bombing of a munitions factory within a city to be permissible by reason of the target's military importance, whereas their opponent prioritises civilian protection and considers such bombing to be a significant breach. Resorting to reprisal-in-kind then appears as escalation or the abandonment of restraint and begins an escalatory spiral. This need not even be intentional as simple and relatively minor errors have the power to begin this

escalatory spiral should any actor be so inclined. In essence, once thresholds are crossed—wholly or in part—abandonment becomes a strategic necessity.

Another important factor is the comparative merit of a form compared to other means available. Major states typically have many available methods of conducting warfare and the potential of any innovation implicitly and directly competes with those other options. A novel form can be useful, or even revolutionary, but may not necessarily be advantageous enough to merit a change in tactics or the opportunity costs involved therein. An example from WWII is the British decision to forego the use of chemical weapons as a component of their bombing campaigns well after the point where German retaliatory strikes were feasible.[56] The combination of resource costs to prepare and deploy these munitions *en masse*, the perceived marginal gain over conventional explosives, and the presence of the chemical opprobrium collectively weighted the decision against the introduction of chemical bombing. At the other end of the scale, British plans to initiate chemical warfare as a weapon of last resort should Operation Sea Lion succeed illustrate arrival at a very different decision given different imperatives. Similar thresholds and elements of strategic balance were at play in Japanese, American, and German decisions to do the same.

Given these complexities, I argue that restraint norms in practice operate as a question of relative thresholds; the strength of the norm versus the imperatives towards use. Restraint norms are tremendously dependent on pressures from the broader strategic and geo-political environment as they emerge. Even in the presence of strong institutionalisation and apparent implementation of a robust form of an emerging norm, the outcome often remains subject

[56] Stockholm International Peace Research Institute (SIPRI), *The Problem of Chemical and Biological Warfare: A Study of the Historical, Technical, Military, Legal and Political Aspects of CBW, and Possible Disarmament Measures.* (Almqvist & Wiksell, 1971), 314; See also: Frederic Joseph Brown, *Chemical Warfare: A Study in Restraints* (Transaction Publishers, 2005).

to strategic imperatives. Until affirmed by a history of restraint where one would otherwise have expected the opposite, the norm remains tentative. Interestingly that restraint need not originate from the norm itself. Even a period of coincidental restraint may be sufficient to confirm a norm. Therefore, if the emerging norm can establish a threshold above environmental trends this may lead to its *de facto* confirmation and internalisation.

Mutual technological influence

The third and final external influence is foundational to innovative warfare, but also one of the most challenging to assess. As van Creveld puts it, war is "completely permeated by technology and governed by it."[57] History overflows with examples where technological and capability shifts dramatically alter the means and conduct of warfare. So much so that an entire branch of IR theory (offence-defence theory or defensive realism) concerns itself with these shifts and their predictive capability.[58] The nature and progression of an innovation is therefore central to the evolution of any related norm, so regulatory norms addressing innovative warfare are inherently contingent on the progress of the innovation they address.

What renders this a particularly challenging task from an analytical standpoint is the speculative nature of anticipating those changes when the innovative warfare introduced, first as concept then in practice, is an immature version with much room for refinement. Extrapolation from this is notably difficult, as discussed earlier. For example, the first fixed-

[57] Martin Van Creveld, *Technology and War: From 2000 B.C. to the Present* (Simon and Schuster, 2010), 1.
[58] See, for example: Stephen van Evera, 'Offense, Defense, and the Causes of War', *International Security*, 22:4 (1998), 5; Charles L. Glaser and Chaim Kaufmann, 'What Is the Offense-Defense Balance and Can We Measure It?', *International Security*, 22:4 (1998), 44.

wing aircraft introduced could barely remain airborne, let alone carry a significant payload. WWI saw the first pure-bred bombers introduced but their navigational and targeting capabilities were virtually nil, with early targeting systems little more than three nails hammered into the fuselage. Fast forward to today with the benefit of a century's technological and operational progress and aircraft are capable of tremendous feats of flight, and remarkable precision to within meters—as opposed to within an entire city.

Concurrently, the expectations and norms attached to aerial warfare shifted with changes to the technology of flight and what was practically possible. A proportionate and discriminatory strike by the standards of 1945 is a catastrophe by today's standards.[59] We can glimpse here the influence of technological change in innovative warfare shaping norms. I explore this dynamic in greater detail throughout the chapters to come (especially 4 and 5). For now, it is sufficient to note that technological immaturity limits practical use, and thus often functions as a *de facto* limit on the scope of an emerging norm.

Just as technological sophistication can limit or bolster norm strength, the development of technology mitigating the need for a norm can contribute to norm decay. Effective counter-measures or shifts in the broader conduct of warfare can reduce the presence or threat from a troublesome form of warfare and can in turn render prohibitive norms obsolete as the need for them decreases. The three cases examined support this pattern: improvements in anti-submarine technologies alleviated the need for a submarine norm; the introduction of

[59] Take, for example, the bombing of the Al-Firdos bunker during the 1991 Gulf War. Intelligence identified it as a command and control centre leading to the tasking two F-117 stealth fighters equipped with precision munitions for its destruction. They hit their - clearly military - target as planned. What was not known beforehand was that the bunker was doubling as a civilian shelter leading to the deaths of over 200. The same incident assessed by the standards of WWII would not have raised significant concern surrounded by routine area bombing that was lucky to hit the same suburb, let alone a specific building. Yet in 1991 the strike drew heavy criticism and saw the removal of bunkers from subsequent target lists to avoid a repeat.

nuclear weapons rendered precision bombing somewhat meaningless for a time; and the development of effective gas masks contributed to the normalisation of chemical weapons after WWI. These examples pose an interesting question—do norms that govern obsolete and overlooked domains of warfare become obsolete along with their subject, or merely dormant?

The presence of a robust norm can also affect the development of the related technology. A strong norm prohibiting a form of war can generate significant reluctance to fund or support its development or maintenance. When development resources are scarce this can prove instrumental to preparedness and can impose major path dependence consequences when the time comes to consider its use. This dynamic is highly recognisable during the interbellum in its effect on the development and adoption of chemical weapons while subject to the same broader normative pressures that revived the chemical opprobrium. To fund the development and preparation of chemical weapons was to fly in the face of strong public opinion. As a consequence, all but Germany entered the war with no idea about the existence of nerve agents. Conversely, the presence of a robust norm may drive the development of competing technologies and tactics which avoid or circumvent the constraints of the norm.

The relationship between norms and technology is complex and mutual. There is a simultaneous process of influence, impetus, impedance, and triggers for norm evolution in response to technological change, just as technological change can also contribute to norm decline through alleviating the need for a norm. I argue that the development of the related technology shapes, and at times directly gates, the emergence and development of restraint norms in advance, as a restraint norm cannot exceed the technical capacity to realise it in practice. Meanwhile development of counter-measures and effective defences can induce

norm decay, just as refined capabilities that are more capable of achieving a norm's ideal can induce norm expansion—even to the point of dramatically exceeding the institutionalised state of the norm, or broad concordance over the expansion.

Contingency

In sum, the outcome of contestation addressing innovative warfare is as much dependent on the seas as it is the swimmer. The reception of an innovation is likely to vary considerably between states, especially when we consider the strong chance of regulation shaped by strategic interest. States who suffer—even unreasonably so—in adhering to regulatory terms are unlikely to adhere to the spirit, let alone the letter, and in turn induce additional pressure on the specificity and concordance of a regulatory norm. Moreover, technological development in tandem with normative development can have mutually perturbing influences that are difficult to anticipate, and even more difficult to control. Finally, decisions over the use of a normatively laden form of war are always inextricably linked to the type of conflict in which they are made and the circumstances of the actors making them. This becomes a question of relative thresholds. Cumulatively, we must pay as much attention to wider trends and the environment in which the norm must act as we do to contestation and regulatory efforts directly.

Dissertation Plan

This chapter develops an indication of what to expect from the process of regulating innovative warfare conceptually and theoretically. The directly empirical chapters that follow draw on that understanding and add to it via an examination of what past cases can tell us about the process in practice. Finally, I combine the conceptual, theoretical, and empirical insights developed throughout the bulk of the dissertation to apply to cyber warfare in the present.

I approach this in two parts. The first explores the two critical phases – establishment prior to widespread use, and contestation immediately following it. I further break this into three chapters spanning the period from the regulatory efforts immediately prior to WWI, through the conflict itself, and into its aftermath during the interwar period. Specifically, Chapter 2 examines establishment prior to use through the events and outcomes of The Hague Conferences around the turn of the 20th century, with Chapter 3 as its counterpart examining how those regulatory efforts fared and their influence during WWI. Chapter 4 then examines contestation of the three forms during the interbellum and efforts again seeking to regulate them.

Finally, Chapter 5 comprises the second component of this dissertation and draws on the chapter before it to return to the initial impetus for the thesis, cyber warfare. I approach cyber warfare using the same analytical framework and the collected findings of the three preceding empirical chapters. After briefly establishing cyber warfare as a form of innovative warfare comparable to the historical cases, I first consider where it presently stands in terms of

specificity and concordance and second, I assess its present state and likely prospects against the influential factors identified throughout the empirical chapters.

CHAPTER 2: REGULATING INNOVATIVE WARFARE PRIOR TO WWI

This chapter addresses what operating 'in advance' means for the process of norm establishment and in doing so suggests what the historical cases might tell us about regulating innovative warfare in the present. Chapter 1 established what to expect from the process in conceptual and theoretical terms. With that as a base, this chapter presents empirical evidence from three major historical pre-WWI attempts at regulating then-innovative warfare: the attempted prohibitions addressing submarines, aviation, and gas shells. The measures universally proposed prohibition before these innovations arrived on the battlefield. None had seen meaningful use, and two were little more than concepts with varying degrees of recognition.

With regard to establishing norms in advance, in Chapter 1 I identified specificity and concordance as the most useful lenses through which to explore the internal characteristics of steps towards norm establishment. I further argued that norm establishment in advance suffers from major difficulties hindering specificity and concordance, both central to norm robustness and influence on state behaviour in war. Norms can be established in advance, but *robust* norms are unlikely to emerge because of the absence of strong specificity or concordance. Norms created in advance will also suffer from greater ambiguity making them more fragile, and more open to interpretation. In turn, states will interpret nascent norms on a more individual basis; their support of a norm may vary even more widely than in the case of established norms, and such normative influence is more likely to vary across states. In essence, norms created in advance are fragile and incomplete.

Overall this chapter argues that the theoretical assumptions presented in Chapter 1 are broadly reflected in the cases of regulation in advance prior to WWI, finding that all three cases emerged with either incomplete establishment or a failure of establishment owing to difficulties developing specificity and concordance. Limited and error-prone interpretations of new means and methods of warfare provided insufficient understanding of their form or interactions such that establishing regulatory norms were not feasible. This suggests in turn that major difficulties developing norm content and agreement in advance effectively preclude norm establishment sufficiently robust to meaningfully regulate innovative warfare. I also note the importance of identifying a regulatory *raison d'être* connecting the establishment effort to wider norms as a critical element.

However, the context for those regulatory efforts in advance is important as it shaped the circumstances of their consideration markedly and in a manner not likely to be repeated. Thus, an understanding of that context is essential before engaging directly with the efforts addressing innovative warfare, and given the importance of congruency and norm 'fit' in the establishment process as discussed in Chapter 1. That context was the much larger beast of The Hague disarmament conferences.

The Hague Conferences

The Hague Conferences in 1899 and 1907 ("The Hague") mark a significant point in the history of international law, resulting in the first formal codification of international law with wide support and ratification in the modern international system. The impetus for this codification came from a disarmament agenda, at least superficially. At Russia's call, the intention was to

explore "a possible reduction of the excessive armaments which weigh upon all nations."[60] The scope of this ambition eclipsed any previous effort—including two by the Tsar's grandfather Alexander II aiming to lessen the awfulness of war—by pursing a halt to progressive arms development. Hopes were that states "may examine the possibility of an agreement as to the limitation of armed forces by land and sea, and of war budgets."[61] Interestingly, it occurred during peacetime and sought not to end a conflict, but to enhance the conditions of the existing peace; limiting the means of warfare was the selected method. Disarmament and peace advocates welcomed the conference and the attendance of the major powers, though with little immediate enthusiasm.[62] Specifically, the Russian circular offered *inter alia* the following proposals for discussion:

> To prohibit the use in the armies and fleets of any new kinds of firearms whatever, and of new explosive, or any powders more powerful than those now in use, either for rifles or cannon.
>
> To restrict the use in military warfare of the formidable explosive already existing, and to prohibit the throwing of projectiles or explosive of any kind from balloons or by any similar means.

[60] James Brown Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director* (Oxford University Press, USA, 1915), xv–xvi.
[61] Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director*, 21.
[62] Best characterises the response of the chancelleries of Europe as handling it 'like a parcel that might contain a bomb.' See: Best, 'Peace Conferences and the Century of Total War: The 1899 Hague Conference and What Came After', 622.

> To prohibit the use, in naval warfare, or submarine torpedo boats or plungers, or other similar means engines of destruction; to give an undertaking not to construct, in the future, vessels with rams.

From this impetus came many proposals for limitation or prohibition, including limits on force levels, budgets, fleets, the thickness of naval armour plates, artillery calibres, balloons, and naval mines. Few of these initiatives met meaningful support, or even made it past initial discussions. Ultimately, only three disarmament measures found support—a declaration prohibiting shells which solely produced asphyxiating and deleterious gases, a ban on expanding bullets (dum-dum bullets, named after the Indian armoury charged with their manufacture), and a five-year prohibition on launching projectiles and explosives from balloons.[63] Importantly for the discussion here, two of the three were innovative forms of warfare prior to their first widespread use.

Two major points are relevant to the discussion at hand. First, the disarmament impetus was largely superficial in that it was pretence for the pursuit of underlying Russian strategic motives. Many certainly shared a general concern over the rapid increase in the intensity and brutality of warfare, underwritten by "much application of scientific invention to military purposes."[64] Reflecting 15 years after WWI, British Foreign Secretary Edward Grey neatly captured the essence of this concern: "The enormous growth of armaments in Europe, the sense of insecurity and fear caused by them—it was these that made war inevitable."[65] On the surface, the conference was an attempt to head off these troubling developments at the

[63] For a brief overview of the conferences and the surrounding history, see: Andrew Webster, 'Hague Conventions (1899, 1907)', in *The Encyclopedia of War* (Blackwell Publishing Ltd, 2011).
[64] Quoted in: Best, 'Peace Conferences and the Century of Total War: The 1899 Hague Conference and What Came After', 620.
[65] Edward Grey, *Twenty-Five Years: 1892-1916* (Hodder and Stroughton, 1940), I, 90.

pass by way of a 'gentlemen's agreement'. However, it was pressing strategic need which drove Russia to call for a conference. Significant strains in Russia's domestic circumstances stemming from costly and lagging modernisation created pressures to alleviate the extreme costs of also keeping pace with the rapid development of military technology. For example, at the time Austria was introducing new artillery that Russia was hard pressed to match. Comparable expenses loomed on many fronts, military and otherwise. To alleviate these pressures, the Tsar sought a freeze in the state of military armaments and the preservation of the status quo.

Furthermore, other states were well aware of this, and entered the conference with their own strategic designs. The German delegation in particular took the lead in resisting anything that constituted a detailed restriction, or overly infringed on the sovereign rights of states—at least as they saw them. The British, French, and most other delegations were quite content to let them do so for their own strategic reasons. The French, for example, harboured concerns that the conference would enshrine present territorial boundaries and make permanent the loss of Alsace-Lorraine, driving the French delegation to hedge against any binding terms and acquiesce to German obstructionism. Though as the war soon revealed, German ideas of sovereign rights far outstripped her rivals and bordered on the absolute.

Second, and perhaps most important for the business of norm establishment, not only was the disarmament agenda hollow, it was distinctly incongruent with surrounding norms and expectations of the time. For starters, many interpreted the growing dangers from military technology as less inherently disastrous, believing that the increasing brutality acted as deterrent. In the words of Lord Salisbury, then British Prime Minister, "the horrible carnage and destruction which would ensue from [modern weapons] employment on a large scale,

[has] acted no doubt as a serious deterrent from war."[66] This fed into and drew from wider norms strongly opposing the arbitrary limitation of warfare. Clausewitz noted in *On War* that "to introduce the principle of moderation into the theory of war itself would always lead to logical absurdity."[67] Marshal von Moltke would later echo similar sentiments in suggesting that the greatest kindness present in war was to bring it to a speedy conclusion, as did Alfred Nobel who hoped that new inventions would render war at least shorter, if not unthinkable.[68] From this perspective any relatively minor limits on the means of warfare served only to prolong hostilities by denying militarily effective methods, and with them swifter victories—the swifter the victory, the lower the humanitarian cost. Article 29 of the Lieber Code, devised several decades earlier, even directly stated: "the more vigorously wars are pursued, the better it is for humanity. Sharp wars are brief."[69]

Strategic entanglement and fundamental incongruence with surrounding norms combined to lead many delegates to "[approach] their duty in a spirit of unbelief."[70] The report of the American delegation illustrates this well. It stated that "the American Commission approached the subject of limitation with much doubt. They had been justly reminded in their instructions of the fact that by the progress of invention as applied to the agencies of war, the

[66] Frederick William Holls, *The Peace Conference at The Hague: And Its Bearings on International Law and Policy* (Macmillan, 1900), III, 15.
[67] Clausewitz, *On War, Indexed Edition*, bk. 1 Chapter 1.
[68] Best, 'Peace Conferences and the Century of Total War: The 1899 Hague Conference and What Came After', 626.
[69] Codification in this case meant American domestic law, nevertheless the Liber code was widely known and used as an initial template for several efforts in the intervening years. Francis Lieber, 'General Orders No. 100 : The Lieber Code INSTRUCTIONS FOR THE GOVERNMENT OF ARMIES OF THE UNITED STATES IN THE FIELD' (Yale Law School - Avalon Project, 1863) <http://avalon.law.yale.edu/19th_century/lieber.asp> [accessed 27 May 2015].
[70] James L. Tryon, 'The Hague Conferences', *The Yale Law Journal*, 20:6 (1911), 473.

frequency, and indeed the exhausting character of war had been as a rule diminished rather than increased."[71]

Consequently, disarmament found all but outright rejection in 1899, with that element of the conferences widely considered failed. 1907 saw disarmament take a back seat to far less ambitious aims. Sir Edward Grey—the British delegate in 1907—pleaded that arms limitation not "be raised and buried in half an hour" but he was to be disappointed. [72] Opening remarks by the Russian delegate, Nelidov, cautioning against being "too ambitious" in the pursuit of disarmament via international law set the tone, and disarmament was buried within 25 minutes.[73] Although the conferences "opened the doors—just barely—to the era of arms control," they primarily functioned as codification of existing understandings.[74]

The contextual implication for regulating innovative warfare was that the impetus for their discussions (disarmament for disarmament's sake) contradicted the surrounding normative landscape. Given the importance of congruency and 'fit' with surrounding norms as discussed in Chapter 1, this represented an especially poor starting point and constitutes a key factor shaping the outcome. The inclusion of warfare for discussion arose distinctly *pro forma* in service to an incongruent agenda, and not from an intrinsic objection to a given innovation. As a result, initial justifications for prohibition rested solely on the incongruent disarmament agenda, and arose before states and entrepreneurs had much of a chance to begin ascribing meaning or expectations for two of the three innovations. Aviation was still in its infancy while

[71] Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director*, vol. 2 p. 7-8.
[72] See: Scott Andrew Keefer, 'Building the Palace of Peace: The Hague Conference of 1907 and Arms Control before the World War', *Journal of the History of International Law*, 9 (2007), 60.
[73] See: Keefer, 'Building the Palace of Peace', 60.
[74] Detlev F. Vagts, 'The Hague Conventions and Arms Control', *The American Journal of International Law*, 94:1 (2000), 31–41.

gas shells were effectively entirely novel when considered. Submarines, meanwhile, were better understood but those understandings were also commonplace.

While theoretically and conceptually we might have expected states to have ascribed a wide range of meanings to innovations prior to their regulatory consideration, consideration under the auspices of The Hague in many ways pre-empted this. In one regard this may have been beneficial in that existing interpretations were scarce and ambiguous, thus being more open to challenge or replacement. However, the reason for that scarcity was the novelty of the innovations themselves which served to inhibit norm establishment in the same way that it inhibited other interpretations. Thus, the regulatory discussions began in a relative void of normative content leaving it to the delegates to fill in the blanks.

Regulatory attempts addressing innovative warfare

With the incongruence of the overarching disarmament agenda in mind, I turn to the three cases of innovative warfare considered within. I begin with the submarine, followed by aviation, and finally the particularly curious prohibition on gas shells and 'asphyxiating and deleterious gases.'

The submarine

The concept of the submarine far predates its practical realisation, a feature common to all three innovations examined here. The notion of a military vessel for traveling under the waves

traces well into antiquity and at least as far back as Archimedes in the 3rd century BC. The submarine stands out among the three cases examined as by far the most proven and realised technology at the time of its regulatory consideration—though it still had not seen meaningful usage in combat and ideas of its use remained largely hypothetical. Nevertheless, the proposal for the prohibition of the submarine offered in 1899 ended with a strong rejection, so much so that the matter was not even raised at the second conference. Thus, the submarine case marks a complete failure of attempted establishment in advance.

As industry and national morale grew in importance for the conduct of warfare, so too did targeting those facets of a belligerent directly. British blockades against its continental rivals made the significance of this sphere all too clear. However, states, experts, and entrepreneurs—with very few exceptions—failed to anticipate the role submarines could play in these strategies by targeting merchants rather than naval vessels. Their interpretations were shaped by what they already understood of maritime warfare, and placed the submarine's role within those understandings. Critically, a combination of technical factors and paradigm blindness produced the oversight.[75] As a result, the complicated interactions of submarines with the existing robust maritime norms were unexplored ahead of time, leading to the absence of an identifiable need for regulation and the matching absence of any specificity to that end when the matter was raised at The Hague. This turn of events illustrates that when considering innovative warfare in advance, understandings of even—or possibly especially—relatively small innovations are still prone to major oversights that undermine

[75] 'The concept of paradigm blindness implies that individuals, groups, and organizations are unwilling or unable to accept any challenge to their core ways of making sense of the world and determining how they interpret and make sense of what goes on around them.' See: Denis Fischbacher-Smith, 'Paradigm Blindness', *Encyclopedia of Crisis Management*, 2013, 716.

regulatory outcomes. Accordingly, not only was prohibition rejected, but states demonstrated strong concordant agreement to do so.

How and why the proposed prohibition arrived at this outcome requires an understanding of perceptions leading up to and during The Hague conferences. I first examine the factors leading to the failure to anticipate the future role of the submarine, then consider in greater detail how that failure resulted in the rejection of regulation and the pitfalls it illustrates.

Anticipatory oversight

Fundamentally, states and naval theorists interpreting the submarine in advance broadly failed to anticipate its utility in a commerce-raiding role for three major reasons: narrow initial understandings of the submarine; the subsequent dominance of Mahanian doctrine reinforcing those understandings; and consequent poor recognition of late-stage technological developments. Collectively, these achieved a strong path dependent influence on the early role and understandings of the submarine, which excluded attacks on merchants, much in the same way that Avant argues path dependency shaped changes in attitudes towards mercenaries.[76]

[76] See: Avant, 'From Mercenary to Citizen Armies', 41–72.

Initial understandings

The earliest ideas of the submarine and its role almost entirely defined how it was understood right up until the war. The first major consideration of the submarine came from a group of French strategists known as the *Jeune École* (Young School), who saw in it great potential to solve a problem that plagued French naval strategy. French doctrine already favoured a strategy of *guerre de course* (war of the chase) that emphasised the use of small, inexpensive craft as commerce and coastal raiders. The aim was an economic chokehold crippling one's opponent, notably their great rival Great Britain. The submarine was ideal for the circumvention of British naval dominance, leading the *Jeune École* to advocate for it extensively. Crucially, however, the submarine was not to be a merchant-hunter itself. Instead, it was to operate as blockade breaker. Until then the key failure-point of any French anti-commerce strategy had been an inevitable British blockade that also denied French fast-cruisers access to British merchant traffic and the British coast. They hoped that the submarine would function as a potent coastal defence tool that would weaken or prevent a blockade, and so enable fast cruisers to access open water, and more importantly commerce.[77]

The submarine was also attractive because of its relatively low cost, and could be a useful adjunct to the more expensive fast cruisers necessary for the French strategy. France already faced considerable costs to secure her extensive land borders, and a navy large enough and

[77] It is important to note that, at this point, the technical state of the submarine was still very limited. The coastal role befit its capabilities as early submarines were incapable of operating for extended periods or in the open ocean. In fact, the first truly operational submarine during the US civil war—the H.L. Hunley—sank at least three times, one of which claimed the life of its primary driver and namesake. The final sinking accompanied its first and only success. After sinking a Union sloop blockading Charlestown's outer harbour, the wash of the explosion overwhelmed and sank the nascent submarine. Open ocean submarining was simply not an option.

capable of preventing or breaking a blockade directly was simply beyond French means. As a relatively cheap and creative solution sidestepping traditional British dominance, the innovative submarine gained fast support. Accordingly, France was the first and one of the most enthusiastic adopters of the submarine.

More importantly, French ideas of the submarine and its intended role heavily influenced other states' understandings of the submarine and began a process of path dependence which ran right through to considerations of the submarine at The Hague. Noting French adoption, a consensus emerged reflecting France's assessment that the submarine held considerable value as a coastal defence platform—with little, if any, role beyond that—which kindled slow but steady growth in international attention. In the words of American Admiral George Dewey in reflecting on his experience in the Battle of Manila Bay during the Spanish American War, "If the Spanish had two of those things in Manila, I could never have held it with the squadron I had."[78] Following a ride in an early US submarine the superintendent of the US Naval Academy remarked, "She will never revolutionise modern warfare … but for coastal defence purposes she is of inestimable value."[79] This view of the submarine became entrenched. On its own, it would likely not have lasted long as the submarine continued to develop and demonstrated greater capabilities. However, the emergence of Mahanian doctrine reinforced that entrenchment.

[78] ibid

[79] Quoted in: Clay Blair, *Silent Victory: The U.S. Submarine War Against Japan* (Naval Institute Press, 2001), 29.

The emergence of Mahanian doctrine

Many major figures greeted the submarine less than enthusiastically from the outset. One prominent example came in response to then Prime Minister William Pitt's expressions of enthusiasm. First Lord of the Admiralty Earl St. Vincent famously chastised Pitt as "the greatest fool that ever existed to encourage a mode of war which those who command the sea do not want and which, if successful, will deprive them of it."[80] This attitude became emblematic of the British posture in the years to come. Naturally, some measure of this was to be expected. The submarine posed a strategic threat to some (the British especially) and threatened to upend centuries of strong maritime tradition. Innovations are often disruptive, and the submarine was no exception. That initial reticence would soon receive a major shot in the arm.

Perhaps the greatest single factor shaping understandings of the submarine prior to WWI was Alfred Thayer Mahan's naval theories, championed in his 1890 work *The Influence of Sea Power upon History.*[81] Mahan argued that naval supremacy was a prerequisite for international power and economic prosperity, the lack of which, he supposed, would quickly lead a nation to wither. Mahan's route to naval power was through a vast concentrated fleet of large capital ships—battleships at first then dreadnoughts as time went on. In his mind the goal was to win a single, crushing, and decisive victory over the enemy's fleet, settling the matter in a single blow. This idea proved tremendously influential, thoroughly captivating many of the major powers—including an ascending Japan, the UK with Fisher, father of the Dreadnought, following a similar model, and Germany who seized on the doctrine as a

[80] Paul Akermann, *Encyclopedia of British Submarines 1901-1955* (Periscope Publishing Ltd, 2002), 96.
[81] Alfred Thayer Mahan, *The Influence of Sea Power upon History 1660-1783* (BoD–Books on Demand, 2015).

solution to the 'Copenhagen complex.' The British seizure of the Danish fleet and bombardment of Copenhagen in 1807 while the latter was still ostensibly neutral had cast a long and anxious shadow over German naval thought.[82] A Mahanian strategic path to challenging British dominance quickly became *the* answer within the German navy and elsewhere. The Anglo-German naval arms race embodied this idea and consumed the attentions of the major navies.

Commitments to Mahanian doctrine extended into the surrounding political, social, and economic spheres, further deepening path dependant influences. Mahan's thesis quickly became the standard reference outside the major navies as much as inside, especially for those desiring major naval investments. Shipbuilders and suppliers enticed by lucrative contracts for ever bigger battleships combined with the growing middle class, who viewed the plentiful officer billets provided by larger ships as pathways of social mobility, to entrench the focus on large surface ships at the political level.[83] Any shift of resources or attention in other directions faced major barriers of domestic opposition in Mahanian states.

For the submarine the effect was profound as Mahan dismissed attacks against commerce/*guerre de course* as unworthy of naval effort in favour of focusing attention on

[82] The 'Copenhagen complex' encompassed the fact - from the German perspective - that British commitment to international law was both hollow and self-serving. See: J Steinberg, 'The Copenhagen Complex', in *Journal of Contemporary History*, vol. 1, 1966, 23–46.
In response, following an initial introduction by German strategist Ludwig Borckenhagen, Mahan became required reading within the German Navy by order of Kaiser William II. The massive expansion of the German fleet and strategic planning undertaken by von Tirpitz between 1890-1914 were based directly on Mahanian strategic concepts with the British navy as its target in order to counter the threat of a 'Copenhagen'. The internal politics of the German military was also reported by some to be especially dominated by "a narrower professional jealousy" centred on the works of "chief experts", which served to further entrench the adherence to Mahanian thinking in the Navy. See: Ivo Nikolai Lambi, *The Navy and German Power Politics, 1862-1914* (Boston: Allen & Unwin, 1984). And, Alfred Vagts, 'Land and Sea Power in the Second German Reich', *The Journal of the American Military Institute*, 3:4 (1939), 210.

[83] The German shipbuilder Krupp saw 18.6% profit on a battleship constructed between 1902 and 1905, British shipyards saw up to 30% profits on their own efforts. See: Keefer, 'Building the Palace of Peace', 48–51.

large surface fleets.[84] In some states commitment to Mahanian ideas saw advocates of alternative naval strategies subjected to political censure and the wrath of public officials. Admiral von Tirpitz was a prominent proponent. He took it upon himself to label submarine advocates "enemies of the navy" and endeavoured to remove them from its ranks.[85] The submarine approached pariah status, and as a consequence military establishments turned their attention away from it just as it began to mature technically. Out of the limelight development progressed with little input, support, or engagement from the world's naval and wider military establishments and they never meaningfully revised earlier understandings borrowed from the French. So total was the Mahanian blind spot surrounding the submarine that it supressed the development of anti-submarine techniques and tools well into the century, despite the major threat submarines posed to surface vessels.[86]

As a result, those following the Mahanian path paid scant attention to the submarine as a strategic tool beyond their initial assumptions about its nature and role. Paradigm blindness caused the future impact of the submarine and the dramatic consequences of its use against merchants to remain almost entirely unrecognised. Even the Royal Navy—studying the submarine with a mindset focussed on economic pressure through naval power—failed to anticipate merchants as the submarine's primary target.[87] The result was that before the war "neither side fully understood the power of the submarine as an offensive weapon."[88] The oversight extended to the submarine's interactions with existing rules and principles as well. Existing maritime norms were comprehensive, detailed, relatively robust, and included strong

[84] Mahan, *The Influence of Sea Power upon History 1660-1783*, 119.
[85] Keefer, 'Building the Palace of Peace', 50.
[86] Bowling, 'The Negative Influence of Mahan on Anti-Submarine Warfare', 52–59.
[87] Duncan Redford, *The Submarine: A Cultural History from the Great War to Nuclear Combat* (I.B. Tauris, 2010), 95.
[88] Dwight R. Messimer, *Find and Destroy: Antisubmarine Warfare in World War I* (US Naval Institute Press, 2001), 3.

safeguards for merchant and neutral vessels. States, especially those strongly vested in the existing norms, believed those constraints to be more than sufficient to regulate a minor coastal defence weapon, and never considered them threatened by the submarine as they understood it.

Late technological developments

Finally, the key technological improvements that enabled submarine commerce-raiding came relatively late, after the hostility of competing doctrinal preferences was established and the prevailing interpretations had solidified. The consequence of which was that there was only a relatively narrow window for recognition that some of the underlying assumptions had changed.

The earliest submarines on which *Jeune École* assessments were based were very limited technically. Several developments in the intervening years occurred out of sight and dramatically altered the capabilities of the submarine. First, electric batteries removed a major limitation. Previously, the availability of oxygen dictated the running of the engines while submerged—limiting mobility and endurance—while sitting still made the submarine an easy target. Batteries and electric engines facilitated prolonged submerged operation with mobility enabling submarines to stalk or escape. Second, self-propelled torpedos enabled submarines to strike from afar while maintaining stealth and relative safety. Third, the introduction of reliable diesel engines was the final piece of the submarine puzzle. As Tirpitz accurately noted in his opposition to the submarine, earlier paraffin engines were unreliable, inefficient, and downright dangerous. Diesel represented a major improvement that

increased range, performance, and safety to the point where open ocean operation became a reasonable proposition. Continuing design refinement integrated these developments to yield submarines fully capable of commerce raiding where earlier versions—on which assumption of a coastal defence role rested—were not. The totality of these improvements was not in place until shortly before the war, providing only a narrow window for anticipation based on proven capabilities.

Few, however, realised the scope or scale of this shift at the time.[89] Those who did found their recognitions duly dismissed by the host of experts firmly ensconced in Mahanian and traditional maritime thought. Admiral Fisher, now removed from office, was one of the few to note their importance in a memo titled: 'The Oil Engine and the Submarine. Some Reflections on the impending vast change in Sea Fighting.' He also corresponded on the subject with Sir Arthur Conan Doyle who had independently arrived at the same notion, and used it as the basis for a short story published in *The Strand* in 1914. In this story a Royal Navy paralysed by a small submarine-equipped navy was utterly unable to defend British merchants, leading to starvation in London and a British surrender. Expert opinion roundly dismissed both.[90] Consequently, interpretations of the submarine were as a relatively unremarkable development.

This course of events marks a strong example of technological development potentially shaping norm establishment, albeit a potential missed on account of other factors. Had the shift in technical capabilities been more widely realised, normative discourse might have reflected this possibility and dramatically changed the outcome. Nevertheless, all the great

[89] See: Redford, *The Submarine*, 95–96.
[90] Ibid.

powers possessed active submarine forces by the eve of WWI.[91] The intense pressures of arms races and the submarine 'gap' saw the great powers undertake submarine construction with varying degrees of enthusiasm. In the end, even Tirpitz gave ground to the submarine in light of renewed interest elsewhere. Critically, the late rapid technological progress immediately preceded this development, and in spite of the staggered adoption submarine forces were, in fact, closely proportional as the war drew near. Most unfortunate here was France, whose early mover advantage had quickly evaporated.

Rejection of The Hague prohibition

Included in the conference papers at The Hague was the proposed complete prohibition of submarines. With the above detailed interpretations of the submarine and its role in mind, the proposal's swift failure is unsurprising. The direct result of the anticipatory oversight is that understandings of the submarine at that point did not include recognition of its strong potential for morally transgressive behaviour involving non-military vessels. Regulation in advance is a matter of establishing behaviour expectations surrounding expected behaviours. In this case, those expected behaviours did not include something worthy of regulation. Consequently, there was no reason for prohibition or special regulation of the submarine. Instead, its inclusion on the agenda was purely *pro forma* in service to the disarmament

[91] In total, there were approximately 400 submarines in service. However, only a fraction of those were equipped with the only recently developed diesel engines. Germany, for example possessed only 12 diesel submarines which were so new that they were still undergoing their shakedown runs when the war began. See: Blair, *Silent Victory*, 36.

agenda, as yet one more recently developed and highly technical tool of war demanding great expense to match—either by parity or in the form of defensive countermeasures.

The discussions that followed were purely technical and contained very little normative content. The conference framers weakly justified its inclusion through the vague notion that it somehow constituted a "terrible device of war," even though it had almost never seen combat.[92] However self-evident to the drafters, the 'terribleness' was less obvious to the delegates. None offered any cohesive justification for prohibition or any regulation at all. The prohibition relied entirely on implicit appeals to already incongruent disarmament ideals, and the supposition that new weapons were inherently terrible without elaboration. Consequently, the attempt behaved like a bubble—it held its shape for a moment when taken at face value and left undisturbed, but burst the moment it was subjected to scrutiny, leaving a void. The final vote rejected the proposal; five in favour with various reservations, five in favour conditional on unanimity, and nine against.[93]

Instead of prohibition, delegates focused on the *merits* of the submarine and the *demerits* of regulation. Several states' delegates presented it as an inherently defensive weapon based on prevailing understandings of it as a coastal defence platform and its assumed status as a legitimate 'weapon of the weak.' Moreover, the absence of a clear moral justification was not lost on the US representative—none other than Alfred Thayer Mahan—who pointed to the reflexive objections that traditionally met new weapons as an explanation for its *pro forma* inclusion for prohibition. Mahan cited the objections that met muskets and their inevitable

[92] James Brown Scott, *The Proceedings of the Hague Peace Conferences: Translation of the Official Texts* (Oxford University Press, 1921), II, 367. See also: John Bassett Moore and Francis Wharton, *A Digest of International Law* (US Government Printing Office, 1906), VII, 367–68.
[93] Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director*, 296.

adoption, suggesting that the submarine would follow a similar route and that regulation was pointless. Tellingly, other deliberations conducted by the same panel included extensive back and forth over potential moral implications, especially regarding non-combatants. Similar in-depth discussion of submarines was notably absent.

Strategic interpretations of the submarine then dominated the discussions in line with each state's varied understandings and assessments of the submarine. Those in favour of the prohibition gained little from the adoption of submarine warfare while also heavily invested in the Mahanian naval arms race. Included here were Germany—heavily committed to the expansion of its surface fleet at the time—and Great Britain, with an obvious interest in maintaining the status quo in favour of its surface dominance, its noted hostility to the submarine, and the dreadnought program underway. Those against prohibition included France, with a heavy doctrinal and resource commitment to the submarine; the Netherlands, which prized it for its disproportionate strength in shore defence; and the US, which generally opposed restrictions on the basis that they did not want to forgo a weapon on uncertain moral grounds that might prove decisive in the future. Any noteworthy restrictions would require concordant and unanimous support which was clearly unavailable, leaving regulation effectively dead in the water.

Thus, delegates took the continued use of the submarine as a given bolstered by common recognition of the impossibility of a unanimous or permanent ban under present conditions. This strongly suggests that even if the potential of the submarine had been better realised ahead of time, full prohibition would have been deadlocked along strategic lines given poor concordance. Interestingly, this is an area where the prohibition of other novel forms such as aircraft and gas shells benefited. Consideration far earlier in their practical life-spans, or even

before their life-span, lessened the immediate strategic ramifications rendering complete prohibition more feasible—whereas the balance of power had already entangled the submarine.

Oddly, for the submarine the problem was almost too much specificity in other areas. States believed they understood its interactions in the maritime context far better than they actually did. In this sense at least, concordance was remarkably high in the agreement to *reject* the prohibition, either in part or fully, reflecting a concordant statement that the submarine posed no concern. Delegates receptive to prohibition were so strategically or superficially in service to disarmament, not as a challenge to this statement.

Though the failure of the regulatory measure on its own does not necessarily indicate a failure of norm establishment, the concordant rejection of prohibition and the absence of any specificity in the normative content does indicate a deeper failure extending beyond the concept of norm incompleteness. Not only was there no specific content, but states actively rejected the very idea of a norm. That rejection effectively achieved the reverse of a regulatory norm—it confirmed the legitimacy of the submarine. Accordingly, the submarine entered the war without special status or further attention, leaving it to the belligerents to parse *in media res* subject to their own understandings of international law, and their own interpretations of the submarine.

A useful counter-factual scenario is to consider if the submarine's interactions with merchants had been recognised ahead of time. In this eventuality, a regulatory norm would have been in a particularly beneficial position in terms of its congruency with surrounding norms. The maritime norms which states assumed would govern the submarine were among the most robust and best understood at the time, and importantly contained strongly agreed bounds

addressing merchants, neutrals, and non-combatants. Moreover, Mahanian adherents would likely have seized such an opportunity to mitigate a threat to their fleets, strategically and resource-wise—a dynamic commonly seen in regulatory efforts during the interbellum. Therefore, we might reasonably expect that with recognition ahead of time, regulation might have found a reasonable degree of support for constraints surrounding merchants in line with wider maritime expectations. We also need to note though that those maritime expectations were themselves somewhat incongruent with changes in the face of war towards nationalised, economic, and attrition forms. This, in particular, would prove divisive in the war to come. Unfortunately, this is only a counter-factual. Instead of a norm, other aspects of congruency carried the day; the believed 'logical absurdity' of limiting war without exceptional cause.

Nonetheless, the anticipatory failure illustrates the ready potential for major oversights when interpreting innovative warfare in advance. Anticipating the course of submarines in the maritime sphere benefited from major advantages. Particularly strong understandings of existing interactions in the domain—including strong governance surrounding commerce raiding by surface vessels—along with robust existing maritime norms, and a long lead-time approaching several decades with reasonably mature technology provided ample opportunity for recognition ahead of time. Yet, with minor exceptions, the idea of submarine attacks against merchants remained an 'unknown-unknown'.

The direct lesson for the overarching question driving this chapter is that when regulating in advance, robust understandings of even relatively small changes cannot be assumed. States and entrepreneurs alike will as a first step interpret innovative warfare through the lens of what came before and by situating innovations within existing theories. In this case the result

was a presumption and conviction that submarines were no more than coastal defence tools. The smaller the innovation appears at first, the greater the prospects that it is underestimated. In turn, this is a major barrier to the establishment of a regulatory norm in advance, understandings of innovative warfare are error-prone and can fail to identify the potential for morally transgressive behaviour in advance, meaning an attendant failure to justifying and direct measures addressing the innovation. Without a clear regulatory *raison d'être*, states will approach the subject sceptically and strategically with an immediately detrimental effect on concordance as strategy is all too often a zero-sum game.

In many ways this is an unavoidable complication of prediction, and especially prediction of the implications of innovations in an area as chaotic and unwieldy as warfare. That it occurred even in a well-understood domain only underscores the pervasive nature of the difficulty. After all, if to borrow from von Moltke, "no battle plan ever survives contact with the enemy," then the same is all the more true for regulation in advance; no prediction ever survives contact with reality.

Aerial bombardment

Considerations of aerial bombardment at The Hague produced one of the three regulatory successes of the conference—a declaration prohibiting "for the term of five years, the launching of projectiles and explosives from balloons, and other methods of a similar

nature."[94] Initial construction of aviation, therefore, clearly included the recognition of potential moral transgressions that the submarine lacked. The resulting norm establishment accompanying this was, however, fundamentally incomplete while the temporary regulatory component imposed no practical constraints and lapsed in short order. Nevertheless, in terms of regulatory norms addressing innovative warfare this marks perhaps a best-case outcome. Interpretations of aerial bombardment present at The Hague identified a troublesome behaviour associated with an innovative form of warfare ahead of time and in response established the concordant outline of a regulatory norm, carving out space for later specific content. Before examining The Hague proceedings themselves, it is necessary to explore the specifics of how aerial bombardment was interpreted in advance.

Early interpretations of aerial bombardment

In sharp contrast to the submarine case examined above, the substantial potential for moral transgression was factored into interpretations of aviation well before military aviation even existed. Fanciful tales from the classics aside, the contemporary period saw interpretations of flight including a morally transgressive element predate even the advent of balloon flight by more than a century. One notable early example came from a Jesuit monk named Francesco Lana, who anticipated what he termed the 'aerial ship' in the late 17th century. Lana, picturing the disruptive potential of attacks on cities, believed that aerial warfare would "create many disturbances to the civil and political government of mankind," so much so that

[94] Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director*, 220–22.

he believed God himself would disallow its use.[95] Before long, a wide range of futurists, authors, and inventors joined him. A frequent element in their excited speculation was the expectation that aerial warfare brought with it new forms of 'terribleness.'

The earliest experiences with balloons in the 1800s then began to demonstrate that potential and ensured moral concern remained high, despite restrictive technical limitations at the time. In the bombardment of Venice during the Italian revolt against the Hapsburgs in 1848 small balloons laden with explosives were released onto the city. They had little to no practical effect on the defenders, but this did not prevent the Austrian press from extolling the 'frightful effects' of attack from the air. Some 60 years later and shortly before the war itself Italian attacks with dirigibles and aeroplanes against the Turks in Libya during the Italo-Turkish war of 1911-12 met similarly grand claims. Once more the tangible results took a back seat to the believed morale effects reported in the press regarding the 'terrorised Turks.' This trend emphasised—and often embellished—morale effects while overlooking any practical or tangible aspects—like accuracy. By WWI, it had reached such an extent that an article published in *Scientific American* in 1912 placed the emphasis squarely on the morale dimension, arguing that "the importance of aeroplane bombs lies in their moral[e] effect—in the impression created that the machine in the sky is a real source of danger."[96]

As fiction shifted closer to reality so too did the trend, though with a twist—terror became an asset. Theorists placed greater and greater importance on the potential morale effects, so much so that they often eclipsed the tangible effects. The physical effects of early attacks proved so limited however that perhaps they did this out of desperation. Nevertheless,

[95] Walter Raleigh and Henry Albert Jones, *The War in the Air* (Clarendon, 1922), 29–30.
[96] Quoted in: Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914-1945.* (Princeton University Press, 2009), 19.

attempts to theorise and refine the pursuit of morale effects continued throughout the century, and notably focused their attention not on terrorising soldiers, but on societies. This direction fitted well with surrounding ideas. The 'will to fight' or 'will to resist' was central in many understandings of warfare, as were French notions of *élan* or *esprit de corps.* It was commonly believed that untrained and unprepared civilian populations were far less able to withstand the psychological strains of warfare. This belief, combined with concentrated civilian populations resulting from industrialisation and urbanisation and the increasingly nationalised nature of warfare, made the leap to targeting civilians and cities for both psychological and physical effect a natural one. Proponents believed that through air power one could speedily and directly undermine Clausewitz's 'paradoxical trinity' of military, government, and its people.[97] When taken to its logical conclusion, this thinking would lead to an aerial "knock-out blow" accomplishing a swift and one-sided victory. It "seemed probable that such panic and riot would be caused as to force [acceptance] of an unfavourable peace."[98] Thus, for those paying attention, aviation was equated with the bombardment of cities for effect on civilians very early on. This then became the locus of any associated moral concern, meaning that interpretations excluded the tactical domain and the host of indistinct complications that came with it—after all, what difference did it make if a shell was dropped from above or fired?

The central point is that there was clearly widespread recognition of the likely usefulness of aerial bombardment and its moral dimensions, where submarines entered and exited The

[97] Interpretations of this concept vary. Clausewitz's own direct definition is more essential than the adaption here—though this adaption is also widely used for better or worse. See: Carl Von Clausewitz, *On War, Indexed Edition*, trans. by Michael Howard and Peter Paret, 1984 Edition, 1st Princeton Paperback Printing (1989).
[98] Col Louis Jackson, 'The Defence of Localities Against Aerial Attack.' Jnl of the Royal United Services Institution 58, no 436. June 1914. p. 713. Quoted in: Biddle, *Rhetoric and Reality in Air Warfare*, 19.

Hague with little attention to their moral dimension. Early discourse had achieved tremendous steps in identifying and refining the specific areas of concern, thus beginning regulatory discussions with some substance. In other words, instead of attempting the prohibition of aviation simply because it was new and *pro forma* in service to the disarmament agenda, earlier discourse had already developed the sort of norm specificity which the submarine discussions sorely lacked.

However, suggestions of city bombardment were not automatically a cause for serious concern within military circles. As Howard put it, "war was beginning to become total—a conflict not of armies but of populations."[99] This expanded the scope for attacks against cities, but these were already an integral part of war. After all, one of Napoleon's dictates held that the bombardment of the enemy capital signified the end of the war. Precipitous aerial bombardment simply promised a means to skip straight to that step, offering a swift and decisive path to victory tailored towards the wide preference for short, sharp wars discussed above.

Furthermore, the concept of aerial bombardment was interpreted through directly analogous existing concepts of artillery bombardment and the regulatory norms addressing that behaviour. These existing regulatory analogues surrounding bombardment were pressed into service in the aerial context, with mixed effects. Though discrimination and proportionality as principles ideally excluded any harm to non-combatants, there are always exceptions. Understandings of the time permitted harm to non-combatants provided that the harm was ancillary to the attack of an otherwise lawful target (i.e. the harm was unintended and

[99] Michael Howard, ed., *Restraints on War: Studies in the Limitation of Armed Conflict* (Oxford University Press, 1979), 93.

indirect) and was proportionate to the military purpose of the attack. Beyond core principles, two further conditions could override protections for non-combatants: when they took actions which favoured a belligerent, and when in a city under siege. Both are also relevant to the discussion of aerial bombardment.

Distinctions between civilian and contributor to the war effort were under strain long before the introduction of aviation from shifts towards nationalised and industrialised warfare. Wars became protracted struggles determined by endurance as much as battlefield victory. Direct connections between industrial capacity, transportation infrastructure, and total military recruitment pools providing overall endurance created much closer links between nations and armies in the field, as well as strong contributions from the populations to belligerents. As these trends continued, the line between combatant and non-combatant became increasingly blurred. When an entire nation was at war, with its full population part of its levy and its industry thoroughly involved, where was the distinction?

The second set of relevant understandings surrounded ideas of siege. As mentioned, attacks against non-combatants within a city under siege were permitted. The basic idea was that risk and responsibility for harm to non-combatants fell on the commander of the besieged city, incumbent on the assumption that opportunities for surrender or escape had already been rejected. In these circumstances harm to non-combatants was an acceptable means to undermine the morale of the defender and the siege.[100] A closely related concept was the idea of a 'defended town.' When this was devised, battles were concentrated struggles fought on open terrain or attempted sieges of (usually) heavily defended cities from their immediate

[100] James Turner Johnson, *Just War Tradition and the Restraint of War: A Moral and Historical Inquiry* (Princeton, N.J, 1981), 196–98, 200–203, 222–23.

surroundings. Cities and towns lacking in strategic value were not defended, as it made no sense to do so. Thus, as long as residents in those towns offered no resistance, undefended towns were left unmolested by passing forces.

In all, these understandings ensured that from the outset interpretations of aerial bombardment contained morally transgressive elements sufficient to justify some measure of regulation by invoking in-principle linkages to the robust and concordant civilian protection norm from related behaviours. In anticipatory terms regarding innovative warfare in advance this is perhaps a best case. The recognition provided a strong starting point for devising behavioural guidelines that invoked a robust and shared wider norm, meaning immediate congruency with the ecology of norms. Subsequent discourse at The Hague, therefore, benefited extensively from precisely what the submarine discourse had lacked—a regulatory *raison d'être*.

However, applying these understandings to aerial bombardment also produced a maze of confusion. When striking a distant target from the air in a nationalised war, how on earth did these concepts apply? Did they apply at all? There were no shared or consistent standards for proportionality, discrimination, or what constituted a 'defended' town. Moreover, were new understandings of these questions for aviation expected to be directly comparable with conventional land-based understandings? Nevertheless, the existing regulatory norms addressing bombardment offered a second area of norm content from which to draw when discussing aerial bombardment at The Hague.

The temporary prohibitions at The Hague

Bolstered by analogous precedent and clear potential for moral transgression invoking the civilian protection norm, regulation at The Hague did not have to rely on implicit justifications stemming from the incongruent wider disarmament agenda. Accordingly, aviation received extensive consideration at The Hague conferences beginning at the first in 1899. Though the initial proposal was for a permanent prohibition, the result became a temporary prohibition on bombardment from the skies in 1899, renewed in 1907 with a commitment to revisit the issue at a third conference planned for a later date. Declaration IV, 1 in 1899 stated "for the term of five years, the launching of projectiles and explosives from balloons, and other methods of a similar nature."[101] However, despite the significant advantage in recognised and analogous precedents, the path to and from this outcome strongly exemplifies 'incomplete' norm establishment as a best case. At the essence of this was the fundamental difficulty in devising specific regulation addressing an entirely novel domain of warfare.

Reflecting those precedents just examined, the attending states agreed from the outset that aerial bombardment contained troublesome aspects related to the civilian protection norm, but immediately differed on what those might be and how best to address them.[102] The barrier was their understanding or rather the lack of it. Balloons and early dirigibles had been employed for limited military purposes—mostly reconnaissance and some scattered bombardment—for some time and delegates were certainly aware of the various

[101] Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director*, 220–22.
[102] The single best account of state positions regarding the regulation of air power is found in Royse, *Aerial Bombardment and the International Regulations of Warfare*, chap. 3.

development efforts under way. Yet they also recognised that capabilities in the present were distinctly limited and poorly understood. The vague possibilities of flight were acknowledged, but no specifics were available. As an innovation, flight was still very much in its infancy.

Acknowledging this meant acknowledging that nuanced discussions or devising lasting regulation were therefore impossible in practical terms, and so not seriously attempted. A scholar writing shortly after the second conference captured this attitude well, stating "it is not advisable to adopt a broad statement in the conventional regulation of a new subject, as experience alone can demonstrate the real necessitates of international intercourse."[103] In other words, it took war itself for leaders to understand innovative warfare enough to regulate it, meaning that developing nuanced behavioural guidelines and specific norm content was near impossible.

With detailed regulation impossible, the question was reduced to one of either a complete prohibition or no regulation at all. States devised their answers primarily via strategic logics and demonstrated very little concordance on the subject. Some favoured outright and permanent prohibition of any aerial bombardment—particularly those states with faltering development efforts—while others either opposed prohibition entirely or sought deferment of the matter to a later date—notably those with strong development programs.[104] The 1899 discussions were thus deadlocked along largely strategic lines as states interpreted aviation very differently in that regard. Once more, as with submarines, security is a zero-sum

[103] Arthur K. Kuhn, 'The Beginnings of an Aërial Law', *The American Journal of International Law*, 4:1 (1910), 114.

[104] Russia, for example, favoured a ban as her dirigible development program was badly stalled. Germany and France, on the other hand, strongly opposed restrictions on the strength of their own programs. Great Britain and a host of other states hedged their bets and opposed permanent or expansive restrictions in the hope that they might benefit in the future. The British in particular looked to aviation to help offset their comparatively small land-forces.

endeavour and the prospects for unanimous rejection of an entire means of warfare without first understanding it are practically nil—especially given the international climate at the time.

Any hope of a regulatory outcome was fading fast when a last-minute compromise proposal from an American delegate, Captain William Crozier, narrowly avoided this fate. He suggested amending a five-year sunset clause to the ban, intended for revisitation at the next conference in the hope that a clearer picture of air warfare would emerge in the interval.[105] Crozier argued the following:

> Since it is impossible to foresee the place where the projectiles or other substances discharged from a balloon will fall and since they may just as easily hit inoffensive inhabitants as combatants, or destroy a church as easily as a [artillery] battery. However, if it were possible to perfect aerial navigation in such a way as to do away with these defects, the use of balloons might decrease the length of combat and consequently the evils of war as well as the expenses entailed thereby.[106]

In recognising the presently limited state of aviation technologically and conceptually, Crozier's amendment leveraged the same towards a regulatory outcome through noting the overreach of a permanent and complete ban on a heretofore unknown spatial domain of warfare—including its use in the tactical space. This is remarkable on two levels. First, it effectively shifted the essence of the discourse from the question of prohibition to one of regulation, despite the impossibility of regulation at that point in time. Second, it successfully circumvented the strategic deadlock through its temporary nature, while also successfully

[105] The text of the Crozier Amendment (proposed by US Captain William Crozier) can be found in W. Hays Parks, 'Air War and the Law of War', *Air Force Law Journal*, 32 (1990), 11.
[106] ibid. p.12.

carving out conceptual space for detailed regulation later via a codified and concordant statement of support. With this compromise the temporary prohibition was passed and later ratified.

However, the strength of the temporary prohibition should not be overstated. Whatever significance it had on paper, in practical terms it was ineffective. While the temporary prohibition was active there were no major wars, and thus no opportunity for bombing between the signatories of the conferences nor was even modest bombing practically achievable. Moreover, with the limited range, control, and carrying capacity of early balloons, dirigibles and early fixed-wing aircraft of the time, the only possible targets were firmly within the tactical sphere and also within range of artillery, rendering aerial bombardment moot in light of artillery's rapid advancement. Nor did the ban place any limitations on continued development or the relatively simple task of adapting civilian advances to military ends.

Critically, this was not the intention of the ban as its having no practical effect was the main factor enabling its passage. Those states who wanted prohibition got it, while those who did not lost nothing given the early stage of development. As O'Brien put it, the rules for aerial warfare were "consciously ineffectual" and the march towards military aviation continued unabated.[107] Were aviation a more mature technology at the time, or better integrated into national strategies as submarines were, it is unlikely that even a temporary measure would have endured. Nevertheless, the chief accomplishment in 1899 was to keep the idea of regulation alive, despite the impossibility of devising that regulation at the time.

[107] William V. O'Brien, 'The Meaning of Military Necessity in International Law', *World Polity*, 1:109 (1957), 134.

The 1907 conference added little to the work of the first beyond a renewal of the temporary ban until the planned third conference. The advent of fixed wing aircraft with the Wright brother's flight in 1903 ensured that substantial technical uncertainty remained, while expansive dirigible construction programs by a number of states heightened the underlying strategic considerations immensely. If 1899 was primarily an expression of the strategic calculations of the participating states, 1907 directly continued that trend. With the disarmament agenda now in tatters, states interpreted the temporary prohibition in strategic terms all the more. Russia, in a reversal of its previous position following a redoubling of its military modernisation after its embarrassing loss in the 1904-05 Russo-Japanese war, now opposed restrictions. Great Britain, too, reversed its position to favour regulation—if not complete prohibition—as the defensive advantage of the Channel was now under threat from the Anglo-German Naval Arms Race and rapidly growing French air power, including the only military fixed wing aircraft at the time. A collection of other states including Austria-Hungary, Greece, Portugal, China, and Turkey also sought to continue the ban of the previous conference for the same reason that Russia had called the conference in the first place: the enormous development costs involved in keeping pace. Finally, the US and Japan, both comfortably removed from aerial threat, adopted a posture of detached indifference and were content to watch developments in Europe from a distance.

A further aspect of the 1907 conference worth noting is some minor recognition of aerial bombardment in its other provisions. Adjustments to Article 25 of the Annex to Convention IV stated that "the attack or bombardment, *by whatever means*, of towns, villages, dwellings, or buildings which are undefended is prohibited."[108] This revision in many ways supplanted

[108] Emphasis added to note the amended language expanding its scope to, arguably, cover aerial bombardment. See: Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables*

the need for a temporary prohibition by applying existing bombardment regulatory standards to aerial cases, though with some of the clear problems already noted. These revisions still offered no definition for 'defended', nor sought to clarify the other troublesome assumptions and definitions when transferred into the aerial context. This is understandable given the lack of a practical reference point, but still marks a distinct weakness. Some help came from the terms of Convention IX. Ostensibly intended to regulate naval bombardment, this article included the first codification of 'military significance' as a guiding principle for discriminating targets beyond the immediate battlefield. Thus began the complicated task of untangling the Gordian knot of nationalised warfare, but only as a very limited first step. Specifically, Article 2 of Convention IX states lawful bombardment targets as "military works, military or naval establishments, depots of arms of war materiel, workshops or plant(s) which could be utilized for the needs of the hostile fleet or army, and the ships of war in the harbour." Importantly, the convention also absolved the attacker of responsibility for 'unavoidable' collateral deaths during bombardment. It was viewed simply as a statement of customary international law as commonly understood on both counts.

This marked a somewhat ineffectual end to attempts to regulate aerial bombardment in advance. The planned third Hague conference never occurred. It was first postponed, saw a change of venue then was finally overtaken entirely by events in the run up to war. Interestingly, the derailment of the third conference likely prevented the formal rejection of the temporary ban as another renewal was unlikely.[109] Ultimately, in the words of one international lawyer at the time, the second conference represented a "direct regression from

of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director.

[109] Parks, 'Air War and the Law of War', 19–20.

the humanitarian viewpoint" due to its inability to expand on the measures concluded at the first conference.[110] Though Crozier's amendment carved out conceptual space for regulation, there was still no specificity available to fill it or complete the process of norm establishment. Moreover, the 'consciously ineffectual' nature of prohibition remained, then worsened as the 1907 declarations were ratified by only two parties, Great Britain and the United States, reflecting narrow concordance even then.

Despite the advantage provided by early recognition of a regulatory *raison d'être* and the limited strategic impact at the time enabling a 'consciously ineffectual' prohibition as a stop-gap, norm establishment was not accomplished. The fledgling aerial bombardment norm exemplifies the probability of incomplete establishment in advance even in best case circumstances.

The temporary prohibition served as a concordant statement recognising the applicability of civilian protection norms to aerial bombardment and established the outlines of a norm. But the discussions in 1899 and 1907 could take the matter no further as they suffered from the same problem: a known shortfall in understandings that prevented the further development of norm specificity. Aviation was simply too new and too large as an entire spatial domain for adequate prediction or for developing specific norm content beyond that point. States and delegates alike believed the information scarcity was sufficiently severe that attempting specific regulation at that point was both undesirable and unwise, just as any permanent prohibition constituted an over-reach. Crozier's amendment circumvented states' concerns by avoiding a permanent 'shot in the dark,' but could do nothing to resolve the absence of

[110] Quoted in Parks, 'Air War and the Law of War', 19.

content.[111] The nascent norm was left without any nuanced guidelines meaning that it remained fundamentally incomplete and its specific content was left for later actors to parse *in media res.*

Concordance on this incomplete norm was also weak owing to its absent content. Without specific content around which to build specific concordance, the agreement on display reflected wider agreement on the civilian protection norm as potentially applied to aerial bombardment but did not extend to concordance on any version of that application. Restraint in the air rested on states' underlying interpretations of customary international law, and how their interpretation might fill the missing norm content concordantly once at war. Even minor variances in interpretation could easily trigger unrecoverable spirals of retaliation and reprisal. There is relatively little indication of each state's position on specific bounds prior to the war. Many states paid no systematic attention to aviation at this early juncture, making no effort to parse its implications and interactions with law. Even those exploring its technical pursuit did not examine its legal and doctrinal implications. After all, the first requirement for bombing policy is the ability to bomb which none yet possessed. Positions at the conference also suggested little. As with submarines, most of the states attending The Hague conference opposed a complete and permanent prohibition of aviation at one of the two conferences, indicating broad agreement that aircraft did not possess an inherently troublesome moral quality that demanded their complete rejection. The success of the Crozier amendment and the temporary ban hints at broad concordance on a narrower set of limitations, but this should not be overemphasised given the 'consciously ineffectual' nature of the measures and strategic tone of the conferences. Accordingly, Parks sums up the situation sceptically, stating

[111] A 'acting in the dark' is how the American delegate to the 1899 Hague conference, Captain Crozier, described the task of regulating in advance due to its uncertainty and high risk of error.

that "… any such attempt to slow the advance of aviation in the years immediately preceding World War I would have been much the same as the proverbial broom sweeping to hold back the tide."[112]

Instead, norm content was ambiguous and to be derived from heavily convention-dependent understandings of measures beyond the direct regulation of aviation. These, too, were weakly specific in their own contexts due in no small part to their reliance on good faith interpretation in the field, thus offering little by way of consistent behavioural guidelines. Article 2 of Convention IX did offer some aid through codified examples of acceptable targets, but the list was not exhaustive and remained a matter of piecemeal application. Similarly, the concept of a defended town was ill-defined and anachronistic, functional perhaps in its original context but woefully inept in a continent-wide war between nations. Finally, the changing nature of industrialised warfare also challenged many of the core assumptions behind these articles, already rendering much of their content anachronistic before they were applied to an entirely novel context in a very different kind of war. Though all agreed in principle on the ideas of discrimination and proportionality, and largely agreed to the version of those principles codified at the 1899 conference, where and how each state applied them differed considerably. As states would soon discover, a fundamental discord existed on exactly that point, and particularly in relation to innovative warfare.

[112] Parks, 'Air War and the Law of War', 20.

Gas shells

The third and final case examined here is the curious measure addressing gas shells, stating the prohibition of "projectiles the sole object of which is the diffusion of asphyxiating or deleterious gases."[113] This represents an especially odd case of securing a prohibition in advance, but *without* also clearly establishing an accompanying norm. There were some suggestions of moral content surrounding the ban, but its substance was confused as suggestions of normative objections to gas itself were actively rejected. Meanwhile, the text of the prohibition acted to ban gas as an entire class of weapon, something states were loath to do in every other context and which was an act utterly inconsistent with the remainder of the conferences. Thus, the intent and substance of gas shells and the prohibition was highly ambiguous, while confusion rather than certitude typified interpretations of any moral content.

The simplest explanation for this outcome is that gas weapons were almost entirely novel—in that they were hypothetical and previously unconsidered—and as states and delegates alike attempted to interpret them as a weapon *in media res*, they did so without a strong understanding of what they were regulating. Unlike submarine and aerial bombardment, there was little directly analogous precedent or recognised existing regulation through which to conceptualise gas warfare. Instead, in confronting complete novelty delegates interpreted gas shells through analogy to something they did understand, explosive shells. The consequence was that the truly innovative component—gas—was largely overlooked and the

[113] Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director*, 225.

salient detail of its independent use outside the context of explosive shells was missed in turn. The prohibition proceeded for much the same reason as the associated normative content was limited and ambiguous: the subject matter was inconspicuous to a fault. None believed it significant or paid it careful attention outside the limited deliberations which hinged on the closest analogical comparison available—shells. The result was an effectively accidental prohibition with far greater scope than one would otherwise have expected, but also without developed specific norm content to match its scope or significant concordance on gas as means of warfare.

As with the above examinations, exploring this outcome in detail first requires discussion of the limited antecedents of chemical warfare before considering the efforts to interpret gas shells at the conference directly.

Antecedents of chemical warfare

As a concept, chemical warfare is ancient and dates back at least as far as 429 BC when, during the Peloponnesian War, Spartan forces burnt sulphur to cast clouds of sulphur-dioxide and sulphur-trioxide against Platean positions during the Siege of Platea. However, at the turn of the 20th century, there was little consideration of the military implications of chemicals and even fewer attempts to use them.

State perspectives were largely unaware of the possibility prior to The Hague in 1899, despite the notion being common enough to have found publication in *Scientific American* in 1862, where an anonymous author proposed both chemical-incendiary and chemical-asphyxiating

shells. The suggestion is not surprising thanks to the growing number of industrial chemists and other similarly educated persons since the Enlightenment. Many with the requisite knowledge post-'chemical revolution' naturally turned their attention to warfare. However, the concept of chemical weapons was a sizable departure from the commonly considered methods of war at the time and included substantial complexity in application. Recognition beyond those specialists was therefore limited as the discourses did not often overlap. Conventional military thinkers were not often chemists, nor the reverse. As is often the case, high magnitude conceptual shifts require unconventional or extreme circumstances to find full consideration—both of which would soon be present in WWI—but in the meantime few gave the concept any thought.

The few occasions where chemicals did receive serious consideration prior to The Hague conferences came to naught. For example, shells containing chlorine were suggested several times during the US Civil War by multiple advocates but never proceeded past suggestion. The most thorough example came from the British in 1812 when a young officer—Thomas Cochrane—proposed the use of fire ships loaded with coal and sulphur off the coast of naval fortifications, then lit with favourable winds. The concept was similar to that at Platea over two millennia earlier, where toxic fumes would kill, incapacitate, or displace the defenders, allowing troops to easily secure the fortifications. The complexity alone doomed Cochrane's proposal, and the assessing commission declared that they could not reach a definitive decision on account of its novelty. Later—and now an Admiral during the Crimean War—Cochrane reprised the idea only to find rejection once more on the basis of its complexity.

Interestingly, this time the panel also rebuked the concept as "so horrible that no honourable combatant would use it."[114]

Another chemist presented his idea of chemical warfare during the Crimean War. Lyon Playfair proposed the use of naval shells loaded with cacodyl cyanide in the belief that "such a shell going between the decks of a ship would render the atmosphere irrespirable and poison the men if they remained at their guns." This too drew a rebuke. Comparisons to poisoning water supplies and invocation of the strong poison prohibition saw it rejected as well.[115] Playfair's response is noteworthy. He argued that: "there was no sense in this objection. It is considered a legitimate mode of warfare to fill shells with molten metal which scatters among the enemy, and produces the most frightful modes of death. Why a poisonous vapour which would kill men without suffering is to be considered illegitimate is incomprehensible."[116] This would become a common strand of argument in vigorous debates to come.

These examples briefly illustrate the view of chemical warfare prior to The Hague, i.e. complicated, heretofore unconsidered, and possibly odious but not without its believed merits. Furthermore, such considerations prior to The Hague were isolated, meaning no ongoing discourse or reference between cases. Thus, the fleeting idea of chemical warfare remained firmly on the fringes and suggested a mere shadow of what was to come. Unlike submarines and aviation, chemical warfare entered The Hague in 1899 without an established

[114] Wyndham D. Miles, 'The Idea of Chemical Warfare in Modern Times', *Journal of the History of Ideas*, 31:2 (1970), 299.
[115] Miles, 'The Idea of Chemical Warfare in Modern Times', 299.
[116] Ibid.

background or conceptualisation of its role, function, or any significant interpretations of its meaning.

Prohibiting 'asphyxiating and deleterious' shells

However sporadic and isolated the previous considerations, a vague notion of 'gas shells' was nevertheless included for international discussion at The Hague in 1899. Article IV, 2 called for "abstaining from the use of projectiles the object of which is the diffusion of asphyxiating or deleterious gases." [117] With minor alterations and without extensive discussion this simple statement passed in 1899 and was renewed in 1907. This was one of the only three successful proposals from 1899, and fatefully became the anchoring precedent of the robust chemical weapons prohibition that exists today. At the conference, following a very brief discussion, in a vote all but two states responded positively. Great Britain supported the motion conditional on unanimity, but then voted against in light of the second objection from the United States. With only two states against and a clear majority for, the prohibition passed without fanfare and discussion turned to the next item on the agenda, torpedos.

However, despite the apparent intent in the text for a complete and permanent ban of gas shells, and potentially chemical weapons as a whole, this was not the case. Instead, the prohibition and its scope were a case of 'inadvertent regulation' owing to the pre-emptive consideration of innovative chemical weapons at the time. In effect, the wider concept of gas

[117] Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director*. Article IV, 2.

warfare was regulated well before it was even partially understood. This had several effects on the attempted establishment of a regulatory norm that require closer examination, and interestingly, also account for its unlikely passage.

First and foremost, the extreme novelty of gas shells meant that the delegates did not understand what they were regulating. Whereas delegates believed they understood the role of the submarine, and had an idea of the potential of aviation, gas shells were heretofore unknown. The initial proposal from the Russian delegate introduced the measure as one related to other measures against 'new kinds of explosives', and noted that the invention of shells loaded with explosives that spread asphyxiating and deleterious gases "seems possible."[118] Not only did the delegates hardly understand the concept, they certainly had given it no prior thought, meaning they approached regulatory discussions without any preconceived or ascribed meanings of the concept presented before them.

The basic concept of a gas shell therefore required multiple rounds of clarification before discussions could even begin.[119] Faced with this hypothetical, delegates interpreted the glimpses of the novel element in gas shells (i.e. gas) through relation to a weapon they understood and through which it was introduced (explosive shells). In doing so, they largely overlooked the salient and novel detail—being the nature of gas as a weapon—and did not engage in an extensive discussion of it, despite that being the distinctive aspect of the regulation. Essentially, delegates understood gas shells via direct analogy to regular explosive shells, believing them just a new twist on an existing weapon not the vanguard of chemical

[118] Scott, *The Proceedings of the Hague Peace Conferences: Translation of the Official Texts*, II, 365–66.
[119] Price, *The Chemical Weapons Taboo*, 31.

warfare to come.[120] This was an entirely understandable error, of course, but an error all the same and intimately tied to the business of in advance considerations.

Second, the delegates offered limited notions of why they were regulating gas shells at all, and in a manner inconsistent with the text and wider trends at the conference. Where the text prohibited gas shells outright as a new form of explosive, other measures seeking the same restriction were rejected outright. Furthermore, attitudes demonstrated throughout the entire conference—often by the same delegates—suggest that the gas shells measure should have found the same outcome. Whenever there was wide recognition of military utility, present or expected, strong constraints—such as the complete and permanent prohibition of an entire class of shell—found equally strong opposition and triumphed only sparingly, with a careful mind to any unintended long-term effects. Moreover, preferences for 'short, sharp, wars' and the view upheld elsewhere that weapons and innovations were 'value-neutral' suggest that delegates would have objected to a complete and permanent ban of gas shells without a compelling reason offered. In fact, many expressed this logic during the discussions in directly questioning the future standing of a gas shells prohibition.[121] They argued that with continued development such shells could one day become a meaningful—even decisive—tool, and that a permanent ban might prove a humanitarian net-negative by prolonging future conflict. The American delegate, Captain Alfred Thayer Mahan, in particular carried this strand of argument into his final objection, stating that "to render war more humane, but which may be called upon to make war, (and) it is therefore necessary not to deprive one's self, by means of hastily adopted resolutions of means which might later on be

[120] See: Price, *The Chemical Weapons Taboo*, 30–35.
[121] Price, *The Chemical Weapons Taboo*, 32–33.

usefully employed."[122] Yet, curiously, the delegates still saw fit to pass a prohibition that achieved exactly this without articulating a clear reason why.

Furthermore, justifications of the prohibition rested strictly on the possible impact of such shells on non-combatants if used against populated areas, i.e. an expression of the civilian protection norm. The Russian delegate who proposed the measure suggested that "if directed against a besieged city, they would perhaps hit more harmless inhabitants than the ordinary projectiles."[123] As the head of the American delegation, A.D. White, noted later in his memoirs in 1912, the critical argument supporting the prohibition was the possibility that gas shells might be used against towns, recalling that "as it seemed to me, with force—that asphyxiating bombs might be used against towns for the destruction of vast numbers of non-combatants, including women and children, while torpedos at sea are used only against the military and naval forces of the enemy."[124] The presumptions in these remarks founded the subsequent momentum towards prohibition, but failed to identify a problem with the nature of the weapon itself if used on the battlefield or otherwise away from civilians, behaviours which were also prohibited by the text. If the delegates considered the existing principles protecting non-combatants insufficient to the task in the face of gas shells, then why not a specific prohibition on their use against towns or non-combatants, instead of a complete and permanent ban inconsistent with wider trends? That the text of the prohibition then makes no reference to the protection of non-combatants only adds to the confusion.

[122] Scott, *The Hague Conventions and Declarations of 1899 and 1907, Accompanied by Tables of Signatures, Ratifications and Adhesions of the Various Powers, and Texts of Reservations; Edited by James Brown Scott, Director*, 365–67.
[123] Scott, *The Proceedings of the Hague Peace Conferences: Translation of the Official Texts*, II, 366.
[124] Andrew D. White, *The Hague Peace Conference* (The World Peace Foundation, 1912), 82–83.

Looking at the proceedings in retrospect today in the presence of a strong chemical weapons opprobrium, and noting the sporadic moral injunctions to the antecedents of chemical warfare, we are invited to assume that the initial Hague ban stemmed from associations with poisoned or otherwise toxic weapons, which might then explain the prohibition's breadth. However this was not the case. In fact, delegates explicitly and implicitly rejected the connections with poison. The conspicuous lack of inter-article linkage with Article 23(a) of the same conference, codifying that "poison and poisoned weapons [were] expressly prohibited" is one illustration of this.[125] Such inter-article linkages were frequent elsewhere and delegates demonstrated high awareness of the possible relevance to and cross-over between prohibitions of other emerging technologies, yet declined to do the same for asphyxiating and deleterious shells. If that association had been present, one would have expected to see a broader response comparable to the general measures enacted against poison at the same conference, or the inclusion of gas shells within those measures. Instead some delegates explicitly challenged such a connection, making it clear that they did attach distinctive moral reasoning to the gaseous nature of the shells. Interestingly, these objections echoed Playfair nearly 50 years earlier.[126] Mahan, for example, argued the following:

> The use of projectiles of the kind in question can not be considered a means which is prohibited on the same ground as the poisoning of waters. Such projectiles might even be considered more humane than those which kill or cripple in a much more cruel manner … Supposing that projectiles of the kind should be invented, their use may produce decisive results. Moreover, it

[125] Ann Van Wynen Thomas and Aaron Joshua Thomas, *Legal Limits on the Use of Chemical and Biological Weapons* (Southern Methodist University Press, 1970), 55.
[126] Price, *The Chemical Weapons Taboo*, 33.

> would involve neither useless cruelty nor bad faith, as exists in the case of poisoning waters. … the use of those projectiles ought therefore be considered as a lawful means of waging war. [127]

Other delegates offered similar objections to attaching moral distinctions to gas shells. For example, the subcommittee president, Karnebeck, responded to a suggested comparison with poisoning rivers by stating that "asphyxiating projectiles no more have this character than ordinary ones," all while Mahan's objections remained unanswered.[128]

It appears that despite the confusion and inconsistencies in the text the passage of the prohibition occurred primarily because gas shells did not exist at the time and were interpreted as a minor curiosity, not a matter of major importance. So low was their profile that C.D. Davis notes: "there was talk of including the three declarations drawn up by the first commission in a fourth convention, but it was decided not to dignify those insignificant resolutions in that way. They were to go before the conference as separate documents, hardly more important than the numerous recommendations attached to the final act."[129] Accordingly, the delegates moved on to weightier matters quickly. In effect, they largely overlooked the potential significance of gas as a weapon while passing a prohibition on an unheard-of alternate shell which possessed no military application or ramification at the time, and which was tucked away within a conference of immense scope. Thus, the intent behind the prohibition was not directed at interpretations of gas warfare, let alone on an industrial scale.

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[127] The full debate is contained in Scott, *The Proceedings of the Hague Peace Conferences: Translation of the Official Texts*, II, 365–67.
[128] Quoted in Price, *The Chemical Weapons Taboo*, 33.
[129] Calvin DeArmond Davis, *The United States and the First Hague Peace Conference* (Cornell University Press, 1962), 175.

Whatever the intent, the fortuitously codified legal prohibition on gas shells came with numerous areas of significant weakness, not the least of which was its specificity and concordance. As the delegates did not understand the subject they were regulating, or fully appreciate its eventual use in a manner comparable to the submarine considerations, the outcome was similarly hampered by the novelty of the subject. Specificity was almost entirely lacking as those drafting the regulation simply did not understand the completely novel innovation. Although the text identified a target clearly—gas shells—it offered no definitions or clarification on the meanings of deleterious or asphyxiating. Moreover, as one of the delegates noted, the presence of such emissions came hand in hand with propellants and explosives so in a sense all shells fitted this description. Adjustments to the language specified shells whose 'sole object' was the distribution of such gases, but with no threshold or criteria for assessing the objective of a shell. Explosive shells which 'inadvertently' produced substantial quantities of gas met no objection in the text. And of course, nor were shells the only means of distributing gas.

Beyond the textual weaknesses, the *raison d'être* for regulation was unclear and offered a poor guide to its application. The fleetingly stated justifications identified civilian protection not battlefield use, while the text made no reference to either. Interpreting the discussions and text side by side could easily lead to contradictory understandings, i.e. the opposite of a well-understood set of behavioural guidelines. The apparent concordance on display in passing the regulation better reflects commitment to the wider civilian protection norm invoked during the discussions, than a comment on the character of gas or firm belief in its complete impermissibility, regardless of the scope of the text. Instead, the rejection of arguments against the character of gas suggests that there was stronger concordance against regulation on those grounds than for it.

In all, without clear movement on either major axis of norm establishment it is difficult to conclude that The Hague's gas shells prohibition equated to the establishment of a regulatory norm addressing gas warfare in advance. At best it was a remarkably weak normative suggestion surrounding the character of gas shells partnered with a confusingly ambiguous statement of their impermissibility for the purposes of city bombardment. At worst it was an accident owing to the perceived insignificance and misunderstanding of what they were regulating.

Ultimately, it is unclear what the delegates had in mind and it is quite possible that not even the delegates themselves knew. Ambiguity reigned between the limited objections identified during the discussions and the mismatched text amounting to a complete ban, but only on shells. Later interpretations seized on this to transform the gas shells prohibition into a broader chemical weapons prohibition, regardless of the intent. But it is important to note that this process did not seriously begin until after the war. Some have erroneously argued that the gas shells prohibition expanded into a commonly understood 'in spirit' ban that operated beyond the letter of the text by the eve of war. One prominent proponent of this is the exhaustive, and otherwise excellent, SIPRI study which states: "during World War I, when the first large-scale use of chemical weapons occurred, there was already a widespread belief that such use was contrary to the law of war. This is indicated by the fact that both sought to justify their actions by claiming they were using gas in reprisal."[130] However, the authors offer little to support this statement and there is sparse evidence to sustain it. Certainly, during the war both sides made extensive efforts to justify their use of chemicals, especially through claiming a right of reprisal. But a better understanding of this is as an expression of

[130] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, vol. 3 p. 103.

propaganda framing and justifying one's actions in terms of international law, while critiquing one's adversary by the same route. As I explore in chapter 3, these appeals also lacked a strong normative or stigmatic character throughout.

Conclusions: incomplete and fragile establishment in advance

To return to the overarching question, what do these historical cases tell us about the nature of establishing regulatory norms addressing innovative warfare in advance? The empirical examinations throughout this chapter illustrate that there are major barriers on both internal axes of norms identified in chapter 1—specificity and concordance. Principally, the above cases highlight that understandings of innovative warfare prior to its use are extremely limited, such that even major salient details may be entirely unrealised ahead of time despite thorough consideration. The possible use of submarines against merchant vessels was roundly dismissed as existing maritime norms were believed more than sufficient to govern a costal defence tool. Gas shells, meanwhile, were interpreted as shells first and foremost, not the vanguard of gas warfare writ large. Attempts to regulate suffered accordingly and exhibited little if any signs of norm establishment because their subject was simply not understood at the time.

Initial understandings of bombardment demonstrated stronger recognition of possible moral transgressions, but states were equally aware of just how little they understood and how much was at stake by 'acting in the dark.' Though the consciously ineffectual Crozier amendment secured an expression of in-principle commitment to civilian protection as applied to aerial bombardment, nothing more was possible in terms of specific behavioural

guidelines. All the while, major strategic interests waited in the wings ensuring that concordance on anything other than vague or temporary measures also faced major challenges. Without norm content, there could be no concordance on that content. On the contrary, the strongest demonstrations of concordance were in rejecting regulation deemed an overreach or presented without suitable justification.

It is no coincidence that appeals to civilian protection featured prominently in the limited successes above. The regulation of expected behaviours requires some aspect of those expectations to demand regulation. When glimpsing potential future behaviours through the uncertainty of anticipation and the fog of war, the clearer those aspects are the stronger the demand. The potential for indiscriminate or disproportionate harm to non-combatants provided the key regulatory *raison d'être* in each, anchoring the impetus for regulation to the wider ecology of norms—and importantly invoking clear and core just-war understandings that equally clearly demanded restraint. The likely impossibility of establishing international norms *de novo* is well noted.[131] Thus, the ability to clearly anchor interpretations of an innovation—however limited—to an already established and shared norm which then equates to an argument for a regulatory response, is therefore essential to the process of norm establishment in advance. Without significant and widespread use to quantify the need for regulation, anticipatory recognition of a *raison d'être* is pivotal.

Furthermore, the presence of a regulatory *raison d'être* provides a starting point for norm specificity and concordance. For specificity, the *raison d'être* is a focal point for further behavioural guidelines which reflect the shared point of moral concern but do not amount to the prohibition of an entire domain of warfare with the divisive strategic ramifications that

[131] Kowert and Legro, 'Chapter 12. Norms Identity, and Their Limits: A Theoretical Reprise', 469.

entails. For concordance, a *raison d'être* 'bootstraps' shared agreement to the need for regulation and its justification, cutting through the interpretations states will ascribe to new means and methods of war subject to their own interests and circumstances.

Without a compelling *raison d'être*, the establishment of regulatory norms in advance encounters the reticence of states directly confronting innovations with limited understanding. Crozier's comments supporting his sunset clause illustrate this well.

> It seems to me difficult to justify by a humanitarian motive the prohibition of the use of balloons for the hurling of projectiles or other explosive materials. We are without experience in the use of arms whose employment we propose to prohibit forever. Granting that practical means of using balloons can be invented, who can say that such an invention will not be of a kind to make its use possible at a critical point on the field of battle, at a critical moment of the conflict, under conditions so defined and concentrated that it would decide the victory and thus partake of the quality possessed by all perfected arms of localizing at important points the destruction of life and property and of sparing the sufferings of all who are not at the precise spot where the result is decided. Such use tends to diminish the evils of war and to support the humanitarian considerations which we have in view.
>
> I do not know of machines thus efficient and thus humanitarian, in the incomplete stage of development in which aerostation now is; but is it desirable to shut the door to their possible introduction among the permitted arms? In doing so, would we not be acting entirely in the dark, and would we not run the risk of error inherent in such a manner of procedure? The balloon,

> as we know it now, is not dirigible; it can carry but little; it is capable of hurling, only on points exactly determined and over which it may pass by chance, indecisive quantities of explosives, which would fall, like useless hailstones, on both combatants and non-combatants alike. Under such conditions it is entirely suitable to forbid its use, but the prohibition should be temporary and not permanent. At a later stage of its development, if it be seen that its less desirable qualities still predominate, there will still be time to extend the prohibition; at present let us confine our action within the limits of our knowledge. [132]

In effect, 'acting in the dark' carries a high risk of error and casts a long shadow considering the relative certainty of future change, meaning that states are unwilling to support speculative regulation for its own sake. States will only accede to restrictions on their capacity to wage war once their security is assured and if such restrictions will not disadvantage them over their adversaries. From a position of uncertainty regarding innovations that do not yet exist, contemplating the regulation of behaviours that may not exist, regulation in advance is a tremendous uphill battle as even-handed security cannot be assured.

Of the three attempts to regulate innovative warfare attempted at The Hague, none emerged on a strong footing. Far from prohibiting submarines, the 1899 conference confirmed their apparent legitimacy. Practical constraints imposed on aviation were superficial at best, though at least accompanied by an incomplete norm. Meanwhile, the gas shells prohibition stood as an oddity—a regulatory success without accompanying norm content in support or

[132] Quoted in Parks, 'Air War and the Law of War', 11.

as justification. Furthermore, the conferences themselves came to be represented by the failure of their disarmament agenda in the run up to war.

In all, what these examinations tell us about addressing innovative warfare in advance is relatively simple; establishment in advance is prone to failure, or at best, incomplete establishment. Anticipating the possibility and probability of moral transgressions is no simple matter, while the absence of that anticipation leaves little substance in support of a *raison d'être* for regulation. Even in the event that a *raison d'être* is identified, near-total ambiguity in terms of usable behavioural guidelines is unavoidable, as is a complete prohibition. As far as norm establishment is concerned, at least, a robust regulatory outcome is precluded by the uncertainty and scarcity of information. The ramifications of such incomplete and ambiguous outcomes are the subject of Chapter 3.

CHAPTER 3: ESTABLISHMENT IN ADVANCE MEETS REALITY IN WWI

The war to end all wars was the backdrop to the emergence of many forms of warfare. This war differed fundamentally from what had preceded it and encapsulated the numerous trends towards the nationalisation and industrialisation of conflict, all in one great and catastrophic brawl. WWI serves as a key test-case for the next important piece of the puzzle in exploring the regulation of innovative warfare: how do anticipatory norms fare when their innovations take to the field?

As I argued in Chapter 2, the probable outcome from attempted norm establishment in advance is norms exhibiting unavoidably weak specificity and concordance. They are essentially far from robust statements of 'oughtness' offering only incomplete and ambiguous expectations equating to weak behavioural guidelines. The immediate consequence is heavy reliance on states to construct and interpret the ramifications of innovative warfare *in media res*, with minimal or non-existent behavioural guidelines to parse the change that innovation inevitably brings. In these circumstances, states must resolve the ambiguous normative expectations surrounding equally uncertain innovations in warfare while under the pressures of war itself, in this case total war. Far from engaging in norm entrepreneurship to do this, states are prone to interpret matters subject to their own attitudes and interests. As these are almost certain to differ between states, especially between sides in open hostilities, divergent constructions are all but certain. The result, this chapter argues, is a probable outcome of non-restraint and questionable further norm development subject to the pressures of active hostilities—if not outright normalisation of the innovation.

Before continuing, there is an immediate point to consider when looking to WWI as a test-case; congruency. As I examined in Chapter 1, congruency or 'fit' with surrounding norms and behaviours constitutes a major element in norm establishment, diffusion, and influence. As I detailed in the previous chapter, attitudes surrounding disarmament and the regulation of warfare at The Hague were essentially incongruent with expansive ideas of restraint. They naturally carried into WWI and strongly influenced how states interpreted and constructed regulatory norms. Expectations of a strong restraining effect were inconsistent with the surrounding norms and varied commitments to the letter and spirit of codified international law in its infancy. That the war transformed from the commonly expected 'short, sharp' brawl reminiscent of 1870-71 into a protracted war of national attrition and 'total war,' with attitudinal shifts to match, only further diminished any prospect of total, or even partial, restraint in WWI. In essence, any regulatory norm faced a troublesome climate in WWI, let alone one which was incomplete or fragile. This is a consistent factor across the immediate examinations that follow, but bears mention in light of the wider puzzle that is regulatory norms in advance. Future cases will inhabit their own environments with congruency effects to match.

In terms of ambiguity, the limited norms addressing the three cases examined in this chapter provide good variety. The circumstances for submarines and aviation are similar despite their varied outcomes at The Hague. Both possessed some degree of understood 'oughtness' upon entering the war, whether explicitly stated at The Hague or not. For submarines, this was implicit from the surrounding and robust maritime norms which included strong protections for neutral and merchant vessels. For bombing, the explicit but lapsed and incomplete norm provided the beginnings of behavioural expectations with discrimination, proportionality, and the relevant bombardment concepts in limited support. The gas shells prohibition, on the

other hand, is a starkly different example. It entered the war with a narrowly intended and largely overlooked regulatory provision unsupported by matching norm content. Thus, as regulation almost without a norm, its prospects for constraining chemical warfare rested almost entirely on states' commitments to the principle of international law and willingness to embark on a wide interpretation of a largely unconsidered rule. Given the earlier point about congruency and surrounding attitudes its prospects were understandably poor. Thus, all three entered reliant on states to reconcile their content and its implications *in media res*.

The outcomes are well-known and come as no surprise. Unrestricted submarine warfare rapidly became one of the most divisive elements of the war. Aviation grew from baby steps to the beginnings of doctrine that included the routine bombardment of cities from the air. Chemical weapons evolved from entirely hypothetical to very real in short order despite the semblance of legal prohibition. Clearly the regulatory norms examined in the previous chapter were insufficient to forestall introduction entirely.

However, questions remain. What was their degree of influence in that process? How did states construct the absent normative content *in media res*? And what does this tell us about the probable fate of regulation in advance? I consider the three cases in the same order as throughout this dissertation: submarines, followed by aerial bombardment, and finally chemical warfare, before returning to the overall implications.

Submarines in WWI

Submarines entered the war with a relatively well-understood coastal defence niche alongside some limited uses against enemy warships. As I examined in the previous chapter, the firm rejection of any regulatory measures at The Hague in 1899 underscored the belief that the submarine posed no special legal or moral concerns. Hostilities soon revealed the flaws in that understanding in the face of a new scale of nationalised industrialised warfare and invoked implicit expectations from the surrounding maritime norms. Consequently, states were left to interpret submarine conduct *in media res* and to interpret and apply the relevant maritime norms with little by way of specific guidelines. The product of that reliance on interpretation and construction *in media res* is revealing—states ascribed very different meanings to the submarine resulting in two conflicting submarine norms emerging over the course of the war, split between the belligerents.

Germany initially stumbled into unrestricted submarine warfare (USW) in service to its core strategic imperatives and in line with its wider interpretations of international law. These interpretations were a highly adaptive departure from traditional understandings of international law and generally embraced all forms of innovative warfare, especially the unrestricted use of submarines. Central were the imperatives of economic warfare and the unacceptable tactical risks inherent in adhering to previous maritime norms. These drove the emergence of a submarine norm that abandoned well-established customs in favour of military necessity to accommodate the demands of submarine operations.

The Entente on the other hand, particularly Britain, held strongly to the established ideas of international and maritime law which Germany had rejected to accommodate the submarine.

Entente interpretations directly transferred previous understandings and expectations to the submarine, defining German submarine conduct as a gross violation of international law and increasingly shunning the submarine. German pleas of military necessity and the infeasible risks inherent in submarine visitation fell on deaf ears as Britain repeatedly prioritised pre-existing fully internalised norms which also suited them strategically and politically—particularly the right of resistance, flag ruse, and the defensive arming of merchants. Thus, by the end of the war there was a strong suggestion that the submarine should be forbidden entirely as its operation contravened those understandings.

The underlying lesson here relates to the importance of concordance between states not just on innovative warfare itself, but critically on the bodies of law and normative principles they extrapolate from to parse innovative warfare *in media res.* If states undertake this process with divergent ideas of international law, or even simply emphasising different principles within it, it can easily result in fundamentally contradictory norms and practices governing ostensibly the same behaviours. Resolving such a split during hostilities is essentially untenable.

For a deeper understanding of this outcome, two key aspects must be examined: the decision-making processes throughout the war, and the underlying divergence in international law guiding those processes. I begin with the German drift into USW, followed by Entente responses and an exploration of the divide between the two positions. I conclude the section with an examination of the two submarine norms that emerged *in media res*.

Before continuing, a brief exploration is necessary of the rules regarding merchants, neutral vessels, and 'cruiser' or 'prize' rules entering in the war. These rules reflected long-held traditional maritime norms governing the responsibilities and obligations surrounding

inspection by military vessels at sea, broadly upholding strong civilian protections and placing much of the burden on the military vessel. Accordingly, these rules provided the implicit normative content from which the belligerents derived their interpretations. The principles of customary law held that civilians should be immune to the effect of warfare, with neutral merchants falling firmly into this category. Merchants under an enemy flag remained non-military and were so afforded similar, though slightly lesser, protections. Prize rules underwent heated debate in the immediate lead-up to the war, meaning understandings of their content were quite specific.

Until 1869, no European state had permitted the sinking of neutral vessels regardless of conditions. This issue received greater and greater debate as the war drew near and the requirements of nationalised warfare increased, culminating in the Declaration of London in 1909. Article 48 stated that "a neutral vessel which has been captured may not be destroyed by the captor; she must be taken into such port as is proper for the determination there of all questions concerning the validity of the capture." Article 48 then offered "As an exception, a neutral vessel which has been captured by a belligerent war-ship, and which would be liable to condemnation, may be destroyed if the observance of Art. 48 would involve danger to the safety of the warship or the success of the operation in which she is engaged at the time." This was a notable compromise from the British who preferred no exceptions, and one that would come back to haunt them. Two further articles sought to hedge around this exception. Article 51 applied a condition of 'exceptional necessity' for any sinkings, with a further expectation of full compensation regardless of the legitimacy of the sinking. Article 50 also stated that "before the vessel is destroyed all persons on board must be placed in safety, and all ship's paper and other documents … must be taken on board the war-ship," clearly requiring visitation and provision for the crew.

Though the Declaration of London ended up on a doubtful footing as none ratified it, it serves as an effective guide to the common expectations surrounding merchants and neutrals immediately before the war. The sinking of merchants going about their business in open seas was a truly exceptional circumstance that needed similarly exceptional justifications. To go further and sink a vessel without visitation and to abandon its crew to their deaths fell entirely beyond the bounds of customary international law as commonly understood. With this in mind, I turn to the submarine itself.

German decision making and the drift into unrestricted submarine warfare

The first U-boat attacks against merchant vessels were the initiative of field commanders. In October and November 1914, two submarine commanders sank three merchants independent of each other and saved their crews. An unrelated order shortly followed from a Lieutenant Commander Bauer to the U-boats under his command, instructing them to travel to the Irish Sea and "by sinking one or more vessels introduce insecurity into shipping and harm trades."[133] This resulted in the successful sinking of a further four merchant ships. These early cases saw German U-boats observe 'prize' or 'cruiser' rules, which among other things required safe provision for the crew before destruction of their ship as a prize of war. The final element of drift came in mid-January 1915. The chief of the high seas fleet—also acting independently—ordered one of his U-boats to abandon cruiser rules and shadow the French

[133] Isabel V. Hull, *A Scrap of Paper: Breaking and Making International Law during the Great War*, 1st edition (Cornell University Press, 2014), 240 This section relies heavily on Hull's excellent examination of the legal decision making during the war, particularly her translations from original German primary sources.

coast in search of merchant vessels, leading to the sinking of three ships without warning.[134] The independence on display in this string of actions is not remarkable. German military doctrine allowed considerable discretion as far down as the junior officer ranks and expected a certain degree of initiative.[135] Whatever the framework, the submarine transitioned in short order from innocuous coastal defender to commerce hunter unburdened by previous rules.

Following the first few independent sinkings, the upper echelons of German leadership undertook thorough discussion of this development. The outcome was to formally abandon those portions of international law already *de facto* abandoned in practice. At a meeting on February 1st senior figures in the Admiralty, Foreign Office, Interior, and Chancellor Theobald von Bethmann Hollweg hastily made a case for unrestricted submarine warfare. Two days later and after no formal discussions the Kaiser approved, setting the course of formal USW into action. A declaration of a 'war zone' followed. This encompassed the entirety of the North Sea, inside which "every enemy merchant vessel encountered … will be destroyed, nor will it always be possible to avert the danger thereby threatened to the crew and passengers."[136]

Crucially, German decision makers had no qualms "of a legal nature" in deciding this course of action.[137] Despite clear opposition abroad they regarded the broader Hague codifications of international law as just another 'mere scrap of paper' the worth of which quickly evaporated once the war began. This belief was so strong within the German leadership that even Bethmann's limited apprehension over the international legal dimension was assumed political in nature and diminished by early success on the Eastern front. Tirpitz remarked in

[134] Hull, *A Scrap of Paper*, 240–41.
[135] See: Isabel V. Hull, *Absolute Destruction: Military Culture and the Practices of War in Imperial Germany*, 1st edition (Cornell University Press, 2006).
[136] The delcaration was published in the Imperial German Gazette on the 4th of Februrary 1915. E. B. Potter, *Sea Power: A Naval History, 2nd Edition* (Naval Institute Press, 2014), 223.
[137] Memo from Bethmann and Jagow to Pohl, Dec. 27, 1914. Translation quoted in Hull, *A Scrap of Paper*, 242.

late January 1915 that Bethmann "would not care about international legal qualms concerning submarine blockade, if he could only be assured that it would be effective, and that was essentially a naval-technical question."[138] In other words, his primary concern about the campaign was not its nature but that it did not harm Germany's overall standing.

To this end, Germany offered several general and specific justifications supporting USW, filling the norm content void as they saw fit. In addition to a low regard for international law and a sceptical view towards British good faith in that area stemming from the Copenhagen complex, the foremost general justification was reprisal for the expansive British blockade.[139] This attracted growing popular support within Germany, increasing in tandem with the effects of the blockade. USW became a panacea to the German populace creating a strong political incentive for its pursuit.

Germany also presented two more specific lines of argument underpinning their interpretations of the implicit behavioural expectations surrounding submarines. First, reflecting the concession in Article 48 of the Declaration of London, military necessity required the abandonment of cruiser rules as abiding by them constituted too great a risk for submarines. As relatively fragile vessels reliant on surprise for survival, surfacing constituted a major risk. Even an unarmed merchant ship could easily sink a submarine simply by ramming her—a right which the British emphasised vociferously.[140] The presence of any armaments only amplified this risk, as did the likely communication of the submarine's location which would surely bring submarine-hunters. Germany cited these factors alongside use of the flag

[138] Quoted in Hull, *A Scrap of Paper*, 242.
[139] The Copenhagen complex refers to the British destruction/seizure of the Dutch fleet during the Napoleonic wars while the Dutch were neutral to prevent a threat to British naval dominance. This greatly alarmed Germany at the time, created a fear of the same happening to a German fleet, and began a lasting belief that British commitments to international law were hollow. Steinberg, 'The Copenhagen Complex', 23–46.
[140] See: Hull, *A Scrap of Paper*, 249–51.

ruse and British steps to arm their merchants as inducing such extraordinary risk that submarines could not follow cruiser rules, or rather that they should not be arbitrarily applied to the submarine without consideration.

Second, Germany rejected many further British and neutral positions outright. British distinctions between offensive and defensive weapons or arguments to intent were irrelevant, Germany argued, as arming a merchant made it a warship. The resulting view was that "English merchant vessels in the designated waters are therefore no longer to be regarded as undefended, and so may be attacked by the Germans without previous warning or visit."[141] Similarly, resistance (i.e. ramming or running) they argued "is contrary to international law" and gave "warships the right to send the merchant ship to the bottom with crew and passengers."[142] Moreover, from the German perspective, neutral acquiescence to the British blockade under claims of a 'vital interest' in turn opened neutral vessels to attack under the same principle, as in the German view they had committed an un-neutral act.

The cumulative position to emerge was that Germany saw USW as entirely legally justifiable by extrapolating from existing principles as they interpreted them. Actions by the British, neutrals, and merchant crews all legitimated sinkings without visitation, warning, or provision for crews—especially considering the clear military necessity of economic warfare—even if those actions were in keeping with earlier maritime norms as applied to other cases.

It is worth noting that German arguments had considerable substance. The arming of merchants was widely expected and planned for prior to the war. The British believed Germany was "arming their merchant ships, nominally for the protection of their own trade,

[141] ibid
[142] Quoted in Hull, *A Scrap of Paper*, 242.

but more probably in order to attack ours," so rushed to do the same.[143] By December 1915 over 700 merchants were armed. This was noted in the abstract, and had only limited bearing on the German position which was set well before any armed merchants ever encountered a U-boat.[144] Furthermore, under Admiralty orders British merchants used the flag ruse to avoid visitation and offered resistance under orders to ram submarines that attempted visitation. The risks that so concerned Germany were very real and even possibly sufficient to constitute the manner of 'exceptional' circumstances included in the Declaration of London.

However, though substantive in many ways, German justifications and framings as reprisal were also primarily a politically palatable cover for the embrace of USW as policy, not the product of a reluctant shift. For example, great attention was given to the legal framing of the campaign. Two earlier incidents made the legal and political stakes abundantly clear. Submarine attacks against a hospital ship (the *Asturias*, fatefully saved by a defective torpedo) and a Belgian refugee ship mistaken for a troopship (the *Amiral Ganteaume*) drew sharp international criticism. The key decision-makers understood that submarines, by their nature, could offer no guarantees when it came to avoiding similar incidents in the future. Rather, they considered them inevitable and dictated the choice of a 'war zone' as a framing tool over a blockade to diminish their impact. A war zone, it was argued, freed Germany from a range of constraints surrounding neutrals. Pohl argued that this was necessary "because we cannot

[143] Quoted in Matthew S. Seligmann, *The Royal Navy and the German Threat 1901-1914: Admiralty Plans to Protect British Trade in a War Against Germany* (Oxford University Press, 2012), 135.

[144] For all of the consternation they caused, armed merchants rarely sank any submarines during WWI. However, sinking submarines was not the chief aim for arming merchants. The presence of armaments forced submarines to dive allowing merchants to escape. Submarines of the time had very limited movement and endurance underwater, meaning they could not pursue effectively while submerged. Of the 19 surface encounters with armed merchants there were 15 escapes and three sinkings. British Q-ships were much more in line with German concerns. These were *ruses de guerre* - submarine hunters disguised as merchants. Immediately following their introduction in 1915 they quickly sank six U-boats while the ruse was fresh, but that soon ceased. Throughout the rest of the war, and despite the deployment of around 200 Q-boats, only eight more U-boats fell victim.

fulfil the formalities that are generally recognised as necessary for a blockade to meet international law" and later offered that "a blockade would force us to follow exactly the recognized international-legal principles that appear in our own Prize Manual as binding, without giving us the right to sink blockade breakers whose crews have not been warned or saved. Blockade would thus burden us with duties we cannot fulfil without giving us greater rights."[145] This won over Bethmann and Tirpitz, who expressed some concern over neutral opinion, but were also eager to unleash the submarine. Thus, discussions of international law concerned framing, not appropriateness, and functioned as a tool more than a meaningful constraint.

Overall, the threat to merchant and neutral shipping was, of course, the direct intention of the U-boat war zone, and the framings and justifications surrounding the submarine were a means to that end. Germany sought to fill the void of submarine content as suited their interests, and according to their perspectives on international law and the fundamental rights of belligerents. By doing so, Germany sought to leverage the fear generated by the submarine as a perpetual and unseen menace to deter merchant traffic and achieve a blockade by other means. Some exemplar sinkings of neutrals and merchants were simply the price to pay for a reciprocal blockade of the British Isles. The first general orders enacting the war zone made this clear offering no distinction between neutral and enemy ships—any vessel was a legitimate target. A sharply negative political reaction from all corners saw these orders swiftly amended, but Germany maintained publicly that they would not compensate for

[145] Pohl, quoted in Hull, *A Scrap of Paper*, 221–22.

neutral losses as it would "significantly reduce the deterrent effect" of the strategy "whose goal is to scare neutral shipping away from Britain's coast."[146]

Commitment to the strategy deepened as the war progressed, excepting a brief respite in response to American diplomatic pressure, to which I will return shortly. A second German declaration specifically justified sinking without warning or inspection—both conditions expressly required under cruiser rules—despite the clear recognition of the practical certainty of sinking neutral shipping. This conduct was accepted and even embraced as the campaign gathered steam. Subsequent orders dispatched to the submarine fleet on February 12, 1915 specifically called for the sinking of merchant and passenger ships as "their loss will make the biggest impression of all."[147] Though the orders did exclude neutral merchant ships (notably over the Navy's objections), they also prioritised the safety of the submarine in the face of risks to such fragile vessels from even unarmed merchants, notably in keeping with the spirit of the terms of Article 48 of the Declaration of London which permitted sinking in the presence of serious risk to the military vessel. Collectively, this quickly gave rise to a propensity when in any doubt to sink first and identify later, with the full support of German command.

Entente and neutral responses

The Entente immediately and loudly rejected German assertions, and did so in direct appeal to international law as they interpreted it. Despite German protests, the flag ruse, arming of

[146] Ibid.
[147] Hull, *A Scrap of Paper*, 244.

merchants and the general right to resistance were all well-established law, even exceptionally well-established in the case of customary prize rules devised over centuries of conflict. The flag ruse was so well-vested in practice that it was considered a mechanism for ensuring adherence to international law by forcing visit and inspection before hostile action. The right of resistance, which included attempts to evade and ram, was similarly well-established on the condition that it be used solely in reaction to hostility. In fact, this proviso had been discussed and found support as recently as 1913 from the Oxford Institute of International Law, who found that "visitation, though legal, is a hostile act that … may be countered with armed resistance."[148] Broadly this paralleled the right of citizens in unoccupied territory to resist an invader—incidentally another area of international law contentious from the German perspective.[149] In the same vein, the British considered the defensive arming of merchants to be an old tradition steeped in customary law and well within their rights.

Specific points aside, the Entente viewed the war generally as an extension of international law beginning with the German violation of Belgian neutrality—while supposedly a guarantor of that neutrality alongside Britain—and heightened by extreme German behaviours such as 'the rape of Belgium'. The notion of Germany as a criminal state altogether disregarding the bounds of international law impelled Britain to enter the war in the first place, and well before the submarine entered the fray. From this perspective, German submarine *guerre de course* was interpreted simply and easily as another dimension of views already held and reinforced by German conduct in other arenas.

[148] Dietrich Schindler and Jiří Toman, *The Laws of Armed Conflicts: A Collection of Conventions, Resolutions, and Other Documents* (BRILL, 1988), 857.
[149] James Wilford Garner, *International Law and the World War* (Longmans, Green & Co., 1920), 411.

The Entente filled the normative void by directly applying previous understandings with little or no consideration accommodating the change wrought by the innovative submarine or minimising the risks involved in visitation, which might have enabled the maintenance of cruiser rules. Instead, mitigating submarine attacks against essential merchant and neutral shipping suited their interests and legal perspective, and they doggedly asserted earlier norms. Over time, this grew from an objection to submarine conduct to an objection to the submarine entirely as it became known as the 'viper of the sea.' Thus, two almost diametrically opposed norms of submarine warfare emerged from interpretations *in media res*.

The consequent back and forth between the belligerents unsurprisingly provoked little movement from either side. Having made the initial decision on the form and conduct of the submarine campaign the legal aspects ceased to matter to German decision makers, while they were almost all that mattered to the Entente, with neither inclined to budge. Each emphasised their own preferred extrapolation from existing principles. Germany firmly believed itself justified by military necessity stemming from the risk to submarines in adhering to cruiser rules, and further secure in the war zone framing as a fundamental right of a belligerent. The Entente meanwhile clung to previous maritime law and made no effort to seriously accommodate the nature of submarine operation or to address the inherent risks. That the blockade directly and implicitly supported the legitimacy of economic warfare made little difference. Regardless of any German arguments towards the legitimacy of USW, it remained extremely unlikely that the Entente would concede to German legality on any point, as the premise of German illegality anchored their entire position and *casus belli*. Doing so would threaten that premise directly and carried major political and propaganda consequences the Entente simply could not entertain. Germany was no more inclined to

concede on any point lest they offer a tacit or direct acknowledgement of their own illegality, or of having acted dishonourably.

A fundamental divide

The contrast between the above detailed processes highlights how states can ascribe different, even directly contradictory, meanings to innovative warfare. British views, shaped heavily by the mix of strategic interest and firm commitments to deeply embedded maritime norms led to a hostile reception for the submarine. Whereas German views, shaped by their own strategic interest and noted scepticism surrounding the earnestness of British commitment to maritime norms, to say nothing of international law, extrapolated entirely different ideas of the submarine in practice, and constructed the ambiguity surrounding its normative obligations very differently.

Furthermore, and especially interesting for present purposes, this split also revealed a fundamental divergence in the belligerents' conceptions of international law beyond the divergence in direct extrapolations. The Entente and neutrals maintained a view generally in line with the conventional understandings prior to the war, including the text of The Hague conventions and their underlying principles, while Germany extrapolated from a markedly different set of understandings.[150]

[150] It should be noted that these statements are in necessarily general terms, and that a nation rarely if ever has a singular position on a nuanced matter of international law. For the sake of brevity, I hold to these general terms which reveal the discrepancy between states without getting lost in the full intricacies of each state's positions and rationales.

German legal theories departed from the conventions of international law to such an extent that they often directly contradicted established precedent and rejected underlying concepts of 'principles of humanity' as embedded in international law. In particular, they disregarded the idea that civilians in undefended areas should be immune to direct attack as, in Germany's view, the "modern conception of the legal norm of war as an armed conflict between states" was so substantially different that it rendered previous expectations of immunity obsolete.[151] This justified among other things a shift in the locus of rights, from the personal to the state, wherein an inherent right of the state to use a weapon in pursuit of its prerogatives superseded the right of the individual (neutral or otherwise) to self-defence. Given this substantial departure from accepted principles, Germany argued that anything not expressly forbidden was, by default, permitted—a direct rejection of the Martens clause. Thus, submarines along with innovative warfare existed in a state of *non liquet,* or no applicable law. In Tirpitz's words, "submarine warfare is something completely new and thus outside of old international law; it is the same thing with aerial attacks."[152] To fill this void German theorists advanced a position which Hull dubs 'weapons positivism'. They "rejected moral considerations as outside the purview of law", arguing that states wielded weapons in their own name and right, and viewed state actors as the only legitimate actors in international law.[153] In addition they argued that the legal use of a weapon derived from its properties in isolation, such that rules established for other weapons should not be simply transferred to superficially similar innovations. Rules should derive from use, with whoever used a new weapon first effectively defining its legal parameters. In turn, a belief in the necessarily

[151] Schramm, a German legal theorist and Admiralty privy councillor in the German Naval Ministry. Quoted in Hull, *A Scrap of Paper*, 247.
[152] Quoted in Hull, *A Scrap of Paper*, 267.
[153] Hull, *A Scrap of Paper*, 268.

unlimited nature of war—in the sense that sharp, short, wars were preferable—meant that restraint was to be avoided, not sought.

The cornerstone of these rejections of traditional international law for German legal theorists came from ideas of Germany as a "monadic, sovereign lawgiver to the world," for vindication through victory.[154] In essence, might makes right. The general conviction within the German military and political leadership was that this new 'legal-science' approach, with its rejection of external moralities, represented the very exemplar of progress. Thus previous forms were backward conceptions to be brushed aside as they entered a new, scientific, century. Some within the legal community argued that those nations which had rejected the German doctrine even disqualified themselves from the re-establishment of international law after the war through their insistence on the "soap bubbles" of The Hague conventions.

Instead, the greatest limitation on the German USW policy came not from international law, principle, or norm, but from the diplomatic and strategic consequences that so concerned Bethmann. Repeated diplomatic fracases following the sinking of the *Lusitania, Arabic,* and *Sussex* succeeded in tempering USW where law failed. Fearing further sanctions, Bethmann was a constant voice of restraint inside German leadership, especially when it concerned Italy and the US. At times of crisis he prevailed over the Navy and wider German leadership to secure exceptions to the USW campaign for some neutrals at first, then all neutral shipping. Finally, seizing on the row over the sinking of the *Lusitania*, Bethmann convinced the Kaiser and civilian leadership to accept an American compromise—adherence to cruiser rules. This effectively re-legitimised the submarine internationally as a new weapon with the proviso that it should follow some of the old rules. Though so-ordered in May 1916, the Navy's

[154] Hull, *A Scrap of Paper*, 271.

reluctance saw adherence delayed until October while it continued the push for fully unrestricted submarine warfare. By this point the Navy's internal attitudes towards the submarine were firmly fixed and tantamount to a point of honour.

This demonstrates an important point central to the regulation of innovative warfare in advance: concordance must run far deeper than just the innovation itself. With fundamental divergence in understandings, and even the core principles of international law, states were in no position to arrive at compatible positions on the submarine or the appropriate bounds for its use. If establishment in advance inescapably relies on that process, shared principles guiding it and framing it are essential. These, clearly, cannot be assumed when contemplating innovative warfare. Even a relatively minor divergence in existing bounds—such as between provisions 48 and 50 of the Declaration of London—can unspool into an essential divide spanning the width and breadth of international law.

The short-lived cruiser rules compromise secured by way of American diplomatic pressure is also worthy of further attention in demonstrating even further variance in constructions of the submarine from an ostensibly neutral actor, without the immediate pressures of war. While briefly absent those pressures, the American position showed far greater movement than those of the Entente, neutrals, or Germany, further reflecting the extent to which the impetus of hostilities can shape norm construction *in media res*.

Early in the war, then Secretary of State Robert Lansing and President Wilson discussed revising the US position on armed merchants to consider them warships, in line with German arguments, resolving one of the core factors forcing sinkings without warning. Lansing argued in early 1916 that "the rule of visit … could hardly be required justly of a submarine, if the observation of the rule compels the submarine to expose itself to almost certain destruction

by coming to the surface." Wilson responded that it was a "reasonable [position], and thoroughly worth trying."[155] While the Entente seized on legal framings that suited them, with the benefit of some detachment American positions recognised the perilous nature of the old rules for the new weapon, and the unreasonableness of their insistence. The US also went further than the Entente in proposing the cruiser rule compromise in the first place, seeking to accommodate the submarine as a legitimate weapon by narrowing the complaint to its use against merchants and neutral vessels. American interests at the time were to stay out of the war and to preserve the rights of her neutral vessels. Thus, Wilson and Lansing's fleeting interpretations of the submarine reflected compromise rather than condemnation or dogged assertions of legitimacy. This was short-lived, however, with an officially stated position only a couple of months later reaffirming the rights to defensive armaments, self-defence—even some cases of pre-emptive self-defence—and further narrowing the range of circumstances permitting attacks against merchants.

Nevertheless, even this compromise was violated by a reluctant German navy, resulting in the loss of the *Sussex* in March 1916 and convincing Lansing that "the German naval policy is one of wanton and indiscriminate destruction of vessels regardless of nationality." Another shift in the American stance resulted, driving Wilson and Lansing to communicate to Germany that the submarine was "utterly incompatible with the principles of humanity, the long-established and incontrovertible rights of neutrals, and the sacred immunities of non-combatants."[156] Wilson shifted the US position once more from tacit acceptance to arguing that the submarine was qualitatively distinct from other weapons and immoral by its very

[155] United States Department of State, 'Papers Relating to the Foreign Relations of the United States. The Lansing Papers, 1914-1920', 331.
[156] United States Department of State, 'Papers Relating to the Foreign Relations of the United States, 1916. Supplement, The World War', 1916, 232–34.

nature, closely in line with the abiding position of the Entente. This became the foundation of a commitment to absolute 'freedom-of-the-seas' guiding the US's eventual entrance to the war, and its negotiating position thereafter.

The movement in the American position points to a split in the Entente's position with general attitudes towards restraint, as frequently expressed at The Hague, and to their conduct in other areas of the war. As Lansing accurately noted, visitation presented immense and unacceptable risks to the military vessel. Under such circumstances in every other theatre of the war, and importantly in the context of the Declaration of London, military utility trumped civilian immunity more often than not. Furthermore, the British predicated their blockade on the acceptance of inevitable non-combatant casualties in immense numbers provided there was sufficient military purpose, supported in turn by the necessity of economic warfare. If the blockade of Germany was sufficient military purpose to justify that, then surely something approximating the reverse was also true given the total attrition war under way. A small number of civilian and neutral crews directly participating in an act that favoured a belligerent were a much shorter straw to draw than the starvation of the entire German population under blockade.

Two submarine norms emerging in media res

From divergent understandings of international law emphasising different principles, and with directly contradictory strategic incentives, states parsed the submarine *in media res* in very different ways to effectively create two competing standards of behaviour—one inherently and entirely rejecting the submarine, the other fiercely defending its legitimacy

and the unreasonable demands of merchant immunity in nationalised economic warfare, and both excoriating their adversary. Practice and the normative content surrounding each grew to establish two competing norms, each with ample specific content and strong support domestically which deepened as the war progressed.

For the Entente, particularly the British and the US, the submarine acquired a strong stigma. Conducting maritime combat in this way struck the British populace as the action of a morally and physically weaker power, and had tremendous shock value when it came from a fellow European, 'civilised' power.[157] Reactions to Conan Doyle's short story in *The Strand* and Admiral Fisher's memos illustrate the extent of this view pre-war.[158] The scale of the normative transgressions involved led to those predictions being dismissed as absurd. Churchill remarked that "it was abhorrent to the immemorial law and practice of the sea," and wrote directly to Fisher saying that "I do not believe this would ever be done by a civilised power."[159] Seeing USW suddenly in practice naturally evoked stronger and more profound objections than did the fiction. These rapidly transitioned into wider stigmatisation, laden with strong negative and emotional imagery. Extremely frequent references to 'inhumanity', 'barbarity', 'barbarism', and 'callous indifference'—to name a few—littered papers and public discourse. Churchill directly likened the practice of abandoning crews to the behaviour of pirates.[160] The official history of the war at sea would later describe the submarine campaign

[157] Redford, *The Submarine*, 16.
[158] Fisher predicted that diesel engines enabled the offensive power of the submarine with blockade and attacks against merchants the logical result. He also anticipated that prize/cruiser rules were unworkable in this context. Conan Doyle's short story, published in 1914, depicted a Royal Navy made impotent by just 8 enemy submarines whose attacks on commerce forced a British surrender to avoid starvation. Conan Doyle's story also featured submariners attacking passenger vessels without warning with justifications similar to those offered during the war. Both were roundly dismissed by expert opinion due to the extraordinary nature of the behaviour they predicted.
[159] Winston Churchill, *The World Crisis: 1915*, 5 vols (Thornton Butterworth, 1923), II, 720.
[160] Churchill, *The World Crisis: 1915*, II, 1111.

to be "repugnant alike to the spirit of humanity and international law."[161] US views and press coverage grew to match this to a large extent by the end of the war, informed by Wilson's remarks and Zimmerman's telegram describing the "ruthless employment of our submarines" in the Atlantic against US shipping spurring further revulsion, ultimately driving Wilson to push for the arming of US merchants, a reversal of his earlier positions.

Germany, meanwhile, arrived at the inverse position where the submarine and its use against merchants was practically a point of national pride. Developments elsewhere had seemingly little impact within Germany. An unshaken belief in the merit of USW and the mounting costs of the British blockade brought matters to breaking point during the Turnip Winter. The temporary abandonment of USW had taken on an additional emotional aspect for German commanders. In ceasing the campaign, they implicitly conceded its dishonour. The resumption of full USW became an imperative for national and military pride, supported by a growing belief in USW-as-panacea, the urge for blockade reprisal, and transformative notions of international law. When it became clear that military victory before starvation was no longer possible, Bethmann acquiesced to pressure from Hindenburg and Ludendorff and unleashed the submarine once more in February 1917—a decision that stood till war's end. That it was strategic consequences not moral ones which briefly restrained the submarine is no small detail. These views would only deepen following the war, as I explore in the next chapter. Moreover, the strength of those Entente positions rested heavily on their commitments to the earlier maritime norms which they had played a major role in creating. Germany had not strongly internalised those norms. Not only was she a relative newcomer, but events in Copenhagen more than a century earlier had cast a long shadow. Germany saw

[161] Quoted in Redford, *The Submarine*, 106.

those norms and British commitments to them as fundamentally hollow and self-serving. Thus, British and Entente objections to submarine warfare which coincidentally served their own interests, and did so at the expense of German rights as a belligerent, acted as confirmation of earlier suspicions.

In sum, the central conclusion in terms of the regulation of innovative warfare is to emphasise the essential nature of fundamental concordance from which states must parse new developments, and to illustrate the manner in which states are prone to ascribe even directly contradictory meanings to innovative warfare subject to their own perspectives and interests. A reliance on states to resolve norm content *in media res* includes a reliance on them to approach this task in complimentary ways. Without a shared set of principles and wider expectations on which to draw, the door is open to radically different versions of content and contradictory extrapolations from existing principle. Under a condition of active hostilities, divergent understandings in service to perspective and self-interest are apparently guaranteed. Furthermore, as the course of submarines in WWI illustrates, once hostilities begin the chances of resolving a fundamental split diminish rapidly.

Aerial bombardment in WWI

Bombing, much like aviation in general, experienced a staggered start in WWI. Though The Hague conferences demonstrated some degree of concordance surrounding the outlines of a norm, its 'consciously ineffectual' content sorely lacked specific behavioural guidelines. Similarly, hopes that the relevant standards for land and naval bombardment contained in Article 25 and Convention IX could govern aerial bombardment offered little practical help.

Like submarines, states were left to resolve the bounds of appropriate conduct *in media res*. Unlike submarines, there was little benefit to be had from meaningful guidelines as bombardment norms were far less transferable than maritime norms. Nevertheless, the process was much the same in that states filled the content to suit themselves, only in the case of aviation arriving at the same conclusion—the practical normalisation of city bombing.

Feeding into this were three major factors. First, the supporting legal frameworks addressing land bombardment served not as constraints but as frameworks enabling the expansion of functionally indiscriminate bombing. Second, profound technical limitations hampered achievable accuracy, which curtailed any expectations around precision. Third, early theories of bombing increasingly emphasised the importance of morale effects, largely in light of the dismal accuracy available, which shifted the emphasis of the bombing campaigns towards targeting civilians. Ultimately states constructed the incomplete norm in such a way as to maintain its outlines, while filling its content with 'nothing.' In other words, they filled its content with exceptions that enabled strategic and bombing targeted at civilian morale which equated to the type of behaviour the norm ostensibly opposed.

A deeper understanding of this outcome requires detailed examination of two areas: first, the role of the supporting legal frameworks when transferred to the aerial context, and second, the process by which states filled the norm's content in practice. I consider each in turn, focussing primarily on the western front for the sake of expedience. Matters elsewhere followed a similar pattern whilst also facing greater geographic barriers (the Alps in the south, distance in the east) which reduced the scale and frequency of aerial attacks, and the extent

to which states engaged with the ramifications of strategic bombing. But the outcomes were very similar.[162]

Vague legal frameworks for bombardment

As examined in the previous chapter, the fledgling bombing norm entered WWI fundamentally incomplete. No distinctions, definitions, or guidelines expanded on it or charted the bounds of aerial bombardment beyond the tactical sphere. States entered the war with only the provisions of Convention IX and the revisions to Article 25 to provide a detailed legal basis for governing aerial bombardment. It was on these provisions that much of the responsibility rested in lieu of specific content, and the war quickly stretched both far beyond their limits, soon seeing them practically abandoned—except, of course, as a tool in condemning the attacks of one's opponent.[163] While the submarine entered the war in the midst of a relatively well-understood field of maritime norms, ostensibly narrowing the scope of acceptable behaviour from the outset, then was caught between two previously coherent sets of expectations, the legal frameworks governing bombardment effectively achieved the reverse. Those frameworks contained two major weaknesses.

[162] Those these limits made little difference to the outcome. Routine and functionally indiscriminate attacks against cities were common between Italy and Austria-Hungry by the end of the war.

[163] Even in the context of post war recriminations their limits were recognised. Calls for war crimes trials were widely discouraged on the basis that all sides disregarded the rules and for fear of opening the door for reciprocal trials. The RAF dismissed the prospect of trials for German personnel, stating that: "The present situation makes it necessary to emphasise the peculiar reverberation of such contemplated prosecutions upon the RAF. These German officers and men are to be tried in time of peace before a court exclusively composed of their ex-enemies for acts which do not differ from those ordered to be carried out by the Royal Air Force upon German towns …" Wilhelm Deist, *The German Military in the Age of Total War* (Berg Pub Limited, 1985), 211.

First, wide misunderstandings and/or misapplications of the sole provisions directly limiting attacks against towns beyond artillery range instead expanded their permissible scope. Article 25 delineated between 'defended' and 'undefended' to define legitimate and illegitimate targets for bombardment. However, far from its intended purpose of rendering towns immune to attack when beyond the front, the presence of trench lines spanning the continent meant 'defended' was ripe for broad re-interpretation. A British General Staff memorandum argued, for example, that "with trench lines stretching from Switzerland to the sea, in some sense every German town was defended."[164] Some went still further stating that national borders alone were sufficient to qualify as defence during a state of nationalised war. Thus, instead of narrowing the scope for attacks against cities, 'defended' status opened all towns to attack even far beyond the immediate war zone.

Second was the erosion of the once clear distinction between combatant and non-combatant. Changes in the nature of warfare over the previous century had already blurred this distinction, and it became even less distinct as the scope of bombardment expanded under the pressures of nationalised, industrialised, and economic warfare. When the time came to parse civilian casualties within the context of aerial bombardment—particularly those directly linked to the war effort in an industrial capacity—shifts in surrounding norms and growing acknowledgement of the necessity of economic warfare made these far easier to excuse. Support from Article 2 of Convention IX offered further support codifying exceptions for 'unavoidable' civilian casualties in pursuit of military objectives.

[164] Donald Cameron Watt, 'Restraints on the War in the Air before 1945', in *Restraints on War: Studies in the Limitation of Armed Conflict*, ed. by Michael Howard (Oxford University Press, 1979), 63.

The absence of specific guidelines regarding bombardment far beyond the front empowered states to make it up as they went along. The desire and need to attack military-industrial objectives on the home front was, therefore, accommodated by the existing frameworks which accepted collateral injury provided it was incidental to an attack on a military objective. The result was a growing "doctrine of the military objective, that is, the bombardment of any object related with sufficient directness to military options wherever found."[165] Arguments of this nature also shifted much—if not all—of the responsibility for civilians onto the defender in a manner similar to naval blockade. Collateral harm was simply an inevitable and lawful consequence of legitimate actions against military targets and, as the defender had far greater capability to prevent civilian harm than the attacker, it was further suggested that the responsibility lay there instead.

Furthermore, the long-foretold morale effects contributed extensively by making civilians themselves a form of military objective. In practical terms, bombing had a negligible direct effect on the course or outcome of WWI. Compared to the millions of lives lost in the trenches or under the shadow of the blockade, bombing accounted for only 1,413 killed and 3,407 injured.[166] Thus the hope of disproportionate morale effects became bombing's primary function for much of the war. If the war was a contest between nations and economies feeding soldiers and materiel into a meat grinder, whichever nation stumbled first might lose entirely. Even a momentary disruption to the war effort threatened collapse. Thus, aerial attack against cities—especially capitals—for morale and psychological effect had a potent political and symbolic allure. Air advocates hoped to undermine the will and capacity to resist

[165] Paul Whitcomb Williams, 'Legitimate Targets in Aerial Bombardment', *The American Journal of International Law*, 23:3 (1929), 573.
[166] Legro, *Cooperation under Fire (Kindle Edition)*, 46.

through the spectre of bombardment. Hugh Trenchard, commander of the Royal Flying Corps and later the Royal Air Force, believed such attacks to be so disproportionately effective that "the morale effect of bombing stands undoubtedly to the material effect in a proportion of 20 to 1."[167] Though it seems he concocted these figures out of thin air, it illustrates understandings of bombing and attitudes towards its pursuit. Against the backdrop of the wider war, a few inevitable and unavoidable civilian casualties were a small and easily justifiable price to pay against hopes for a potentially decisive strategic effect.

Overall, instead of offering constraining behavioural guidelines, Article 25 combined with Article 2 of Convention IX to considerably expand the potential legal scope for injury to non-combatants. Supposing the presence of some military purpose for the bombardment, which states had no trouble finding, almost any bombardment was legitimate. Clearly, the legal frameworks were stretched well beyond their limits by the addition of a new domain with equally novel implications. Thus, in addition to the incomplete state of the bombing norm, states were left with ambiguity surrounding legal frameworks as well.

Detailing the bombing norm with practice

Considering the particularly loose terms of the applicable supporting legal frameworks, states had to effectively parse the entirety of their conduct in the air as they went. The tone of the wider war, much like the ideas that informed both it and The Hague deliberations, was far from conducive to narrow interpretations of ambiguous norm content. Accordingly, in

[167] Tami Davis Biddle, 'Chapter 9: Air Power', in *The Laws of War: Constraints on Warfare in the Western World*, ed. by Michael Howard, George J Andreopopulos, and Mark R Shulman (Yale University Press, 1994), 144.

interpreting it states paid almost no heed to legal content or normative suggestions of restraint. As Parks succinctly notes, "it is obvious that law of war considerations received little (if any) attention"[168] Instead, they embarked on a process by which they filled the norm's missing content through practice subject to two dynamics; technical limitations contributing to dismal accuracy, and a growing emphasis on morale effects. There were therefore no practical restrictions or concerns over the functionally indiscriminate nature of the resulting bombing.

Early aviation filled reconnaissance and tactical roles almost exclusively. Following that trend, the earliest bombing strikes fell well within the conventional war zone, first against forts near Liege in August 1914 by Zeppelin, then around a railway station in Paris when a single unopposed monoplane dropped five small bombs killing one and marking the first aerial bombardment of a city during the war. Despite this, the bombing of Paris passed without much notice as it occurred on the eve of the Battle of the Marne, and pointedly included a note from the pilot urging surrender as 'the German army is at the gates of Paris' emphasising that Paris was within the war zone.[169] Moreover, many Parisians had had first-hand experience of siege only a few decades earlier during the Franco-Prussian war of 1870-71. Given this experience and the fact that the city was ringed by trenches, none questioned the legality of the strikes. In fact, the minor damage to Notre Dame raised the greatest ire.

Before long, however, the desire took hold to strike further afield and against the respective home fronts. September, October, November, and December of 1914 saw matters spread as

[168] Parks, 'Air War and the Law of War', 21.

[169] Conventional understandings held that anything within artillery range was fair game. The so-called Paris gun later in the war illustrates the scope of this belief. It was an artillery piece with a range of approximately 160 kilometres and city wide accuracy at best. However, as the gun fired from German lines its ongoing bombardment of Paris 20-30 times a day was entirely permissible. What difference did it make, after all, if the shell came from an aircraft or a cannon?

The Entente began its contribution to the scattered beginnings of aerial bombardment with little apparent thought to any legal dimensions. Britain's Royal Naval Air Service (RNAS), charged with protecting approaches to the British Isles including by air, undertook strikes against the massive and vulnerable Zeppelin sheds in Germany at Churchill's urging. French pilots joined the fray in December by attacking Freiburg quite some distance behind German lines. Their supposed target was the railway station in the hope of disrupting transportation, but they missed and killed several civilians instead. Where the British action was viewed as only a 'serious provocation,' in the words of General Hoeppner who led Germany's air service for the latter half of the war, the French strike was the "first to introduce the horrors of the air war to a peaceable community."[170] Nevertheless, as the strike was minor, isolated, and ostensibly directed at a military target, it otherwise made little impression.

Next came the first strategic bombing campaign, as opposed to scattered attacks, from Germany. The benefits of a pre-war construction program unmatched internationally saw many in German military leadership embrace the Zeppelin and hold great hopes for it. In the words of Von Moltke, it "far surpasses anything our enemies have and which they will not be able to rival in the foreseeable future."[171] He and others had backed the development of the airship extensively pre-war as the Zeppelin offered what fixed-wing aircraft of the time did not; sufficient range and payload to strike with effect at great distance beyond the immediate front, in other words, strategic bombing potential. Von Moltke, Hindenburg, Tirpitz, and Behncke expressed their conviction on the 'extraordinary' potential of the Zeppelin.[172] This reflects a measure of path dependency in that the decision towards strategic bombing was

[170] Hoeppner, quoted in Lee Kennett, *A History of Strategic Bombing* (Scribner, 1982), 22.
[171] Letter from October 24, 1912. Quoted in Kennett, *A History of Strategic Bombing*, 22.
[172] Ibid.

already largely made well before the war, with the completed Zeppelin fleet providing strong temptation for the German leadership in the face of stalemate. To pass up such an advantage and to refuse to use it where it was most effective was simply not an option. With the technological head start and the imperatives of war, Germany was the first to enter the strategic domain in a considered manner.

In contemplating the expansion of strategic bombing, the Kaiser initially briefly hesitated to go beyond the earlier raids on Paris after they drew some quiet international condemnation from Woodrow Wilson, who warned that the attacks 'tarnished' Germany's image despite their clear legality. This gave Bethmann sufficient ammunition to caution over diplomatic consequences for bombing too far afield, much as he did in other spheres of the war. Two further attacks against Freiburg undid this fleeting restraint by giving the cadre of Zeppelin bombing advocates their chance. With the Kaiser's acquiescence, the first strategic campaign began in the form of Zeppelin raids along the English coast.

German ideas guiding that operation held that bombing operations should be restricted to strictly military areas, but their definition of a military area was carefully crafted to include cities like London and Brighton, but exclude towns like Karlsruhe (despite gas factories being located there) and Stuttgart.[173] Even then, the raids initially excluded London in response to Bethmann's concerns but London too joined the target list before long, though with orders to avoid attacks on residential areas and palaces. By May it was everything east of the Tower of London. Then, following an attack on Karlsruhe in July which badly damaged the ducal palace, all remaining constraints were removed. Orders to Zeppelin crews were to direct their

[173] Williams, 'Legitimate Targets in Aerial Bombardment', 573. See also; James Molony Spaight, *Air Power and War Rights*, 2nd edn (Longmans, Green & Co., 1933), 12, 18, 21.

attacks towards legitimate military targets in London and other British cities with no other considerations. Thus, the first act in parsing the strategic bombing norm was to legitimise open targeting within cities largely unhindered by suggestions of restraint so long as a 'military objective' was the target. Given Germany's attitudes of 'weapons primacy' and expansive interpretations of military necessity that were consistent with existing legal frameworks, along with the scope of the war already underway and long-held Napoleonic dictates on the bombardment of capitals, this seemingly effortless decision set the tone for bombing to come.

Whatever the targeting instructions, they made little practical difference. The profound technical limits of early aviation ensured that aerial raids were indiscriminate in practice whatever the intent. Though the intended targets were directly military, there was little chance of actually striking them. A German study on bombardment accuracy for all aircraft in 1915 was forced to conclude that just two bombs in every hundred hit even large and recognisable targets. The majority fell far from their intended targets and commonly struck non-military sites. Hoeppner wrote after the war that "our opponents knew as well as we did that in an aerial bomb attack it was not just military targets that would be hit."[174] Similarly, navigation proved a constant challenge considering the low-powered engines, the general difficulty of aerial navigation, and inclement weather. Furthermore, rather than receding alongside rapid technological developments, the limits on achievable accuracy increased as the war progressed. The first capable fighters, incendiary ammunition, and improved anti-air gunnery further taxed already struggling crews, and the consequent shift to night bombing eliminated any remaining prospects of appreciable accuracy. Fundamentally, at the technical

[174] Quoted in Kennett, *A History of Strategic Bombing*, 33.

level there was no capacity to hit a specific target except by blind luck. The respective air forces, being aware of this, instead chose their targets to maximise the chances of hitting something and achieving any effect, which usually in turn equated to bombing cities to take advantage of clustered targets.

The high point of the limited strategic bombing efforts of the war came against Britain in 1917. A series of stunning raids accompanied the introduction of dedicated fixed-wing bombers that could fly higher and faster, mitigating the vulnerabilities of the Zeppelin, and could carry heavier loads for greater effect. Beginning in May 1917, 27 German bomber raids against southern England, including 17 against London, achieved perhaps their greatest successes of the war. Six successive evening attacks in September 1917 prompted approximately 300,000 Londoners to flee the city, with a matching a 30% drop in industrial output.[175] This dramatically eclipsed the effects of any previous raids, which were already as one British author described "particularly humiliating [allowing] an enemy to come over your capital city and hurl bombs upon it. His aim may be bad, the casualties may be few, but the moral effect is wholly undesirable."[176] The intention of the raids as described to the pilots was to attack "the morale of the English people."[177] With accuracy limitations well understood by this point, and two-thirds of the raids combining darkness and high altitude to improve survivability of aircrew, there were no illusions about the outcome of the bombardments. Orders "to raid targets of military importance in Great Britain" without specific identification of said targets reflected the state of the bombing norm within Germany, which is to say it was practically

[175] Parks, 'Air War and the Law of War', 21. See also Kennett, *A History of Strategic Bombing*, 38, 50–53.
[176] R.P. Hearne, *Zeppelins and Super-Zeppelins 1916*, 1st edn (John Lane, 1916), 6.
[177] Raymond H. Fredette, Hanson W. Baldwin and Tom D. Crouch, *The Sky on Fire: The First Battle of Britain, 1917-1918* (University of Alabama Press, 2006), 264.

non-existent.[178] This vaguely discriminatory intent alone, with no tangible connection to effect, was apparently sufficient to legitimise bombardment.

For many, these stunning raids also finally proved the long-foretold morale effects supposedly capable of paralysing a nation's war effort, further encouraging similar attacks endangering civilian populations in the hope of the same disruptive effects. This made such an impression that it quickly became the centrepiece of emerging theories of air war. The Smuts memorandum offers a prominent example, stating:

> As far as can at present be foreseen there is absolutely no limit to its future independent war use. And the day may not be far off when aerial operations with their devastation of enemy lands and destruction of industrial and populous centres on a vast scale may become the principal operations of war, to which the older forms of military and naval operations may become secondary and subordinate.[179]

The German example of 'open city' bombing beginning with the Zeppelin attacks in 1915 and moral bombing perspectives shaped in turn Britain's response to the September raids, and contributed to a developing British approach towards strategic bombing as a weapon intended to destroy the 'home front'.[180] Out of necessity, the RNAS and the Royal Flying Corps (RFC) were amalgamated into a unified, standalone, British air force—the Royal Air Force (RAF). Prime Minister Lloyd George promised the people of London that via the RAF "we will give it all back to them and we will give it to them soon. We shall bomb Germany with

[178] Fredette, Baldwin and Crouch, *The Sky on Fire: The First Battle of Britain, 1917-1918*, 261.
[179] Quoted in Thomas, *The Ethics of Destruction: Norms and Force in International Relations*, 106.
[180] Andrew Barros, 'Strategic Bombing and Restraint in "Total War", 1915–1918', *The Historical Journal*, 52:02 (2009), 428–29.

compound interest."[181] However, although undertaken and enacted in a political panic, it was far from a knee jerk reaction. Many military aviation advocates had sought this for years. Kitchener, for example, proposed strategic attacks on German industrial cities as far back as 1914 with broad support from civilian and military spheres. Thus, the newly formed RAF, with orders "for direct action against the heart of the German industrial system," embarked on a retaliatory campaign against German cities in the same manner as the German attacks against London.[182] Trenchard's remarks to Lord Weir, the British Air Minister, well illustrate British attitudes surrounding this campaign. Weir instructed Trenchard not to be overly concerned with the inaccuracy of bombing to which Trenchard replied, "all the pilots drop their eggs well into the centre of the town generally."[183] Clearly, functionally indiscriminate bombing was fully accepted and of little concern.[184]

In a sense, it is surprising that these retaliatory pressures did not mount sooner in light of the intermittent Zeppelin raids earlier in the war. One contributory factor was technical capability. Compared to the faith Germany had placed in airships well before the war, Britain had only a few experimental models. These were dedicated to anti-submarine operations, not bombing, while the resources for further construction went elsewhere. The greater part of the restraint shown to that point is owed, instead, to pressures imposed by strategy and doctrine—illustrating how the pressures of war shaped ideas of the air war. The RNAS was tasked with securing The Channel and it focused its efforts and limited resources accordingly

[181] Special Cable To The New York Times, 'Air Ministry Forming for British Reprisals; Lloyd George Makes Promise to London Poor', *The New York Times*, 4 October 1917.
[182] Thomas H. Green, *The Development of Air Doctrine in the Army Air Arm, 1917-1941* (USAF Historical Division, 1955), 9.
[183] Kennett, *A History of Strategic Bombing*, 27.
[184] However, despite the RAF's vigour, the late start meant that they barely got up to speed by end of the war. By the armistice, the RAF had dropped some 660 tonnes of ordinance on Germany to reach rough parity with German efforts over England, but far short of the 'compound interest' Lloyd George promised—for that, and guided by its genesis as strategic bombing force, the RAF would have to wait for wars to come.

on related strategic targets without thought to wider strategic bombardment objectives. Under the RNAS scattered British raids at the start of the war grew into a limited strategic campaign against Zeppelin, submarine, and eventually general industrial targets, all in close cooperation with French forces.

French efforts, meanwhile, began early with the creation of the *Groupe de Bombardment no. 1* (GB 1)—the first detached strategic air wing—in September 1914 and avoided strategic bombardment almost as a rule. With their Voisin III bombers capable of carrying several 90mm artillery shells as improvised bombs, the French focused close to the front on depots, columns, artillery positions and staging areas. Later selective expansions in targeting included important industrial sites such as aircraft manufacturing plants and other explicitly war-focused industrial works, paying close attention to their easy identification from the air and distance from cities to avoid the possibility of error.

Two logics drove French target selection.[185] First was an emphasis on *points sensibles (sensitive spots).* This doctrine preferred materiel targets with direct connections to the war effort in hopes of disrupting key lynchpins and causing disproportionate knock-on effects on the German lines. Interpretation of a bombing raid's merit came directly from its capacity to alter the situation at the front. A prominent example is the extended aerial operation against Briey Basin, an important iron ore mine. For over two years the French poured bombing resources into targeting a nearby rail junction, using over 1,800 tonnes of ordinance to disrupt operations and limit supplies of war materiel to the front. Second, strategic realities drove French conduct, and by extension the RNAS. The war was largely on French soil and many

[185] For a detailed examination of the policy and institutional dynamics informing French decision making, See: Barros, 'Strategic Bombing and Restraint in "Total War", 1915–1918', 413–431.

potential targets for bombardment were in occupied France or Alsace-Lorraine. France hoped to recover these areas and their occupants intact at war's end, not as smoking ruins, leading them to place many possible targets off-limits. Furthermore, French cities were firmly within the reach of German bombers while many German cities, including Berlin, were beyond the range of GB-1 or any Entente bombers till late in the war. Thus, opening full strategic bombing would have been distinctly disadvantageous. Concern over escalation also limited any retaliatory or strategic strikes against German territory to the extent that such strikes required direct cabinet approval if they threatened a corresponding retaliatory raid.[186] Consequently, most proposals were rejected outright and prevailing French concerns reigned even in British bombing throughout the war, including the campaigns after 1917 after the RAF prompted the first retaliatory raids on Paris in over two years.

This is not to suggest that moral compunctions played no role but whatever role they did play was largely—if not entirely—overshadowed by more practical considerations informing Anglo-French bombing practice. Certainly, the targeting logics enacted in support of bombing were equally accepting of civilian casualties incumbent on the proviso of a military target as were those of their German counterparts.[187]

[186] Kennett, *A History of Strategic Bombing*, 28. Some more ambitious strategic raids found approval. The most notable were against Badische Anilin und Soda Fabrik—a chemical factory producing chlorine for battlefield use—and a Mauser factory that produced 250,000 rifles a month. But these were still clearly military targets against which reprisal against cities was unlikely.
[187] Royse, *Aerial Bombardment and the International Regulations of Warfare*, 189.

Arrival at functional non-restraint

In sum the fledgling bombing norm entered the war without specific content and with the weak supplemental legal bounds discussed, the immediate consequence of which was heavy reliance on states to parse its content *in media res.* In so doing, states overwhelmingly chose to fill the norm's content not with bounds and expectations of restraint, but with exceptions enabling their pursuit of aerial bombardment and its promise despite its functionally indiscriminate nature.

Two central contributors to this outcome were technological limitations and, interestingly, congruency with surrounding norms. The profound technical limits on early aviation made meaningful restraint impossible in practice. In many ways this reduced the myriad questions on the regulation of aerial bombardment to one, yes or no. In that event, foregoing all strategic bombing was too great a risk for either side in light of the morale and strategic advantages. Moreover, neither side could afford that scale of resource investment without comparable return. As most important targets were within cities and to maximise effects considering the dismal accuracy, city bombing became a necessity.

Meanwhile, surrounding norms and the wider nature of the war permitted the relaxation of discrimination and a growing acceptance of 'unavoidable' civilian harm, which fitted with wider norms emphasising 'short, sharp' wars, and shifts diluting the distinction between combatant and non-combatant. The British blockade and German U-boat attacks followed this same strand of logic under the apparent necessities of nationalised economic warfare. Thus, strategic bombing was one of many behaviours during the war which challenged traditional distinctions, and a comparatively less costly one at that. Accordingly, both sides

came in due time to relatively easy acceptance of 'unavoidable' civilian harm from bombing directed at military objectives related to the war effort, each by their own road as the circumstances of the war directed. An interesting parallel between them was that in defining the characteristics of discrimination, when it came to their own raids it became a function of intent, not effect.

The public and press echoed this shift in their own ways. Interpretations of discrimination logics and other legal framings functioned almost exclusively as propaganda tools. Sensationalist rhetoric from the press, public, and political spheres—all of whom failed to grasp the underlying technical difficulties—further shaped and cemented these escalating ideas of bombardment. Whenever enemy bombs failed to find their mark—which happened frequently—the press wasted no time in branding them indiscriminate, terroristic, uncivilized with an assumption of intent. After all, they were just the latest proof of the perfidious nature of one's opponent and found frequent loud condemnation as a result. However, simultaneously, those spheres neither appreciated nor cared that their own retaliatory strikes were functionally identical, and that perceptions would follow the same logic. The obvious response was further reprisal, and the subsequent normalisation of city bombing. Thus, in the public mind and in spite of its relatively low impact during the war, the bomber quickly graduated from its status as a 'coming menace' before the war to the most dangerous weapon by war's end. Terrifying perhaps, but not such a great transgression once acclimatised and in light of the greater horrors elsewhere.

Overall, the direct lesson from this case for the regulation of innovative warfare in advance is to further demonstrate the perilous nature of incomplete establishment. The concerns at The Hague specifically identified the indiscriminate potential of aerial bombardment and the

presence of technical limitations, with both directly confirmed by the first city attacks. Nevertheless, despite that recognition and relatively strong concordance surrounding the incomplete norm, the reliance on states' interpretations to fill its absent content led to its practical abrogation. Subject to the pressures of total war, states enacted precisely the behaviour that concerned the delegates in 1899 and 1907—to the extent that, however unacknowledged, threats to civilians became a form of military objective.

This is not to suggest however that states rejected the incomplete norm entirely. Though bombing was indiscriminate in a practical sense—particularly by modern standards—at least the intent remained on military effects and not arbitrary civilian harm. Even morale bombing was far more about the psychological and symbolic than the physical. In filling the norm's content, states may have opted for functional non-restraint in practice, but they did not challenge the essential concept of civilian protection or bomb indiscriminately without a nominally legitimate target or justification via reprisal. Nevertheless, the practical lessons of WWI were carried into the interbellum and presented major barriers to contestation. The limited city bombing campaigns and their believed morale effects offered a tantalising and terrifying glimpse of what was to come which none could ignore.

Gas warfare in WWI

At Ypres in April 1915 and Bolimow in May 1915, Germany first unleashed lethal chemical warfare onto the modern battlefield in the form of some 180,000 kilograms of chlorine gas

released from cylinders along the sections of the front.[188] The results were stunning. Entire sections of the Allied line collapsed in the face of a cloud of gas against which there was no defence. This very nearly achieved the ever-elusive breakthrough. The war may well have ended in 1915 if not for the intervention of several Canadian regiments in the west, great distances in the east, and a broader failure by German forces to anticipate or capitalise on the scale of the successes. A delay between initial success and follow-up attacks provided an opportunity for both sides to lay preparations and develop effective defences, and chemical weapons quickly became another point of parity between the belligerents, to the detriment of all. The 1915 attacks began a process leading to complete abrogation not with a bang, but a whimper—German cylinder releases at Ypres and Bolimow fell beyond the terms of the prohibition but triggered its full abandonment all the same. Canister release soon opened the flood gates and saw the normalisation of chemical weapons by the end of the war.

The collapse of the gas shells prohibition offers a cautionary tale for regulation in advance. As gas shells emerged from The Hague with a confused, somewhat accidental prohibition largely without moral or normative content, the case offers some insight into the effects of the presence of a legal prohibition on innovative warfare sans a coherent supporting set of normative expectations. In comparison to the incomplete aerial bombardment norm, where regulation also lacked specificity but achieved concordance on the outlines of a norm, gas shells lacked both. States rejected the idea of a comprehensive gas weapons ban during discussions at The Hague, and attributed no special character to gas itself, with the consequent legal restrictions being more inadvertent than directly intended. The strongest objections noted at The Hague were in regard to civilian protection, not gas writ large.

[188] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 28.

Accordingly, states followed the course of the normative content identified at The Hague—i.e. the illegitimacy of using gas shells against towns—rather than the technical statement of illegality for the most part. Thus, the ability of The Hague gas shells prohibition to prevent or forestall the introduction of either gas shells or chemical warfare was very limited as that was not the subject of the moral content present. The result was that, as one study on the subject argued, "a dogmatic answer can hardly be given as to the reality of an international norm interdicting the use of gas in warfare … On the face and in balance it would seem that the evidence shifts the scales towards a conclusion either that no such was ever in being, or that if it was it did not survive the war. If there was such a rule, it did nothing to restrain the use of gas."[189] Or, in the words of A.M. Prentiss from his comprehensive 1937 study, "the abortive gas rule of 1899 failed to survive its first crucial test."[190] An unintended legal regulation alone, it seems, is insufficient to meaningfully constrain state behaviour.

Two aspects illuminate the path taken to this outcome and how states constructed the ambiguity of The Hague prohibition in the absence of supporting moral content; first, gas shells and wider chemical warfare found widespread consideration, development, and use well prior to the German attacks in 1915 with little apparent moral significance, indicating that several states were following the tone of discussion, not the letter of the prohibition. Second, the summary nature of the prohibition's abandonment further indicates that many states believed there little compelling reason to abstain from gas warfare, so long as it was confined to the battlefield in line with earlier stated positions at The Hague.

[189] Thomas and Thomas, *Legal Limits on the Use of Chemical and Biological Weapons*, 141.
[190] Augustin M. Prentiss, *Chemicals in War. A Treatise on Chemical Warfare.* (McGraw-Hill Book Company, Inc., 1937), 689.

Relatively unconstrained initial steps

Without compelling normative or moral content objecting to the use of gas in the field, the weaknesses in the gas shells prohibition were immediate. Steps towards consideration and development, and subsequent direct usage which stretched or breached the prohibition outright, occurred early in the war with little apparent reservation as, confined to the battlefield, they did not trouble the limited moral content present. Without moral or normative content addressing gas warfare, states on both sides paid little attention to the prohibition and were simply not constrained by it in a significant way. The limited reticence on display owed to stronger commitment to the abstract principle of international law by the British.

Broad interest in gas accumulated on both sides well before the initiation of full-scale use in 1915. As early as August 1914 the major powers were actively exploring gas as an option to break the stalemate. Several examples illustrate the breadth of this interest. For the British, the Admiralty re-examined Cochrane's earlier suggestions for sulphur dioxide clouds against fixed defences, but with heavy modification this ultimately became instead a form of naval smokescreen. Also considered were the tactical possibilities for irritant agents such as grenades for clearing bunkers. French forces began exploring the battlefield application of irritant agents which were already in use by the Paris police force. In August 1914 Germany reportedly began exploring grenades with phosgene and arsenic under Professor Haber.[191] Even in the US, though not yet at war, a patent for a hydrogen cyanide artillery shell was filed

[191] Haber disputed this post-war, claiming that the "question of gas as a means of warfare did not begin to engage our attention until the first three months of the war had passed." Quoted in Price, *The Chemical Weapons Taboo*, 72.

in December 1914. At this stage none of the belligerents had the technical means to follow through with any of these efforts, but all gave some formal thought to offensive use well in advance reflecting that there was no great odium attached to gas, not unassailable status tied to the prohibition.

As time progressed, irritant agents garnered serious attention from field commanders including resource commitments and provisions for their use at the small-scale tactical level. The French soon put them into action. A decision was reached as early as July 1914 to use chemical shells "as soon as possible," though at the time limited to those available—i.e. irritants of marginal benefit.[192] Reputedly the first use of the war was by a Parisian policeman freshly returned to the front from leave with several irritant grenades in his possession. Following his example, the French soon procured some 30,000 26mm cartridges loaded with *ethyl bromoacetate* and these and the grenades were available for field use in sizable quantities from August 1914 onwards.[193]

Significantly, French forces were also the first to fully breach the prohibition with *phosgene* shells at Verdun shortly before the German attacks at Ypres. Phosgene was lethal—eventually causing 85% of the 100,000 chemical weapons deaths of the war—and the primary purpose of the shell was distribution of the chemical, thus directly violating both of the prohibition's constraints. Importantly, this initial use was independent and not driven by reprisal or retaliatory logics. In fact, internally French steps towards full-scale gas warfare likely closely matched those of Germany.[194] Although Germany was the first to adopt gas warfare on a

[192] Price, *The Chemical Weapons Taboo*, 56.
[193] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, vol. 1. p. 131.
[194] Supporting this understanding is the time frames involved. Though Germany and France made mutual appeal to chemical use by the other in justification of their own, the long lead times to prepare and deploy new weapon systems suggests the claims were most likely *post hoc* justifications for decisions already made,

strategic scale, the French were the first to abandon The Hague prohibition and did so with no apparent concern, nor for that matter drawing any attention.

The British, likewise, noting the signs of consideration elsewhere, continued to contemplate irritants early in the war. They exhibited greater observance to the text of The Hague prohibition in doing so out of deference to international law as a principle, and anchored their reluctance around it. British considerations noted that the text of the prohibition permitted irritant agents "although contrary to its sprit."[195] Following consultation with the Imperial College in London, *ethyl iodoacetate* was the principle agent of choice offered to the Commander of the British Expeditionary Forces. A range of distribution methods and other agents were considered as long as they were deemed insufficiently deleterious to breach The Hague terms. Initiation, however, was nevertheless rejected for fear that the enemy would follow suit. The Entente's precarious position at this stage of the war likely played a role in the rejection as they had a smaller margin for error from introducing unknown weapons with retaliatory potential—in view of Germany's strong chemical industry. This brief dalliance effectively ended British consideration of chemicals until after the Second Battle of Ypres six months later following German initiation of lethal chemical warfare. Importantly, gas was not shelved for direct normative reasons directly addressing gas itself, but in view of stronger British commitments to international law as their *casus belli* and their consequent propaganda position, leading the War Office to flatly reject further suggestions for lethal gases considering The Hague prohibition.[196]

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not their origin. Instead, it is more likely that each state pursued development concurrently but independently, while assuming a state of parity existed.

[195] Major-General C. H. Foulkes, *"GAS!" — The Story of the Special Brigade* (Andrews UK Limited, 2012), 23.

[196] Price, *The Chemical Weapons Taboo*, 52.

Meanwhile, Germany examined her options more thoroughly with the benefit of perhaps the pre-eminent European chemical industry of the time, also showing no apparent concern surrounding the gas shells prohibition. In October 1914 at Neuve-Chapelle, Germany made brief use of a converted 105mm shell loaded with *o-dianisidine Niespulver*, an irritant for the upper respiratory tract.[197] Its effects were unclear. The French remained unaware that anything unusual was afoot, while German reports attributed it with some credit in the successful offensive. Regardless, other more effective methods and agents soon supplanted it. The T-Stoff shell took its place in the short term. This consisted of two-thirds high explosives used to dissipate a mixture of brominated aromatic hydrocarbons. Its first use on the Russian front went poorly as it was too cold for the agent to vaporise. Subsequent improvements to the agent, the shell, and in climatic conditions saw the shell prove its worth in later use in the west in March 1915. Throughout this process there appears some acknowledgement of The Hague prohibition, but given German attitudes of *kriegsraison* (military necessity) and tenuous adherence to international law in other areas, this provided little practical constraint.

Collectively, these examples illustrate the wide consideration and active use of gas warfare—including distribution of lethal agents by shell—down at the field level well before April 1915. Several immediate conclusions can be drawn. First, this was in keeping with the moral content on display at The Hague which voiced no objections to battlefield use. France and Germany, it appears, exhibited little apparent concern for the text of the gas shells prohibition within the context of the front, and clearly attributed no great or special character to gas weapons. Second, while paying the prohibition more attention, Britain was still content to prepare for gas warfare despite the ban. Third, The Hague prohibition was not initially interpreted as a

[197] Ibid.

full prohibition on chemical warfare *per se*. Irritants up to a point apparently fell beyond the terms 'deleterious and asphyxiating' in the eyes of the belligerents, including the British as the most observant of international law. However, the details of this threshold were also uncertain and largely undiscussed, before being rendered pointless by the introduction of lethal agents. Moreover, the presence of gas irritant agents early in the war inadvertently diluted any possibility of clear distinctions being made over the character of gas warfare—a fact not lost on German propagandists when it came time to frame and defend German initiation in the papers.

Summary abandonment on the battlefield

In a direct continuation of the minimal constraints present in those initial steps, when both sides came to consider full-scale gas warfare at the front they adopted it relatively seamlessly and with little moral or normative concern. The German decision to escalate matters was possibly inevitable given weaker commitments to the provision of international law, with German steps towards the major chlorine attacks in early 1915 demonstrating this well. Though the first major attacks technically circumvented the prohibition through canister release, this was not the intent. Neither was the shift from non-lethal shells to lethal agents considered in terms of the prohibition. Instead, technical reasons alone prompted both. The desire for larger areas of effect that were sufficient for strategic purposes forced the shift to lethal agents. The payloads of irritant shells in use to that point were considered too slight and unreliable, with the limited effects of the T-stoff shells at Bolimow in January proving

their marginal utility.[198] Lethal agents promised sufficiently reliable wide-area effects to be useful at the strategic level with a wider margin for error. To achieve this Haber proposed chlorine cylinders.[199] Cylinders alleviated some of shells' reliance on atmospheric conditions for dispersal, with higher and more reliable doses more easily achievable. Haber also noted that "in 1915 and for much of 1916 the shell shortage left chemists with no choice and perforce they had to concentrate on the practical problems of generating gas clouds."[200] Chlorine, too, had advantages here. It was viable in a wider range of temperatures—unlike the T-Stoff shells—and was easier to produce and transport in quantity. Furthermore, when released from canisters it naturally formed an ideally suited low-hanging cloud that maintained effective concentrations.

In effect, whatever limited constraint The Hague prohibition might have imposed earlier was entirely meaningless once German leadership and high command saw a use for strategic-level chemical warfare across wide sections of the line. Doctrines of military necessity prevailed over almost any other concern, and against which a limited point of technical illegality was no practical barrier. Whatever trepidation was present was not directed at the breach of prohibition itself, but instead at the business of honourable warfare between soldiers. According to Haber, who sought final formal approval for the attacks, Falkenhayn expressed a view that "gas was 'unchivalrous', but nevertheless hoped it would lead to a decisive solution in the West."[201] Haber also had the strong impression that Falkenhayn believed the attacks to be fully legal, although the two did not discuss the issue in depth.[202] Similarly,

[198] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 27–28.
[199] See: Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 28–29.
[200] Ludwig Fritz Haber, *The Poisonous Cloud: Chemical Warfare in the First World War* (Clarendon Press Oxford, 1986), 28.
[201] Haber, *The Poisonous Cloud: Chemical Warfare in the First World War*, 28.
[202] Ibid.

General Berthold von Deimling expressed his personal displeasure as an honourable soldier towards "poisoning the enemy like rats," but placed his personal preferences aside as "war is necessary and knows no law."[203] In short and in common with cases already discussed, in service to military necessity almost anything which promised military use was permissible. The humanitarian impetus was to end war as quickly as possible, by whatever means available, with little regard to the arbitrary inclusions of international law in the process.

Accordingly, the chlorine attacks in April and May were regarded as having no major significance as simply the first battlefield trial of a new weapon. Surely if these were a significant moral transgression there would have been at least some consternation, at the very least from Bethmann with his evident concern over the diplomatic consequences for norm breach in other areas. Instead, steps towards use proceeded apace. Once Germany initiated the strategic use of lethal gases any lingering reservations attached to the prohibition ceased to be a serious consideration for all the belligerents.

In response, and with no apparent reservations against battlefield use of their own, French, British, and Russian forces rushed to employ their own increasingly lethal gases as far and as fast as they could—often also electing for canister release for many of the same technical reasons as had Germany. The British, despite their sporadic misgivings and perhaps the strongest underlying commitments to international law, became the greatest employers of gas—though as much due to favourable prevailing winds as other reasons. Some attention was given to justifying the introduction of gas into new theatres, but this was easily done and did not reflect strong opposition to gas warfare. For example, in authorising use against the Turks in Egypt, the British War Cabinet justified it thus: "having regard to the atrocities

[203] Berthold Diemling, Quoted in Price, *The Chemical Weapons Taboo*, 49.

perpetrated on the subject races by the Turks and their maltreatment of Allied prisoners during the present war, felt no hesitation … [deciding that the] Gas shell could be used against the Turks."[204]

Significantly, the prospect of serious use beyond the immediate battlefield did not arise during the war, so the limited moral content on display at The Hague was never tested by the war itself. Towns surrounding the front were exposed to gas drifting beyond the battlefield, but this was generally excused as an incidental attack tied to a legitimate military use in the same manner as errant aerial bombardment. This was the full extent of civilian exposure. Some evidence suggests that strategic aerial bombardment with gas was being considered during the war. Haber, when lecturing in 1926, mentioned proposals from Count Zeppelin for gas attacks by air against Verdun which were rejected as being too inaccurate.[205] Trenchard's international bombing force was also supposed to have contemplated the inclusion of gas, but there is no indication that the decision to do so was made.[206] Neither action was remotely feasible during the war, however. The means for aerial gas attacks were simply too immature. Mustard gas was the first effective agent for the purpose, and it came far too late for use before the armistice, fortunately preventing the idea of gas attacks against towns from ever fully entering the picture—especially for the course of events post-war when the time came to contest gas warfare.

[204] Cabinet minutes. Quoted in Price, *The Chemical Weapons Taboo*, 54 This reversed a previous decision during the Galipoli campaign not to introduce gas shells unless the Turks did so first.
[205] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 99.
[206] Ibid.

A direct path to normalisation in the absence of norm content

An additional effect of the general absence of distinctive normative content objecting to gas on the battlefield was that there was a direct path to the normalisation of gas following the collapse of the Hague prohibition. Though not welcomed *per se*, it was accepted as a component of modern warfare. The absence of moral or normative content supporting the prohibition aided this process immensely. Where the other cases examined here demonstrated normative discourse and rhetoric in support, and justification or condemnation of the innovation in question throughout the war, these reactions were largely absent after the introduction of gas. In sharp contrast to the submarine case discussed above, and despite entering the war *with* a legal prohibition, a gas norm did not emerge *in media res*.

The notable lack of outrage towards reports of the initial gas attacks reflects the absence of moral or normative content. Language in the Allied press decrying gas was largely absent, and focused instead on arguing that the attacks technically breached international law, or at least its assumed spirit. The focus was the technical legal point, not a strong normative or moral characterisation of gas. In a sense, the introduction of gas was a relatively mundane affair and in line with the course of the war. In the words of one survey of atrocity propaganda during the war, "the general silence on the subject during the week following April 22 seemed to indicate that gas was not to be accounted as an atrocity."[207] The absence of strong moral condemnations is especially conspicuous considering the wider rhetoric of an Entente steeped in claims to the moral high ground. Whatever status gas war held at first was due not

[207] James Morgan Read, *Atrocity Propaganda, 1914-1919* (Ayer Co Pub, 1972), 195–96 See also, ; Price, *The Chemical Weapons Taboo*, 55–56.

to its nature, or to it being a new weapon, but to a breach of a presumed spirit in The Hague declarations.[208]

Discourse following the major German attacks at Ypres and Bolimow then continued with any moral implications already clouded. To soften the ground before their use of chlorine, Germany publicly accused the Entente of breaching the prohibition shortly after taking their own final decision to use chlorine gas in the field, but months after their original decision to adopt lethal chemical weapons. To diminish The Hague declaration they cited earlier French usage, captured French documents dated February 1915 detailing chloroacetone cartridges and grenades, and unsubstantiated—but widely circulated—newspaper reports on the development of a gas by French chemist Eugene Turpin (Turpinite) that paralysed victims to a swift death.[209] The day after the attacks German radio broadcasts also argued that gas clouds did not breach the prohibition as it addressed only projectiles. Interestingly, British opinion didn't reject this argument. Echoing the arguments of Mahan, and Playfair before him, The Times of London noted that "a few shells which spread death in the air" were no worse than "hundreds of guns and howitzers … in order to destroy and break to atoms everything living."[210] Thus public discourse effectively began with questions about the underlying merit of the prohibition, which grew into a continuing strand of argument intermittently from both sides—though especially from Germany—about gas warfare's humaneness.

[208] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 33.
[209] 'New French Shell Kills by Concussion: "Turpinite," Doubling the Effect of Fire of 3-Inch Guns, Strikes Men Dead Without Pain. Long Kept a Deep Mystery but Now Revealed as Cause of the Many Stories of Germans Annihilated in Trenches.', *New York Times* (6 April 1915), 3.
[210] 'Through German Eyes. Poisonous Gases: A Quick and Painless Death', *Times, The (London)* (29 April 1915).

Matters continued in this vein as the war progressed, with few efforts framing gas itself as morally troublesome. Entente propaganda framed the initiation of chemical warfare as an act of German illegality and inhumanity but this was only one of many such arguments against Germany, while failing to address complaints against the nature of gas weapons directly. But it was Germany that was inhumane, not the gas. Debate during and immediately after the war typically devolved into a contest over who started the gas war, centring on matters of its legality as a means of impugning the other party, and again not on the moral or normative nature of the weapon itself. Minor incidental cases aside, chemical weapons were also never used directly against civilians and thus did not impact on the home front in the same way as did aerial bombardment, attracting far less attention as their effects were firmly contextualised by the other horrors of the front. This proved an important detail in later debates during the interbellum, but for the moment it helped to minimise the attention gas received. Furthermore, soon after the Entente took up chemical agents both sides blocked almost all mention of it in the press to avoid providing valuable information regarding its effects. Any discourse related to gas was sidelined maintaining the status quo that gas was distinct, unpleasant, but not any more morally distasteful than the trenches themselves.

By the end of the war, whatever the misgivings surrounding gas, it was for all intents and purposes normalised. In the words of the SIPRI study, “those of the general public who could recall anything of the wartime publications on [chemical weapons] might have adopted any one of a number of assessments: gas as a humane weapon, gas as a terror weapon, gas as just another weapon as horrible as any other. The accounts of demobilized veterans might support any of them, depending on the type of chemical weapon they had faced. There was certainly no consensus of opinion, and during the Russian Civil War there appears to have been no outcry about the use of chemical weapons or their supply by the intervening

powers."[211] Clearly gas did not emerge from war with the same stigma as the submarine had with the Entente.

Furthering normalisation, within military circles gas was a strong candidate for expansion as they regarded it as useful and actively sought to maintain it as a tool. Experience during the war convinced many military thinkers of the utility and significant military worth of gas warfare, bolstered by the recognition that the technical, tactical, and doctrinal possibilities were far from exhausted. One such recognition was that the flow of the war had not accommodated gas's greatest defensive strength—to place a wall of gas in the face of an enemy advance. Assuming it wasn't simply lethal such a wall would impede movement, communication, coordination, and the fighting ability of individual soldiers. While this strength had been recognised during the war, it was rarely seized. The Entente lacked the capability early in the war when it was advantageous, and had little need to do so later in the war when Germany was on the defensive, and by which time German supplies of chemical agents and shells were low enough to prevent them from doing the same.

Overall, once initiated and with the tenuous Hague prohibition breached, gas became a fixture of the war without further debate owing to the absence of meaningful moral content applicable to its battlefield use. That use ebbed and flowed in response to strategic need and the waves of research development. New agents brought an increase in attacks, while corresponding improvements in defensive masks saw a decline. In total the belligerents employed 120,000 tonnes of gas to the tune of 1.3 million casualties.[212] Yet the impact of gas warfare on the course of the war is difficult to discern. Certainly, there was potential there

[211] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 234.
[212] Prentiss, *Chemicals in War. A Treatise on Chemical Warfare.*, 653–54.

for great success, but amidst the general stalemate of the front little shone through. Two official British historians later concluded that "gas achieved but local success, nothing decisive: it made war uncomfortable, to no purpose."[213] Speaking to its normalisation, note the use of the word uncomfortable, not unconscionable.

Conclusions: the probable failure of establishment in advance

With the above examinations in mind, I return to the core question driving this chapter; how do ambiguous regulatory norms created in advance fare and what becomes of them?

The three forms of innovative warfare considered for regulation at The Hague before their widespread use entered the war with ambiguous expectations and/or incomplete and fragile norms. Submarines were implicitly governed by surrounding maritime norms, aerial bombardment possessed the outline of an incomplete norm resting on the ambiguous application of civilian protection, and gas shells attracted an explicit but arguably unintentional ban with scant normative or moral content. The immediate consequence of ambiguity is to ask states to interpret innovative warfare and its relation to surrounding norms *in media res.*

During WWI, states engaged with that ambiguity to interpret innovative warfare and its bounds every which way. For submarines, they arrived at two competing norms—one emphasising the transformative nature of industrialised warfare by embracing the submarine

[213] Edmonds and Maxwell-Hyslop, History of the Great War: Military Operations in France and Belgium, 1918. Quoted in Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 141.

and its use against merchant vessels, the other doggedly reasserting traditional norms to hobble the submarine in spite of that transformation. Aerial bombardment saw both sides arrive at the same conclusion by different roads—the same functionally indiscriminate bombing with attention to its morale effects, regardless of efforts to frame it otherwise. Gas warfare entered the war with a broad legal prohibition and little normative or moral content and left the war with neither as far as the battlefield was concerned. In practice the consequence of ambiguous norms and understandings of innovative warfare, despite variances in the configuration of that ambiguity or its legal status, was the same—non-restraint.

One can therefore draw an immediate conclusion: the probable outcome of establishing regulatory norms addressing innovative warfare is non-restraint. States will interpret fundamental ambiguity to suit their interests and experiences, and may ascribe to it very different meanings as a result. Germany embraced the submarine and interpreted existing maritime norms in a way which enabled it to do so. Britain did the reverse while maintaining a blockade that dramatically exceeded the effects of the submarine, justified by the same core logic. Both sides came to see purpose and utility in aerial bombardment, then in its morale effects, and seized on the absence of specificity to construct understandings of bombardment that excused functionally indiscriminate attacks on civilians via a "doctrine of military objective."[214] Similarly in gas warfare states saw a morally unencumbered tool which could break the stalemate and sought its application almost immediately, with no consideration of the poorly defined prohibition whose limited content was not relevant to the battlefield. The consequence of which is to ensure that if one state sees potential, it is

[214] Williams, 'Legitimate Targets in Aerial Bombardment', 573.

likely to pursue it and force others to do the same. That the Entente did not undertake a submarine campaign of their own is due in no small part to their not having the opportunity. Moral condemnation followed as much from the strategy as the other way around.

Under conditions of active hostilities, resolving disputes and constructing shared interpretations is fundamentally undermined by the stakes of the conflict and the discrepancy of experience. Neither side was willing to easily concede that their actions were illegitimate, or to pass up an opportunity to frame the other's as such. Submarines and blockade, with their disproportionate impact, caused each side to feel more keenly the negative effects of its adversary's actions while believing in the necessity of their own in response. It speaks volumes that the only significant restraint imposed on these forms during the war came from external states and rested on strategic pressures should they join the war. For bombing too, states vociferously decried the actions of their adversaries while pursuing the same acts carefully nestled within moral framings that supported a distinction without difference between the two. Once committed to a course of action with normative implications during war, states are unlikely to reverse course easily.

Ambiguity not only led to non-restraint, but to its interpretations becoming entrenched within each state. Norms are ongoing discursive processes featuring the constant construction and reconstruction of norm content in relation to earlier interpretations, history and current practice, while reacting to and observing the course of that discursive process elsewhere. Accordingly practices in WWI now constituted a major factor in future interpretations of those means and methods of warfare, for better or worse. With behaviour and practice also come inertia, and each state's process interpretation and translation into action constituted a history of implementation of the version of the norm they created. In

turn came a matching collection of political and resource commitments, along with pressures to maintain the legitimacy of past conduct and established military organisational views. All carry with them path dependence effects which influence future interpretations and conduct. In other words, the consequence of ambiguity went beyond yielding to non-restraint in WWI, to embedding it in the future as well.

Of course, as I briefly addressed at the start of the chapter, the environment and congruency with surrounding norms/behaviours is a major factor in this outcome. As was the case at The Hague, states entered WWI believing restraint was something to be avoided, not sought. Once Europe was aflame, the pressures of war eclipsed all with their totality and the transformative reality of fully-industrialised attrition warfare with existential stakes. WWI was a war of necessity and states treated it accordingly. That it became a stalemate only ensured that those significant pressures away from restraint remained. In effect, the probability of a restraint outcome in WWI was never strong.

Future cases of regulation in advance will inhabit their own distinct environments for establishment and first major use, likely with an equally pronounced effect on outcomes and interpretations of ambiguity. Today, for example, the increasing legalisation of the use of force, the so-called 'long peace', the growth of global civil society, and a state of complex-interdependence, presumably impose a collection of pressures towards restraint which were largely absent in WWI. Similarly, if first major use occurs within a war of 'choice' rather than of 'necessity', then we might expect greater reservations informing states' constructions of ambiguity. The removal of existential stakes, lesser objectives that are more adversely affected by extreme measures and the importance of maintaining relationships with third parties all contribute to how states interpret ambiguous behavioural expectations. However,

many of the same dynamics headed in the other direction may also be present. There are for example quite distinct interpretations of international law between several major states across a variety of areas. Clearly, this point requires deep consideration when contemplating any international norm, let alone one in advance.

Despite appearances to the contrary, the non-restraint outcomes in WWI are not the end of the story. All three historical innovations examined in this dissertation were the subject of renewed regulatory attention between the wars with the benefit of the understandings gained during WWI, and the robust disarmament agenda that came with them. The Hague in 1899 was the practical antithesis of a fertile regulatory environment, while the 1920s and the 'palace of peace' were the reverse. The contestation of innovative warfare occurring therein is the focus of the next chapter and constitutes the second critical phase of the regulation of innovative warfare identified in Chapter 1.

CHAPTER 4: THE CONTESTATION OF INNOVATIVE WARFARE

This chapter explores the second critical phase in regulating innovative warfare; contestation. Between WWI and WWII (the interwar period) states continued adapting to the innovations of strategy and tactic that emerged during WWI, based on their experiences and the lessons drawn from them. Included was expansive contestation of the three innovative forms discussed thus far: submarines, aerial bombardment, and chemical warfare. As established in Chapter 1, contestation comprises two aspects: first, objecting to or refusing the implementation of norms as social practices (being principles, rules, or values) and second, discursive engagement as a mode of critique. Furthermore, I outlined the importance of the 'legitimacy gap' and the presence or absence of shared experiences in narrowing or widening that gap. The core question on which this chapter focuses is: what did contesting an innovative and emerging form of warfare mean for those processes?

An immediate point of note is that, now freed of the immediacy of war, states undertook a more considered approach heavily shaped by the robust international disarmament agenda arising post-war. Where the failings at The Hague pre-WWI can be somewhat attributed to the wider climate of the time, the disarmament period provided a remarkably receptive international environment for disarmament. States met suggestions for the restriction of warfare in genuine pursuit of the limitation or abandonment of many types of warfare. Though these are often described as having come to naught following the collapse of the World Disarmament Conference in 1934 (as well as broader efforts to outlaw warfare via the Kellogg-Briand Pact), the underlying efforts were—broadly speaking—forthright and backed by strong public and political will. Webster notes that during that period, "states did accept

(with varying degrees of commitment) that their armament levels could (even should) be limited by international negotiation. Policy makers understood that they could not simply ignore the process. Disarmament thus remains one the clearest demonstrations of the new internationalist urge of the 1920s, the positive accomplishment of which are too often swamped by the disasters of the 1930s."[215] Thus where pre-WWI efforts struggled against the tide, during the interwar period early contestation benefited from its political environment.

An important distinction separating contestation post-war from establishment in advance pre-war was that states were now acting less in the dark. War experiences furnished interwar discourse with substantially greater understanding of the subjects considered, their implications, and where they fitted within the scope of modern war. However, these understandings were by no means complete or approaching consensus between states. On the contrary, and as examined in Chapter 3, each state typically developed its own bespoke construction of each form of innovative warfare, interpretations of its legitimacy and the appropriate limits on its use, as well as the 'correct' legal frameworks to govern it, all in service to wartime interests. Contestation during the interwar period was therefore first and foremost a matter of engaging with those bespoke understandings to develop or construct new specific norm content shared concordantly between states that harboured at times mutually exclusive perspectives. Wiener notes that "due to the diversity of individual background experiences which come into play in an inter-cultural encounter, the shared recognition of norms becomes less likely and, accordingly, clashes about norms are to be expected."[216] Thus, not only did states hold to differing interpretations of innovative warfare,

[215] Andrew Webster, 'Making Disarmament Work: The Implementation of the International Disarmament Provisions in the League of Nations Covenant, 1919–1925', *Diplomacy & Statecraft*, 16:3 (2005), 564.
[216] Antje Wiener, 'A Theory of Contestation—A Concise Summary of Its Argument and Concepts', *Polity*, 49:1 (2017), 5.

but due to their differing experiences those interpretations were more likely to come directly into conflict. In other words, the absence of common experiences directly exacerbated the legitimacy gap that must be overcome for successful contestation to arrive at concordance on new norm content. Even in those cases where first-use enabled the development of detailed regulation, states were typically even more split than before on which version of regulation to support while informed by conflicting experiences and interpretations.

This chapter proceeds in a manner mirroring the preceding chapters. I first examine normative contestation around regulating the use in warfare of the submarine, followed by strategic bombing, and finally chemical weapons.

The submarine's polarised contestation

As examined in the Chapter 3, the anticipatory failure at The Hague saw two competing submarine norms emerge during WWI as the two sides sought to parse the role and responsibilities of the submarine: one embracing it as a primary tool of commerce-raiding, the other rejecting it entirely as a weapon. Consequently, rather than practical normalisation by the end of the war, states actively disputed the legitimacy of submarine commerce raiding (and by extension the submarine itself) throughout. The submarine emerged from the war both lionised and demonised depending on perspective. Simultaneously, German rejections of the British blockade against British claims of legality and necessity provided almost a mirror image. Conflicting experiences meant that exposure to their respective strategic and moral effects was entirely uneven, which also extended less forcefully to those states not directly affected by either. For example, France also rejected submarine commerce raiding but with

less absolute conviction than Britain, owing largely to differences in experience, and carried those lessons to different responses in turn to the larger question of the submarine.

The contestation that followed those divergent experiences and interpretations derived during the war directly informed interwar discourses and interwar contestation began sharply polarised, corresponding to equally polarised wartime interpretations. This offers clear insight into what contestation addressing innovative warfare means for the process, specifically that the absence of shared experiences or points of analogy amplified the legitimacy gap upon which the essentially contested nature of international norms hinges, and further ensured that discursive engagement from either side failed to penetrate while both largely rejected norm content offered from the other perspective.

To examine this in detail I first consider the scale of the legitimacy gap and fundamentally opposed 'meanings-in-use', before examining the deeply flawed nature of the institutionalised regulatory norm that arose by circumventing the legitimacy gap but without filling it.

An amplified submarine legitimacy gap

States entered the interwar period informed by understandings of the submarine formed during the war and shaped by relative exposure and perspectives on submarine commerce raiding. Just as the Entente won the war, the victory was also a form of triumph for Anglo-American understandings of the submarine. The contestation that followed saw the US and Britain, as the two dominant post-war international actors, undertake to impose their shared

understandings of the norms relating to the wartime submarine upon the international regulatory process. Britain described the submarine at the Washington Conference in 1921-22 as "a weapon of murder and piracy, involving the drowning of non-combatants."[217] The 'viper of the sea' was, in their view, one of the most heinous and odious tools of the war such that the submarine was "utterly incompatible with the principles of humanity."[218] International discourse followed from those understandings and as a direct rejection of German wartime arguments.[219] The result was a specific and seemingly concordant regulatory norm twice codified, including German acquiescence, that carried into WWII as the London Protocol. A *de facto* ban on submarine commerce raiding appeared the outcome.

However, far from an effective or concordant process contesting the legitimacy of that behaviour, The London Protocol was a façade. Churchill described belief in its effectiveness as "the acme of gullibility."[220] Its terms were excessively onerous and minimally specific on a host of contentious points that emerged during the war in pursuit of a *de facto* ban. Despite extensive efforts, Anglo-American contestation of the submarine and the bulk of the underlying anti-submarine norm consequently struggled to spread beyond its origins as the legitimacy gap remained almost entirely unreconciled. At root was the fundamental diversity of inter-cultural experiences and interpretations of the submarine such that there was no common point of analogy or viable common path to a concordant international norm. This manifested implicitly and explicitly throughout the discursive engagements of the period, as

[217] Emily O. Goldman, *Sunken Treaties: Naval Arms Control between the Wars* (Penn State Press, 2010).
[218] Quoted in Legro, *Cooperation Under Fire: Anglo-German Restraint During World War II*, 83.
[219] References to the 'viper of the sea,' strongly emotive and lurid language peppered British discourse and were common from the public and press in Britain and the US. For example, see: '"To Rob the 'Sea Viper' of Its Venom", The Literary Digest, Saturday, February 22nd, 1930', *UNZ.Org* <http://www.unz.org/Pub/LiteraryDigest-1930feb22-00009> [accessed 30 January 2015]; Redford, *The Submarine*, chap. 3.
[220] Winston Churchill, *While England Slept: A Survey of World Affairs, 1932-1938* (GP Putnam's Sons, 1938), 217–18.

well as via social practice in rejecting anti-submarine norms and refusing their implementation in those states disinclined to abandon the submarine entirely.

I explore this legitimacy gap by first examining the various interpretations and the scale of divergence between them—to the point that some were almost mutually incomprehensible—before considering the international regulatory discourses which arose from those interpretations.

Beginning with the Anglo-American position, two factors drove their interpretations of the submarine during contestation. First and foremost was the shared experience of being on the receiving end of a one-sided and stunningly morally transgressive submarine campaign against their maritime traffic. As examined in the previous chapter, this led to the stigmatisation of the submarine and created a compelling anti-submarine norm along with its accompanying legal understandings, all bolstered in public discourses by extensive wartime propaganda reinforcing the general 'illegality' of German conduct.[221] For the British, this encapsulated not just a repudiation of German conduct, but a reassertion of deeply held traditional maritime norms regarding private property and non-combatant immunity.[222] The US position varied somewhat through the interwar years, but was generally closely aligned with that of the British. Wilsonian 'freedom of the seas' doctrine and frequent excoriations of German submarine conduct in WWI, along with the sinking of the *Lusitania* and the Zimmerman telegram, provided the American *casus belli,* playing a central role in the justifications, constructions, and framings of the war. Post-war, the strength of the anti-

[221] See also: Redford, *The Submarine*, chap. 3.
[222] Redford, *The Submarine*, 111–15.

submarine norm grew in American public discourse as did the political and international commitments to its ideational dimensions.

The second driving factor was strategic interest. For both the US and Britain, possessing Mahanian navies and placing great strategic importance on defending their ocean approaches, the submarine comprised a major threat. Though convoy tactics had tremendously diminished the threat, submarine commerce raiding remained a point of major concern. Meanwhile, if unrestricted commerce raiding was prohibited as they both hoped, there was little the submarine offered that surface vessels could not also achieve, and without commerce raiding as an option submarine procurement was in direct competition with that of 'big ships' and their fanatical adherents. Also troubling Mahanian adherents was the conventional threat posed by the submarine. Battleships were supposed to be effectively invulnerable to everything except other battleships and thus worthy of their immense cost. Yet submarines sank a third of the capital ships lost during the war, at a fraction of that cost. This led some to suggest that battleships were obsolete. To Britain and the US, dependent on naval power to project power internationally and committed fully to Mahanian ideas from shipyard to Admiralty, this was not a welcome suggestion.

In the end, the calculus was simple. As long as submarines remained the possibility of an unscrupulous opponent abandoning restraints as Germany had done also remained, as did their strategic threat. The worldwide economic effects of the German campaign only underscored that commerce raiding anywhere posed an economic threat to both maritime trading nations, whether they were belligerents or not. Thus, informed by wartime experiences, Wilson and Lord George joined together in pursuit of a full prohibition that reflected the strong Anglo-American anti-submarine norm, fitted well with prevailing

doctrinal and strategic concerns, and had the added benefit of being morally, legally, and normatively 'right' as they saw it.

Despite the Anglo-American conviction, other states were far less convinced. Each had arrived at its own interpretation of the submarine, which did not necessarily or fully align with the Anglo-American norm. French attitudes provide a succinct point of comparison from a close ally during the war, indicating the more limited spread of the Anglo-American norm. First, they did not share the intensity of British and American experiences or vulnerability, nor the degree of its wartime stigmatisation. For the French, directly engaged in a war on their own territory at terrible cost, some minor losses at sea were of far less concern than they were to two states protected by an ocean. Second, other states were also more likely to note Britain's arming and formal integration of her merchants as a contributing factor, undercutting the clarity of the Anglo-American position. One senior officer in the French navy remarked that in light of this Germany had been "absolutely justified" in using its submarines, causing a storm of controversy that indicated anything but consensus on wartime interpretations.[223] Third, the French also actively challenged arguments charging the submarine was inherently odious as a weapon, arguing instead that criminality lay in the use.[224] Supporting this were enduring convictions of the legitimate utility of the submarine in other areas, such as for defensive and asymmetric use against strong surface navies. Some French thinkers believed it absolutely essential, even directly rendering battleships obsolete, with one going as far as to remark that "either submarines for us or no warships for anyone."[225] Unsurprisingly then, French

[223] Blair, *Silent Victory*, 51.
[224] For a detailed examination of French interwar disarmament attitudes, see: Joel Blatt, 'The Parity That Meant Superiority: French Naval Policy towards Italy at the Washington Conference, 1921-22, and Interwar French Foreign Policy', *French Historical Studies*, 12:2 (1981), 223–48.
[225] Blatt, 'The Parity That Meant Superiority', 238.

delegations noted the strategic interests underlying arguments for abolition, comparing them with past arguments against crossbows and firearms by those disadvantaged by their introduction. In 1922 at the Washington Conference, Admiral de Bon pointedly remarked that only "certain maritime powers sufficiently rich to maintain enormous fleets of war" favoured a full prohibition.[226] Overall, the content of Anglo-American positions retained its imposing legitimacy gap even with its recent allies. Though France, Italy, and Japan rejected unrestricted commerce raiding in principle, they highly valued the submarine outside that role and so strenuously opposed British moves for its abolition internationally and domestically.

While France, Italy, and Japan were less convinced by Anglo-American interpretations, Germany entirely and diametrically opposed them. During the war the submarine became part panacea, part reprisal tool against the blockade, and part path to victory, propping up faltering German morale as the war neared its terminus. This ensured that Entente arguments at the time made no headway. At a more fundamental level the German perspective did not align with British or American experiences, especially in light of the British blockade. For the Germans the blockade was fundamentally immoral—just as from the Anglo-American perspective the sinking of non-combatants was fundamentally immoral—while its toll far eclipsed any costs associated with the submarine campaign. The blockade's 'starvation policy', in Churchill's words, aimed to "starve the whole population—men, women, and children, old and young, wounded and sound—into submission."[227] A British historian, Bryant, placed the number of dead at over 800,000 for the last two years of the war alone, noting the

[226] Quoted in David Stevenson, 'Britain, France and the Origins of German Disarmament, 1916–19', *Journal of Strategic Studies*, 29:2 (2006), 210.
[227] Quoted in Horace Cornelius Peterson, *Propaganda for War: The Campaign against American Neutrality, 1914-1917* (University of Oklahoma Press, 1939), v, 83.

dead were "about fifty times more than were drowned by submarine attacks on British shipping."[228] Against the lived reality of this impact on the entirety of German society, Anglo-American protests over the latter contrasted against apparent blithe indifference towards the former during the war, and throughout its aftermath.[229] British and increasingly American refusals to concede even basic measures surrounding merchant immunity or the necessity of economic warfare whilst pursuing it themselves further reinforced beliefs that their commitments to international law were hollow and self-serving, once more evoking the long held Copenhagen complex.[230] All of which served to solidify German interpretations in stark opposition to the Anglo-American anti-submarine norm.

The exclusion of Germany from international discourses that followed together with repeated attributions of war-guilt only deepened that conviction and ensured that conflicting German and Anglo-American discourses persisted in parallel with minimal crossover or discursive engagement. German positions were not widely considered internationally, while German domestic discourses continued to entirely reject arguments made against submarine conduct, and increasingly international law in general, especially once the 'innocence campaign' gathered steam.[231] The content of international discourse and suggestions of German illegality were reflexively dismissed as war propaganda, while its exclusion meant that its positions were not widely considered internationally. Germany won the battle of history in

[228] Quoted in John Frederick Charles Fuller, *The Conduct of War: 1789-1961. A Study of the Impact of the French, Industrial, and Russian Revolution on War and Its Conduct* (Eyre & Spottiswoode, 1961), 178.
[229] Far from horror at the effects, notable British figures and journalises at the end of the war remarked their satisfaction. One British journalist wrote an article in September 1918 called 'The Huns of 1940', in which he noted with hope that mothers malnourished by the blockade "destined [their children] for a life of physical inferiority". Baden-Powel, of boy scouts fame, expressed his satisfaction that "the German race is being ruined; though the birth rate, from the Germany point of view, may look satisfactory, the irreparable harm done is quite different and much more serious." See: F. W. Wile, 'The Huns of 1940', *Weekly Dispatch*, 1918.
[230] Steinberg, 'The Copenhagen Complex', 23–46.
[231] Hull, *A Scrap of Paper*, Kindle Loc 361.

this regard and, as Hull's argues, "the important point is that the innocence campaign's triumph necessarily obliterated from consciousness the legal interpretation against which [the submarine] struggled with such success."[232] The scope of the distance between discourses and conflicting conclusions rendered them mutually exclusive, or even mutually unintelligible. Consequently, to borrow Sugden's framing, the disparate experiences of the submarine and its role were not "susceptible to analogy" and so impeded the spread of either the Anglo-American submarine norm into Germany, or the German submarine norm outwards, ensuring that contestation failed to penetrate the divide or even tangentially address the legitimacy gap between the two diametrically opposed positions.[233]

The views of German society were strongly reflected by her Navy. Attitudes towards submarine commerce raiding shifted considerably between the wars, but did so for technical and doctrinal, not moral, reasons. The Kriegsmarine never entertained the Anglo-American stigma surrounding its past commerce raiding, retaining a belief in its honour and legitimacy throughout the interwar years. The role of the U-boat was instead shifted by other logics. A central factor was assumptions surrounding the effectiveness of convoy tactics and improved British detection capability.[234] As one memo in 1939 put it, "the importance of U-boats has considerably declined compared to 1915. One can assume that England has good detection gear, which makes torpedo attacks on a secured unit of convoy impossible."[235] Donitz persisted as a lone voice arguing submarine commerce raiding's merits—notably without

[232] Hull, *A Scrap of Paper*, Kindle Loc 361.
[233] Sugden, 'Spontaneous Order', 93.
[234] Interestingly, the belief in improved British detection methods was the result of deliberate deception on the part of Britain hoping to dissuade potential adversaries from pursuing submarines. See: Joseph A. Maiolo, 'Deception and Intelligence Failure: Anglo-German Preparations for U-boat Warfare in the 1930s', *Journal of Strategic Studies*, 22:4 (1999), 55–76.
[235] Williamson R. Murray and Allan R. Millett, *Military Innovation in the Interwar Period* (Cambridge University Press, 1996), 225–26.

apparent moral condemnation—and its strategic utility amidst the chorus of Mahanian 'big ship' fanatics.[236] As in France, Italy, and Japan, the submarine was relegated to a place as a defensive and asymmetric tool but, further reflecting the absence of a stigma, as the war drew near sober realisations from war games following the Czech crisis began to reassert the necessity of commerce raiding along with a belief that "warfare against commercial shipping according to prize rules [would be] impossible."[237] The Kriegsmarine's answer at the time was pocket battleships, but chiefly due to the small number of U-boats being insufficient for a decisive impact, not a normative stance.

The international discourse without German involvement illustrates the remaining legitimacy gap even amongst those broadly aligned in-principle against submarine commerce raiding. International contestation failed to fill the legitimacy gap at the normative level and at the practical level failed to resolve the major questions left open by the war. French, Italian, and Japanese objections to full prohibition rendered it clearly untenable. Undeterred, Britain and the US chose to instead pursue a *de facto* ban on submarine commerce raiding through onerous terms in articles intended to clarify the legal obligations and constraints surrounding the behaviour. French, Italian, and Japanese opposition was centred—at least superficially given later Italian conduct in the Spanish Civil War—on maintaining the submarine for purposes other than commerce raiding, and with Germany still excluded, this route circumvented the obvious deadlock between positions. However, it also meant that rather than unravelling the knot at the root of that divide and the conceptual mess surrounding submarine commerce-raiding, or arriving at meaningful inter-cultural concordance on the

[236] Murray and Millett, *Military Innovation in the Interwar Period*, 224.
[237] Raeder, writing in February 1937. Quoted in Murray and Millett, *Military Innovation in the Interwar Period*, 224–25.

appropriate status of the submarine, contestation failed to generate well-understood or nuanced guidelines. Consequently, should submarine commerce raiding resurface for any reason—which as I discuss below was highly likely—there was no robust norm to govern the behaviour as the legitimacy gap remained.

To best examine the international discourse on the subject I briefly consider the course of the two most significant regulatory discourses: the Washington Naval Conference and the London Protocol.

The Washington Naval Conference

Anglo-American efforts to circumvent the legitimacy gap during the period of German exclusion and to enshrine the Anglo-American norm in formal international law are well illustrated by the proceedings of the Washington Naval Conference in 1921-22. The indomitable 76-year-old Secretary of State and War Elihu Root headed the American delegation. Root had two objectives. First, he proposed clarifying the rules applicable to the submarine. In effect, his first two articles reasserted visitation requirements prior to sinking, and did so without alteration or accommodation for the risks to submarines in adherence. This was an immediate problem, as noted by one Italian delegate, in that no distinction was made between armed and unarmed merchants. Britain studiously maintained that the 'defensive' arming of its merchants and active resistance to attempted visitation—by armament or simply by ramming—were fundamental rights, ensuring strong British objections to any limitations. Germany, meanwhile, had argued with good reason that this was too great a risk, and justified sinking without visitation as a military necessity. There was

support for both positions in traditional maritime law. Article 48 of the Declaration of London, for example, required returning neutral vessels to port before consigning their goods—amounting to visitation—but also stated that if capturing the ship "[involved] danger to the safety of the warship or the success of the operation in which she is engaged at the time" permitted its destruction. Root deftly avoided any clarification in going as far as asserting a merchant's right to arm while declining to say whether they sacrificed immunity by doing so.

Root's second objective was a *de facto* ban. To accomplish this he included a third article equating breach with an act of piracy and attracting a matching response—typically hanging. Piracy as metaphor for unrestricted submarine warfare was already common well before Root introduced it to the regulatory discussions. References to submarine conduct as piracy peppered British and American discourse, reflecting the stigma underpinning the Anglo-American norm.[238] Nevertheless, this third article "virtually prohibited the U-boat from operating as a commerce raider …"[239] Piracy as penalty not only contradicted a host of surrounding legal concepts, but was the harshest penalty available. It flaunted traditional legal definitions of piracy implying those actions not backed by a state and instead undertaken for personal enrichment, while also pre-empting a state's rights to try their own personnel and presumably subjected captured submarine captains/crews to summary judgement from their would-be quarry. Accordingly, one critique of Root's proposal succinctly charged that "the article approaches the absurd."[240] In that absurdity lay Root's wider objective. He aimed for states to "recognise the practical impossibility of using submarines as commerce

[238] See: Redford, *The Submarine*, chap. 3.
[239] Richard Dean Burns, 'Regulating Submarine Warfare, 1921-41: A Case Study in Arms Control and Limited War', *Military Affairs*, 35:2 (1971), 57.
[240] Dorothy Trautwein Groeling, 'Submarines, Disarmament and Modern Warfare' (unpublished PhD Thesis, Columbia University, 1935), 120; See also: Cooper Morris Jr., 'The Future of the Submarine in International Law', *United States Naval Institute Proceedings*, 48:3, March 1922.

destroyers without violating … the requirements universally accepted by civilized nations for the protection of lives of neutrals and non-combatants, and to the end that the prohibition of the use of submarines as commerce destroyers shall be universally accepted as a part of the law of nations."[241]

This was sufficient for the British whose primary concern was commerce raiding, and with dogged persistence from Root the articles endured without major alteration, being shelved, or otherwise deadlocked. With the addition of a routine amendment requiring universal assent, the rules were signed in early 1922 by the US, Britain, France, and Italy. France, however, then failed to ratify the sub-treaty due in no small part to its more 'absurd' piracy-related provisions, to the relief of submariners everywhere.

The London Protocol

Following several minor discussions in the interval, submarines were revisited eight years later in 1930 at the London Naval Conference. Here, Britain and the US finally succeeded in institutionalising a *de facto* ban on commerce raiding. With France and the other major states still holding the line on full prohibition, the US and Britain once again moved to secure a *de facto* ban serving normative and strategic interests. The contentious provisions invoking piracy eight years earlier were dropped, and consensus during the conference converged on a reassertion of something broadly resembling cruiser rules.[242] The discussions produced some accommodations surrounding persistent refusals to stop and permitting sinking upon

[241] Quoted in Burns, 'Regulating Submarine Warfare, 1921-41', 57.
[242] For a more detailed account of the proceedings, see: Burns, 'Regulating Submarine Warfare, 1921-41', 56–63.

active resistance to visit, but these were minor concessions at best.[243] The following was proposed and ultimately ratified as a part of the London Naval Treaty:

> The following are accepted as established rules of International Law:
>
> 1. In their action with regard to merchant ships, submarines must conform to the rules of International Law to which surface vessels are subject.
>
> 2. In particular, except in the case of persistent refusal to stop on being duly summoned, or of active resistance to visit or search, a warship whether surface vessel or submarine, may not sink or render incapable of navigation a merchant vessel without having first placed passengers, crew, and ship's papers in a place of safety. For this purpose, the ship's boats are not regarded as a place of safety, unless the safety of the passengers and crew is assured, in the existing sea and weather condition, by the proximity of land, or the presence of another vessel which is in a position to take them on board.[244]

These rules were then reiterated without significant change and spun off into an independent agreement with perpetuity during the Second London Naval Conference (1935-36) as the London Protocol on Submarine Warfare.

[243] Both required the submarine to surface and approach, and so expose themselves to the same major vulnerability which doomed cruiser rules in the first place.
[244] Part IV, Article 22 of the London Naval Treaty of 1931.

Remarkably, the London Protocol succeeded despite the collapse of the remainder of the second conference and disarmament hopes as a whole. As the sole protocol emerging from the conference it attracted the signatures of Russia, the US, France, Italy, Great Britain, Japan, and thirty additional countries. Included among the signatories was Germany, who had by this point renounced Versailles and was well into a covert-then-overt rearmament program including a new submarine force. Having finally joined the international discussions over the submarine's regulatory fate, Germany appeared to join the other major states in rejecting commerce-raiding. Yet Germany's assent was expressly strategic and did not reflect any kind of serious commitment to the rules. It came at the same time as the conclusion of the Anglo-German Naval Agreement which—either by way of a mistaken translation or simple oversight—officially freed Germany from the constraints of Versailles with official British support. Instead, signing the London Protocol was an empty gesture as a means to that end. Donitz would claim after the war that he was never consulted on the Protocol at all, further suggesting it was a purely political move.

Nevertheless, the London Protocol stands out among the interwar efforts. As other measures during the same period struggled or collapsed, the cruiser rules compromise it codified found repeated agreement from the major powers including all of the soon-to-be-belligerents. Cruiser rules as applied to submarines were thus strongly codified into international law with clear specificity and apparently strong concordance as far as signatures and ratification went. Moreover, that concordance then produced highly visible signs of support as the war drew near. Substantial diplomatic pressure resulted in the cessation of covert Italian submarine commerce-raiding during the Spanish Civil War, despite the generally tepid responses of the

League of Nations otherwise.[245] Overall, it appeared that contestation to institutionalise Anglo-American objections to submarine commerce raiding were successful.

Practical effects of circumventing the legitimacy gap

Beyond the obviously limited concordance, given German exclusion from international discourse and active rejections of Anglo-American positions domestically, two glaring flaws existed in the apparent success of the London Protocol. First, the London Protocol was the antithesis of nuanced guidelines. It was not just incapable of governing submarine commerce raiding should it arise, but practically guaranteed that it would through ensuring the same points of legal contention remained. Second and especially troublesome given the failure to address the first issue, maintaining the almost absolute protections for merchants from an earlier period meant that the resulting rules were a particularly poor fit with behavioural expectations in other areas of warfare, and they were incongruent with surrounding norms. In effect, by steering regulation towards a ban by other means without resolving the legitimacy gap, the underlying tensions that brought the collapse of maritime norms in 1914 remained in 1938.

The London Protocol's rules were, per Root and the British delegation's intent at the 1922 conference, the express antithesis of usable nuanced guidelines. By offering something amounting to a simple ban then attempting to compensate for their weak specificity by imposing harsh penalties, no nuanced rules were devised to account for the actual conduct

[245] See: Willard C. Frank, 'Politico-Military Deception at Sea in the Spanish Civil War, 1936–39', *Intelligence and National Security*, 5:3 (1990), 84–112.

of submarine interdiction of commerce. Specifically, the Protocol failed to clarify the status of merchants in a variety of conditions, nor what those statuses meant for interdiction. The questions surrounding armed and unarmed merchants that Root so deftly dodged were one such area. Other areas of confusion included the status of merchants in convoy or carrying war materiel under neutral flags. Language suggesting that merchants 'participating in hostilities' voided their immunity discussed in the 1930s represented a partial effort to bridge this gap, but no definitions were offered on what constituted 'participation' or 'hostilities'.[246] Moreover, the legitimacy of 'war zone' and 'vital-interest' framings used to justify any and all sinkings and seizures—regardless of any other considerations—by both sides remained unaddressed.[247] Presence within such a zone removed standing protections outright, or so proponents argued. If that were the case, the declaration of a war zone of vital-interest rendered all other discussions moot. That these fundamental questions remained unaddressed in submarine articles did not go unnoticed.[248]

Conversely, where the definitions, constraints, and obligations of merchants remained generously ill-defined, the bounds on submarines were strict. Exercising visiting rights in accordance with cruiser rules under those terms still meant adopting impractical, if not suicidal, levels of risk given submarines' fragility and reliance on stealth.[249] Surfacing close to a potentially hostile vessel to conduct visitation was extremely hazardous. Ramming alone

[246] See: Burns, 'Regulating Submarine Warfare, 1921-41', 59.
[247] Germany, as discussed in the previous chapter, carefully selected a 'war zone' framing to diminish constraints on the submarine. The British did something similar in pursuing the blockade. In August 1914 Admiralty orders consigned all food-stuffs destined for Germany or Rotterdam forfeit. This too sought to diminish or circumvent international law and the freedom of action of neutrals as suited the belligerent. See: Baron Patrick Devlin, *Too Proud to Fight: Woodrow Wilson's Neutrality* (Oxford University Press, USA, 1975), 193, 195.
[248] See, for example, Lieutenant HG Rickover, 'International Law and the Submarine', in *United States Naval Institute Proceedings*, 1935, LXI, 1213–27.
[249] Rickover, 'International Law and the Submarine', LXI, 1223.

could easily sink a submarine as could even a modest concealed deck gun—both of which the British asserted as guaranteed rights. The risks extended further still as the simple act of communicating a submarine sighting, as British merchants had under Admiralty orders in WWI, meant the convergence of submarine hunters, depth charges, and great peril. In effect, there were no feasible means for submarines to interdict merchants while remaining within the terms of the London Protocol. Rickover, an American Admiral and frequent technical consultant at many interwar conferences, succinctly captured the resulting tension in 1935:

> The conclusion is inevitable that, except in rare circumstances, it is impossible for the submarine to carry on commerce warfare in accordance with international law as it stands today. Consequently, states must either renounce this weapon as a commerce destroyer or undertake a revision of the laws governing naval warfare, taking into account the changed conditions of modern war and the appearance of new weapons capable of operating under water and in the air.[250]

In other words, the rules and their expectations were unreasonable and brittle. With the terms defined so onerously for submarines, yet permissively for merchants, even a good faith effort to abide by them was sure to breach their terms by mistake if nothing else. Simultaneously, the risk to submarines in attempting to observe the rules remained untenable. This led Admiral George Day to state plainly before Congress that the London Protocol "…is entirely worthless. … It leaves definitions so indistinct, so indefinite, that not two belligerents will agree as to what happened on any given occasion."[251] In effect, despite

[250] Rickover, 'International Law and the Submarine', LXI, 1219.
[251] US Senate, Hearings Before the Committee on Naval Affairs, "London Naval Treaty of 1930," 71st Cong., 2nd Sess. (Washington, 1930), pp. 342-43

the extensive contestation, the same ambiguity over submarine-commerce interactions present before WWI still existed.

Rickover's remarks also indicate the second area of weakness—incongruence with wider shifts in warfare. This was particularly significant given the role of norm congruency detailed in Chapter 1. The expectations the rules enshrined contradicted the demands of modern warfare, and critically, demands accepted in other areas. The growing purpose of war, in the words of US Rear Admiral Rogers was as follows:

> Wars in general are national efforts to establish economic international advantage. The world war was a commercial and industrial war. … The usual objective of war is then to reduce the enemy to a tributary status to the advantage of the victor. … The combative effort to overcome the enemy and reduce him to some form of economic subjection ....[252]

He continued:

> Destruction of hostile property and the enemy's economic means of livelihood will be as efficient in subduing him as bloodshed. Thus attack on property has always appeared as a norm and reasonable form of warfare; but owing to the developments of the last half century in the specialisation of industries and the extension of commerce and transportation, the control of commerce is relative a far more effectual way to conquest than it was fifty years ago. The necessity for bloodshed has diminished as commerce has

[252] William L. Rodgers, 'Suggestions as to Changes in the International Law for Maritime War', *American Journal of International Law*, 17 (1923), 2.

> become extended and more nationalised, and so the possibilities of a more humane form of war of conquest have become augmented.[253]

Inviolate projections for commerce and economic activity were diminished in other areas and even possibly inhumane as they prevented the pursuit of a less bloody *and* more efficient path to victory. Moreover, one of the key lessons of WWI was that direct battlefield victory was not necessarily possible or desirable given the catastrophic cost for all involved regardless of the victor. Commerce-raiding appeared a strategic and humane imperative. As its importance grew, so too necessarily did the proportionality in endangering merchant crews. A state compelled to fight a protected war against a stronger naval power was therefore strongly compelled to abandon the rules altogether as they precluded an essential strategic pursuit. In other words, commerce raiding, including submarine commerce raiding, was a strong strategic fit. However well a *de facto* prohibition aligned with Anglo-American strategic and doctrinal interests, it sharply contradicted the face of modern war for many other states. The same fundamental logics used to justify possible harm to merchant crews were already in widely accepted use elsewhere to justify probable harm from bombing to those simply living near a warehouse, factory, or transport artery.

In sum, contestation during the interwar period followed from experiences and understandings gained from the war, and was subject to sharply divergent interpretations of the lessons learned. Where Britain and the US saw an unacceptable 'weapon of piracy and murder', Germany saw a legitimate means of economic warfare under the necessities of industrial war. Other states, meanwhile, arrived at a position somewhere in between. Contestation aiming to unify those positions then faltered repeatedly as states' divergent

[253] Rodgers, 'Suggestions as to Changes in the International Law for Maritime War', 3.

interpretations of the submarine proved irreconcilable, informed as they were by unshared experiences. Thus, the legitimacy gap between the various normative suggestions remained and the *de facto* prohibition realised in its stead harboured major weaknesses and inconsistencies pursuant to the nature of its creation.

Contesting aerial bombardment

Bombing emerged from WWI was a prominent menace in the public mind. Though the campaigns during the war were limited in scale and duration, they were simultaneously tantalising and terrifying glimpses into the future. Moreover, experiences of bombing were for the most part shared—the same inaccuracy and technical challenges plagued both sides, just as they had both suffered the same functionally indiscriminate effects of city bombing by war's end. Where stark and irreconcilable divergences marked the discourses surrounding the submarine, states approached bombing with relative parity in experience and understanding.

However, aerial bombardment—and aviation with it—remained highly novel even after initial use, which presented its own effects on contestation as a process. The war ended before the first major attempt at a strategic bombing campaign and the limited airborne wartime interactions outside the strategic domain were tentative at best. The fundamental and technical understandings of flight were also rapidly changing in the face of technological and conceptual development. The potential future of aviation in war remained almost as murky with potentially boundless applications as it was before the war. Attempts to parse and restrict aerial bombardment between the wars proceeded with gusto, but encountered the same essential barrier present at The Hague: profoundly limited understanding of flight. This

manifested itself in two ways. First, states were only a little more able to develop a bombing norm's specificity than they were at The Hague in 1899 when contemplating balloons. Second, despite sharing an in-principle belief in discrimination as applied to the air, the tremendous persisting uncertainty (domestically and internationally) ensured that each state arrived at their own unique version of what that principle should mean and a pervasive legitimacy gap remained between states' various interpretations. When it came to contesting the functionally indiscriminate bombing practices that were effectively normalised during the war the task was all but impossible.

Examining the course of contestation and the effects of the persisting novelty requires consideration of two modes of contestation identified above and in Chapter 1: international discursive engagement, and social practice surrounding implementation. Each of these engaged with the lessons of the war and attempted to reconcile the shape of future air war, with efforts to narrow the scope of permissible bombardment failed in each case for various reasons, leading to a second failure to advance the content of the bombing norm beyond its outlines, just as before WWI.

International discursive engagement

Two immediate lessons from WWI shaped ideas of bombing throughout the interwar years. First, the sheer scale of the violence—both geographically and numerically—underscored a new and terrifying type of land war that cost the victor as much as the vanquished. States were driven to alternatives that would avoid another war of attrition, in which bombing would feature prominently as it promised victory without the costs of the contemporary battlefield.

Second, even the limited scope of the strategic bombing campaigns had substantiated the concerns at The Hague from shared experiences of their functionally indiscriminate effects. These had demonstrated city bombing as the logical end of strategic aerial warfare with further hints at major morale effects disproportionate to direct military effectiveness. Combined, these factors ensured a prominent place for the bomber in both strategic and normative discourses between the wars. Some found solace in the hope that deterrent bombing forces might arise from both discourses in tandem, given that unilateral prohibition was infeasible and 'mere scraps of paper' were unreliable, but for most this was an object of grave concern.

Accordingly, a clear and strong desire for either the prohibition or regulation of aerial bombardment substantiated by the experiences of the war persisted throughout the interwar years. The initial legitimacy gap was substantially narrowed as a result and the path to accomplish regulation in response to that fear seemed relatively straightforward. Neither side had formally abandoned the outlines of the incomplete bombing norm and loudly maintained the 'discriminate' nature of their own campaign, meaning that new regulation translating their shared in-principle commitments meshed well with existing rhetorical and political positions. It could serve as mutual refinement from an existing position in recognition of shared experiences, not repudiation or recrimination for the wartime conduct it referred to. Together with ample public fear and wider disarmament enthusiasm this seemed fertile ground for the contestation of city bombing.

However, although the legitimacy gap was narrowed by shared experiences and in-principle commitments to discrimination, translating that to specific and concordant regulation of a still extremely novel form of innovative warfare remained fundamentally hampered by the

wide range of interpretations with no apparent path to fill the legitimacy gap between them. Despite the additional experience and understanding gained from first-use, the scope and scale of the task of unravelling a new spatial and conceptual domain was simply too large and the proposed answers simultaneously too numerous and too far apart. As a result, international contestation, and regulation along with it, failed to meaningfully advance norm specificity or untangle the complicated conceptual mess that arose over legitimacy of targeting from the air. This is best illustrated through a brief examination of the three primary sites of international discourse: Versailles, The Hague Commission of Jurists in 1923, and last-ditch efforts including the Geneva Disarmament Conference during the 1930s.

Versailles

The Treaty of Versailles contained the first regulatory measures attempting to grapple with this challenge, providing a first glimpse into the difficulties. As in other areas, the harsh measures at Versailles were hoped to be the first step towards wider disarmament. For aviation, the so-called Nine Rules included measures that prohibited any 'military' aircraft. The definition stipulated any aircraft with an air speed over 170km/h, service ceiling above 13,000 feet or a "useful load of more than 600kgs."[254] Germany, naturally, studiously sought to avoid these constraints and highlighted a major problem in doing so: verification and enforcement. Inspection clashed directly with sovereignty and outside the exceptional

[254] Kennett, *A History of Strategic Bombing*, 63.

circumstances of Versailles it is difficult to imagine many states entertaining inspections during the period.

As was swiftly realised, the gap between civilian/commercial and military aviation was incredibly small. This had two effects. First, it enabled Germany to circumvent the constraints by creating 'civilian' aviation clubs to train pilots and explore new technical developments almost regardless of Versailles—but the weight, speed, and height limits remained.[255] Second, the ease of using of civilian freight or transport aircraft for bombing required that those constraints crippled commercial applications.[256] This effectively shut the door on aviation progress within Germany, and though in keeping with the generally punitive nature of Versailles, these measures were eventually abandoned in the late 1920s in response.[257] Thus, the first attempts at restricting aviation failed and were a cautionary tale for the task of imposing even simple measures.

The Hague Commission of Jurists

The Washington Conference on the Limitation of Armaments in 1922 was the next attempt at international regulatory consideration. Following common recognition that "defence as a test for the legitimacy of an air attack [was] entirely inadequate," in keeping with the disarmament theme of the period, initial discussions contemplated complete prohibition alongside measures similar to those directed at submarines and gas warfare.[258] However, for

[255] Legro, *Cooperation Under Fire: Anglo-German Restraint During World War II*, 2559.
[256] Many bombers which survived the war were directly converted into civilian transport aircraft with minimal modification. The reverse was equally possible.
[257] See: Kennett, *A History of Strategic Bombing*, 63.
[258] Williams, 'Legitimate Targets in Aerial Bombardment', 573.

aviation the nations present agreed that it was "not at present practicable to impose any effective limitations upon the numbers or characteristics of aircraft, either commercial or military."[259] Prohibition, it became clear, was not a viable route. As Williams aptly noted:

> It is inconceivable that such an efficient weapon as the aeroplane will ever be laid aside for humanitarian reasons. It is a question of then drafting suitable rules. If they are to commend themselves to observance by fighting men, they must be based as much on considerations of military expediency as upon considerations of humanity. Each rule must, therefore, be subjected to this double test, if it is to have any hope of being adopted, or of being followed when once adopted.[260]

Noting that the limited time available was far from sufficient for a full discussion, attending states chose to defer the matter to a subsequent conference with an agenda to address a) whether the existing Hague rules adequately covered new developments, and b) what alterations were required assuming they did not.

The Hague Commission of Jurists in 1923 took up that task and represented the primary effort towards devising a regulatory framework between the wars. Reflecting the wider public alarm, the commissioners were particularly forthcoming on their distinctly negative attitudes towards the bombing of the war. One remarked that "the conscience of mankind revolts against this form of making war outside the actual theatre of military operations, and the

[259] Parks, 'Air War and the Law of War', 24.
[260] Williams, 'Legitimate Targets in Aerial Bombardment', 571.

feeling is universal that limitations ought to be imposed."[261] Clearly, the will was present and backed by strong disarmament pressure.

However, though the attending states agreed that The Hague rules were inadequate and shared wider commitments to non-combatant immunity, the combination of novelty and their respective strategic considerations prevented them from devising a serviceable replacement. Moving beyond even those initial positions faced major problems. Royse noted the inherent difficulty in adapting between domains of war as was attempted prior to and during the war, stating in 1928 that:

> Fundamental in the regulation of warfare is the fact that the employment of each major weapon brings about the restrictions or limitations upon its use … Thus, to attempt to regulate aerial bombardment by the customary practices which have grown out of land or naval warfare is to lay down a set of artificial regulations which will hardly stand the strain of war.[262]

As aviation introduced a new spatial dimension and the dramatic expansion of strategic activity, it required the creation of international law almost *de novo* to unravel the complexities of warfare on two new scales. The core principles of discrimination and proportionality offered a starting point but little more, as their wider application was itself fraught with change and doubt amidst recognition that the industrial and national aspects of warfare necessities clouded matters further, while also clashing with disarmament objectives. Attracting robust and concordant support meant the interwar discourse needed to devise workable rules comparable with constraints imposed in other domains, evenly applicable to

[261] Quoted in Kennett, *A History of Strategic Bombing*, 64.
[262] Royse, *Aerial Bombardment and the International Regulations of Warfare*, 239.

all actors, in all circumstances, applied permanently to a rapidly changing and developing domain that was still largely a mystery. This was simply too great a challenge.

Further hampering this already nigh-on impossible effort was that each state approached aerial bombardment differently, subject to its own interpretations, interests, and informed extensively by its own strategic position. I return to strategic perspectives later, but for the moment it is sufficient to note, as Admiral Rodgers did, that "each nation seemed chiefly guided by the principle of promoting its own national policies, and its position in the world. … Each national delegation was a unit in standing for a code which should favour its national situation."[263] The effect was that each state sought to square this circle in its own equally bespoke way. Unsurprisingly, there was an immediate sticking point: "[determining] the conditions under which the bombardment of objects, intrinsically liable to attack, was to be forbidden when they were found in centres of population."[264] Some states sought to ban all bombardment outside the immediate war zone—notably Japan and the Netherlands with concentrated populations—while others preferred limiting attacks further afield to a heavily limited range of targets to avoid a repeat of *de facto* city bombing—the US chiefly. These divergent starting points proved irreconcilable.

Nevertheless, and certainly conscious of the enormity of the task, initial discussions focused on draft rules provided by the US and British delegates. These rules contained notable and expansive constraints on bombing but they too represented another hurdle in the path of effective contestation. The expansive nature of those constraints arose from internal inter-service competition for resources hoping to hobble aerial bombardment, not from wide

[263] William L. Rodgers, 'The Laws of War Concerning Aviation and Radio', *The American Journal of International Law*, 17:4 (1923), 633.
[264] Parks, 'Air War and the Law of War', 28.

agreement to their terms. Shrinking defence budgets of the post-war period amplified inter-service competition resources, and the naval officers who wrote the draft rules in question did so with attention to the inter-service and budgetary pressures that growing air power represented.[265] The British and American navies, for example, considered aircraft primarily as a scouting tool and cared little for constraints on bombing, but also saw advantage in limiting a behaviour that threatened to displace naval bombardment. Thus, the already troubled primary locus of international discussion began from a position designed not to resolve the complicated matter of aerial bombardment in an even-handed way, but in response to inter-service competition within interested states.

Following referral to a subcommittee and further extensive debate on the main floor, the agreed final wording of the articles directly related to governing bombardment was as follows:

> **Article 22:** Aerial bombardment for the purpose of terrorizing the civilian population, of destroying or damaging private property not of military character, or of injuring non-combatants is prohibited.
>
> **Article 23:** Aerial bombardment for the purpose of enforcing compliance with requisitions in kind or payment of contributions in money is prohibited.
>
> **Article 24:** (1) Aerial bombardment is legitimate only when directed at a military objective, that is to say, an object of which the destruction or injury would constitute a distinct military advantage to the belligerent.

[265] Parks, 'Air War and the Law of War', 27–31.

(2) Such bombardment is legitimate only when directed exclusively at the following objectives: military forces; military works; military establishments or depots; factories constituting important and well-known centres engaged in the manufacture of arms, ammunition or distinctively military supplies; lines of communication or transportation used for military purposes.

(3) The bombardment of cities, towns, villages, dwellings or buildings not in the immediate neighbourhood of the operations of land forces is prohibited. In cases where the objectives specified in paragraph (2) are so situated, that they cannot be bombarded without the indiscriminate bombardment of the civilian population, the aircraft must abstain from bombardment.

(4) In the immediate neighbourhood of the operations of land forces, the bombardment of cities, towns, villages, dwellings or buildings is legitimate provided that there exists a reasonable presumption that the military concentration is sufficiently important to justify such bombardment having regard to the danger thus caused to the civilian population.

Despite the commissioners' best efforts, these articles were deeply flawed reflecting the tremendous difficulty of regulating an unknown spatial and conceptual domain. Article 22 sought the total prohibition of morale effects, and also did so in a manner that would not have prevented the WWI behaviour it sought to address. Morale effects during the war were not considered a direct 'purpose' but an additional ancillary effect and therefore beyond the scope of the article. The pursuit of ancillary morale effects was believed to be a legitimate component of conventional bombardment as a necessary military avenue towards breaking

the will to resist—as discussed in Chapter 2. Thus, Article 22 was simultaneously ineffective and inconsistent with other domains.

Article 24—which carried the bulk of the specific rules—then also proved incredibly difficult to interpret. It rested heavily on the undefined 'military objective' and against a similarly ill-defined concept of military advantage. Neither line was easy to draw or particularly well understood, let alone with consistency, between would-be belligerents. Though the article included a listing, it was inconsistent with established and legitimate wartime practice as well as accepted behaviour in other forms of bombardment. Spaight devoted several pages to detailing a range of legitimate targets attacked in WWI which would be prohibited under its terms, including many major industrial sites with direct war impact such as steel, petroleum, motor, and other manufacturing sites.[266] But viewed through the eyes of planners, it represented an unacceptable constraint on a key and militarily effective activity. As Trenchard wrote five years later:

> To attack the armed forces is … to attack the enemy at his strongest point. On the other hand, by attacking the sources from which these armed forces are maintained infinitely more effect is obtained. In the course of a day's attack upon the aerodromes of the enemy perhaps 50 aeroplanes could be destroyed; whereas a modern industrial state will produce 100 in a day—production will far more than replace any destruction we can hope to do in the forward zone. On the other hand, by attacking the enemy's factories, then output is reduced by a much greater proportion.[267]

[266] Spaight, *Air Power and War Rights*, 233–35.
[267] Quoted in Charles Kingsley Webster and Noble Frankland, *The Strategic Air Offensive Against Germany: 1939-1945* (HM Stationery Off., 1961), I, 74.

Article 24 completely inverted existing ideas by assigning some measure of responsibility for civilian casualties to the attacker. Though uncontroversial today, this was a dramatic adjustment from 'defended town' standards which was to be applied only to aircraft, rendering it another incongruent change. It was also particularly ill-defined. What constituted 'sufficient' importance, or 'indiscriminate' within the terms of the articles remained unclear, and would do so until the 1977 Additional Protocols to the Geneva Convention. Furthermore, the attacker possessed only partial control over the conditions surrounding the defender, therefore bearing direct responsibility for outcomes it could not influence. Finally, 24(4) was perceived as limiting aerial bombardment to within artillery range, offering another unacceptable constraint from the perspective of states interested in bombing's strategic utility—which is to say, all of them.[268] As Williams argued:

> It is inconceivable that nations which have come to regard the air service as a major means of attack will forgo the advantages derived from their predominance in that respect … If states generally are not willing to forgo the use of advantages which they may be able to obtain from superiority in the air, then it is quixotic to draft a code which drastically curtails the operations of the aeroplane.[269]

As a result, "the 1923 Hague Air Rules suffered an ignominious death, doomed from the outset by language that established rules for black-and-white situations in a combat environment permeated by shades of grey."[270] Though they certainly defined expansive protections for civilians, the manner in which they did so came at a heavy cost. Condemnation

[268] Parks, 'Air War and the Law of War', 32.
[269] Williams, 'Legitimate Targets in Aerial Bombardment', 577–78.
[270] Parks, 'Air War and the Law of War', 35.

was widespread, no state ever adopted the Jurists' rules and they disappeared into obscurity over the coming years. The 1923 efforts were effectively the first, last, and only detailed attempt towards regulating aerial bombardment between the wars.

Last-ditch efforts

Following 1923, states intermittently expressed interest in various forms of regulation but these were frequently contrived or otherwise insubstantial given the scope of the task, as they continued to approach the issue without even basic agreement. At Geneva in 1934, much as in 1923, "each nation wanted the swords to be beaten into ploughshares in a certain way, and this was the rock on which the conference ultimately floundered."[271] For example, Germany, who was still disarmed under Versailles, sought 'equality of rights' meaning the right to rearm themselves or that everyone else should match its disarmament. The British were broadly open to the idea of disarmament in Europe, but with the reservation that they retained bombing "for police purposes in certain outlying regions," i.e. to maintain 'air control' over the empire, which few others were prepared to accept.[272] The French were happy to grant the German wish for mutual disarmament, but wanted a powerful international police force under the League of Nations in exchange. Meanwhile, the US under Hoover at one point proposed scrapping all military aircraft save for naval observation. Ultimately, none of these proposals addressed the core issue, devised workable rules to govern aerial bombardment, nor stood a chance of concordant agreement. States' positions

[271] Kennett, *A History of Strategic Bombing*, 69.
[272] Quoted in Thomas, *The Ethics of Destruction: Norms and Force in International Relations*, 116.

were again worlds apart and they could find no common path to realise even the beginnings of a regulatory outcome. The conference and disarmament ended for naught following Germany's withdrawal in 1933.

Except for a Machiavellian and doomed unilateral proposal from Hitler to ban strategic bombing in 1935, prohibition and regulation increasingly fell from the international agenda as states ramped up rearmament and focused instead on deterrence. Remaining hopes for the limitation of bombing faded quickly, and were finally dashed entirely by Hitler's Reichstag speech in February 1938. With the failure of formal regulation clear, two last-minute appeals closed out attempts to advance the regulation of aerial bombardment internationally. Chamberlain appealed for the following in the House of Commons in September 1938:

> 1. It is against international law to bomb civilians as such and to make deliberate attacks upon civilian populations.
>
> 2. Targets which are aimed at from the air must be legitimate military objectives and must be capable of identification.
>
> 3. Reasonable care must be taken in attacking those military objectives so that by carelessness a civilian population in the neighbourhood is not bombed.

The first provision again reflected civilian protection as the outline of the bombing norm. The second and third rules attempted to fill its content with a biased toward the defender and resting entirely on good-faith interpretations.[273] These statements were reasonably positively received internationally, as far as the tense period allowed, and were adopted by the League

[273] Parks, 'Air War and the Law of War', 36.

of Nations. However, the rules remained unbinding and by this point the League was far from a compelling or coercive instrument.

In all, under the weight of endeavouring to parse the entirety of the aerial domain, attempts to regulate aerial bombardment via international agreement failed to reconcile fundamentally conflicting national interests and divergent ideas. Without viable progress, the bombing norm remained as it was in the previous war—functionally empty beyond its general outlines. A final appeal for restraint came on September 1 1939, demonstrating just how little progress had been achieved by international efforts. On the eve of war Roosevelt invoked the much-troubled 'defended town' concept, universally recognised as deeply flawed, calling for each state to "affirm its determination that its armed forces shall in no event, and under no circumstances, undertake the bombardment from the air of civilian populations or of unfortified cities, upon the understanding that these same rules of warfare will be scrupulously observed by all of their opponents."[274]

This is not to say that there were no legal guidelines on expected behaviour, but as Spaight put it "[there are] a multiplicity of laws, as the laws of land warfare applied in some cases, the standards for naval bombardment in others, and the 1923 Hague rules perhaps in some but perhaps not in others. [The result is] a state of baffling chaos and confusion which makes it almost impossible to say what in any given situation the rule really is."[275] Or, as Harris remarked on the eve of war, "in the matter of the use of aircraft in war, there is, it so happens,

[274] Franklin D. Roosevelt, 'The President of the United States to the Governments of France, Germany, Italy, Poland and His Britannic Majesty, September 1, 1939', 1939.
[275] James Molony Spaight, 'The Chaotic State of the International Law Governing Bombardment', *Royal Air Force Quarterly*, 9:25 (1938), 25.

no international law at all."[276] In other words, the international contestation of bombing failed to make any significant headway.

Doctrinal discourses unreceptive to restraint

While international efforts faltered, then collapsed entirely, domestic implementation discourses within military organisations tasked with developing doctrines of air power proved impenetrable to international contestation. Instead, they arrived at much the same conclusion as they had during the war to reject expansive conceptions of restraint in the air, refused to implement meaningful constraints in doctrine, and generally further embedded ideas of functionally indiscriminate city bombing.

Though operating under conditions of considerable novelty comparable to the international regulatory discourses, theorists faced the somewhat simpler task of discerning how to exploit the domain to its fullest in the immediate sense, not how to fairly and evenly limit it in all future scenarios. Doctrinal discourses continued the trend of the war in constructing understandings of air power that emphasised military efficacy over the unspecific and discordant moral concerns on display internationally. Instead of rejecting the bomber or defining meaningful constraints for its use, planners and theorists drew on the lessons of WWI to situate it as the centrepiece of emerging doctrines of air power. In turn, they increasingly interpreted aerial bombardment in such a way as to minimise any remaining moral constraints against attacking cities. As a result, two trends emerged that undermined

[276] Arthur Harris, commander of the RAF through much of the war. Quoted in Hamilton Desaussure, 'Laws of Air Warfare: Are There Any, The', *International Lawyer (ABA)*, 5 (1971), 529.

whatever limited influence the outlines of the international bombing norm might have had in most states; bombardment dominance, and morale bombing. In effect, the imperatives towards strategic bombing were entirely too strong for an ambiguous normative outline to seriously constrain its practice.

Bombardment dominance

Absent new data, aviation theorists between the wars undertook the task of conceptualising air power by extrapolating from Trenchard's ambitious plans for the first full strategic campaign cut short by the end of the war. Their efforts contained several erroneous understandings and assumptions—underscoring the information challenges—but nevertheless produced an expansive vision of air power. Theorists came to believe air power to be entirely and thoroughly offence-dominant, and a conviction grew that offensive bombardment *en masse* was the correct—and even only—viable course of action.

Theorists noted the so-called 'penetrativeness' of the bomber. Not only could it range far and wide, but preventing bombers from doing so appeared effectively impossible. First, the resource requirements for defence against a fully prepared bombing force appeared entirely untenable. Intercepting even the limited German raids of approximately 20 Gothas (the first dedicated multi-engine bomber) against southern England required the deployment of some 270 aircraft and 13,000 men manning searchlights and guns, and then achieved only middling results that failed to prevent consecutive attacks. Brooke-Popham, the RAF Air Vice-marshal, emphasised that "the total number of German aeroplane flights over England was 452; the total number of aeroplane flights made to beat off their attacks was 1,882, over four times as

many."[277] Second, fighter interception faced major challenges. Detecting incoming bombers was unreliable and typically left little to no window for interception. Within that window fighters had to take-off, climb, catch up, and engage before the bombers struck. With the fighters of the time this was practically impossible, while new bombers capable of flying faster and higher appeared inevitable, heightening the challenge in turn. The alternative was an airborne picket or barrier patrolling at all times. Numerous attempts during the war failed, leading a prominent German analyst to conclude that "an air barrier is generally an impossible thing."[278] Third, anti-air gunnery appeared similarly hamstrung. A typical 75mm shell would take approximately 12 seconds to reach a bomber's altitude. The British Ministry of Munitions calculated that to guarantee a hit on an aircraft traveling at 160km/h required firing some 162,000 simultaneous shells.[279] The faster, higher, and more manoeuvrable bombers became, the worse the probability became. Fourth, improved bomber designs appeared increasingly invulnerable. Flying at great heights, speeds, and with considerable defensive armaments to fend off interception, planners based their ideas of bombing doctrine on an assumption of near invincibility.[280] So much so that long-range escort fighters were heavily neglected as they were believed unnecessary and infeasible.[281]

Meanwhile, estimates of bomber effectiveness were staggering. Projections of the efficacy of explosives distributed by air were prominently derived directly from artillery calculations with the assumption that the two were analogous enough for equivalence. For example, Douhet, a former artillery officer, argued that 500 tonnes dropped by air equated to over 10,000

[277] Biddle, *Rhetoric and Reality in Air Warfare*, 73.
[278] Quoted in Kennett, *A History of Strategic Bombing*, 44.
[279] Kennett, *A History of Strategic Bombing*, 46.
[280] Stewart Halsey Ross, *Strategic Bombing by the United States in World War II: The Myths and the Facts* (McFarland, 2002), 48–50.
[281] Robert A. Eslinger, 'The Neglect of Long-Range Escort Development During the Interwar Years (1918 -1943)' (Air Command and Staff College (US), 1997).

305mm artillery shells, supposing a fleet of 1,000 bombers could deliver this nightly.[282] A French ace, Fonck, suggested that a 4,400-pound bomb would destroy everything in a 165-ft. radius, and that 500 bombers carrying these could level 247 acres a night.[283] This suggested bombardment was tremendously destructive, swift, and easily repeatable night after night.

If bombers were unstoppable, and their effects tremendous, offence was the only viable strategic path. Trenchard, in his post-war role as the first Chief of RAF Air Staff remarked soon after the armistice that he must "try to educate everybody to think as I do, i.e. that if we bomb them harder than they do us this is the best and only defence. … we must not become a defensive force."[284] As the first RAF Chief of Staff in 1921 he argued that "in the offensive lies the surest defence, and it will be necessary to carry the war into the enemy's country, to attack his aerodromes, factories, military and naval establishments and generally force upon him a defensive role."[285] Stanley Baldwin's 1932 speech in the House of Commons while effectively standing in as Prime Minister given then Prime Minister Ramsay MacDonald's ill health—titled *A Fear for the Future*—captured the essence of this:

> I think it is well also for the man in the street to realise that there is no power on earth that can protect him from being bombed. Whatever people may tell him, the bomber will always get through, The only defence is in offence, which means that you have to kill more women and children more quickly than the enemy if you want to save yourselves...If the conscience of the young men should ever come to feel, with regard to this one instrument

[282] Giulio Douhet, *The Command of the Air*, trans. by Joseph P Harahan, Richard H Kohn, and Dino Ferrari (University of Alabama Press, 2009), 260.
[283] Kennett, *A History of Strategic Bombing*, 48.
[284] Quoted from internal memos by Biddle. Biddle, *Rhetoric and Reality in Air Warfare*, 71.
[285] Quoted in: Biddle, *Rhetoric and Reality in Air Warfare*, 71.

> [bombing] that it is evil and should go, the thing will be done; but if they do not feel like that—well, as I say, the future is in their hands. But when the next war comes, and European civilisation is wiped out, as it will be, and by no force more than that force, then do not let them lay blame on the old men. Let them remember that they, principally, or they alone, are responsible for the terrors that have fallen upon the earth.[286]

Collectively, ideas of bombardment dominance ensured two things: first, that states would be even more reluctant to concede major constraints internationally on what was clearly a cornerstone strategic tool, and second, that expansive bombing featured prominently in each state's respective doctrines and rearmament efforts, meaning that the selected offense-dominant strategies strongly influenced construction of the bombing norm where that was the case.[287]

City and morale bombing doctrines shaping the bombing norm

Offence-dominance required states to plan and prepare for massive and immediate bombing campaigns sufficient to win a future war via bombardment, before they lost it via bombardment. Therefore the trend was towards bigger attacks with greater impact. In following this trend, far from responding to international contestation aiming to limit future

[286] Keith Middlemas and Anthony John Lane Barnes, *Baldwin: A Biography* (Weidenfeld and Nicolson, 1969), 735.
[287] For a detailed examination of the respective rearmament efforts, see: Kennett, *A History of Strategic Bombing*, 75–88.

bombardment, many states instead embedded justifications for functionally indiscriminate city bombing directly into their bombing doctrines.

In view of the limitations on accuracy, navigation, and pressures towards a massive 'knock-out' blow, most of the emerging air forces favoured area, city, and morale bombing. In addition to the hoped-for damage against primary industrial, transportation, and communication targets degrading battlefield capability, the believed disproportionate 'indirect' effects on morale featured prominently. Building on Trenchard's somewhat spurious 20-to-1 ratio from the war, and continuing the trend of the 1917 Smuts memorandum, many theorists expanded this thinking in notable and influential works from the likes of Spaight & Royse (British), Fonck (French), Douhet (Italian), and Mitchell (American).[288] Theorists increasingly viewed morale as a central, if not *the* central, aspect of bombardment.

This, of course, had a direct effect on how those states interpreted norms surrounding bombardment. Attacks targeting civilians—directly or indirectly—were central to the strategy and, in the words of Foch, could have "a crushing effect on a nation" such that it constituted a clearly strategic effect.[289] As an apparent direct and decisive path to victory, the wilful bombardment of civilians was believed fully justified in turn by von Moltke's old maxim; 'the greatest kindness in war is to bring it to a speedy conclusion.'[290] Douhet was particularly blunt in this regard, stating that "mercifully, the decision will be quick in this kind of war, since the

[288] See: James Molony Spaight, *Air Power and the Cities* (Longmans, Green & Co., 1930); Royse, *Aerial Bombardment and the International Regulations of Warfare*; Rene Fonck, *Ace of Aces*, ed. by Stanley M. Ulanoff, trans. by Martin H. Sabin and Stanley M. Ulanoff, Air Combat Classics (Doubleday & Co., 1967); Douhet, *The Command of the Air*; Mitchell William, *Winged Defense* (Putnam's, New York, 1925).
[289] Percy Robert Clifford Groves, *Behind the Smoke Screen* (Faber and Faber, limited, 1934), 187.
[290] Michael Walzer, *Just and Unjust Wars: A Moral Argument with Historical Illustrations* (Basic Books, 2006), 131.

decisive blows will be directed at civilians, that element of the countries at war least able to sustain them. These future wars may yet prove to be more humane than wars in the past in spite of all, because they may in the long run shed less blood."[291] Trenchard was more circumspect, framing the RAF's *raison d'etre* in 1928 as "[breaking] down the enemy's means of resistance by attacks on objectives selected as most likely to achieve this end." What he meant was everything from "boots to battleships."[292] Consequently his plans focused on industrial targets usually within cities and did not define standards for civilian protection. Rather, Trenchard argued that the "incidental destruction of civilian life and property" from widely distributed industrial targeting against targets in cities would enhance the attendant morale effects.[293] He further went to great pains to explain this as not "contrary either to international law or to the dictates of humanity."[294] The consequence was the same—the doctrines and justifications of functionally indiscriminate city bombardment from WWI remained firmly embedded.

These ideas did not stand entirely unopposed, however. Neither was morale bombing popular or particularly palatable. Public opinion and many theorists held that attacks against civilians for terror were morally indefensible reflecting the civilian protection norm and international discourses. However, these concerns did not seriously alter the emerging doctrines. Furthermore, some, quite accurately as it turned out, argued that morale effects might be temporary and that sustained exposure would normalise the threat, mitigating the hoped-for morale effects. Spaight noted that "the difficulty is that you may not smash the will to war.

[291] Douhet, *The Command of the Air*, 61.
[292] Kennett, *A History of Strategic Bombing*, 75.
[293] Kennett, *A History of Strategic Bombing*, 76.
[294] Kennett, *A History of Strategic Bombing*, 75–76.

You may only harden it, intensify it."[295] In other words, sustained bombing might have the opposite to the desired effect and galvanise a population's will to continue the fight. This, rather than dissuade morale bombing proponents, saw them shift to equivocate or speak in euphemisms when discussing morale effects as a mix of propaganda and optimism took hold around the 'indirect' effects of bombing, meaning morale effects were achieved even when materiel effects were absent.

There were two notable exceptions in the trend towards morale bombing. These followed from wartime experiences in Germany and the US. Germany focused its attention on tactical support for a variety of reasons.[296] Germany's Gotha and Zeppelin raids had suffered significant and escalating losses due to improving British defences over the course of the war. The shift to night bombing brought only partial relief as the challenges of operating at night created significant attrition rivalling combat losses. In all, the German bomber force targeting England was destroyed twice over with some raids receiving losses of up to twenty per cent. So, while there was an awareness of the potential power of bombing in Germany there was also a greater appreciation of its costs leading Germany to come away far less enthused. When the time came for rearmament the Luftwaffe focused its attention on the tactical arena partially in response and believing it a more efficient path for air power at the time given limited budgets.[297] Curiously, underscoring the uneven experiences possible with innovative

[295] Spaight, *Air Power and the Cities*, 230.
[296] See: James S. Corum, 'From Biplanes to Blitzkreig: The Development of German Air Doctrine Between the Wars', *War in History*, 3:1 (1996), 85–101; James S. Corum, 'The Luftwaffe's Army Support Doctrine, 1918-1941', *The Journal of Military History*, 59:1 (1995), 53–76.
[297] Another major driving factor was the Luftwaffe's close integration with the Blitzkrieg doctrine which emphasised the tactical air power used to great effect during the Battle of France. See: James S. Corum, *The Luftwaffe: Creating the Operational Air War, 1918-1940* (University Press of Kansas, 1997), 36; Murray and Millett, *Military Innovation in the Interwar Period*, 107; Though they did not neglect wider strategic considerations, see: Williamson Murray, 'The Luftwaffe before the Second World War: A Mission, a Strategy?', *Journal of Strategic Studies*, 4:3 (1981), 261–70.

warfare, British and French experiences taught the reverse lesson. The 1918 Ludendorff offensive informed their understandings of the tactical domain, where extensive air attacks slowed the German advance at a heavy cost—twenty-five per cent casualties per day and a pilot life expectancy of eight days—contributing to those forces favouring bombing.

The US, on the other hand, embraced *points sensible* chiefly for its believed efficiency, but also with "an undercurrent of moral concern."[298] The precision bombing concept dominated American planning. They envisaged focused attacks against high-impact targets via high-altitude daylight bombing in the hopes of unhinging the enemy's war effort and/or supply of critical materiel. A contributing element was distaste for the 'promiscuous' morale bombing of WWI, and noting the 'less ethical conduct' of other states engaging in civilian bombing.[299] As the US had watched from a distance and not been subject to direct attacks against its own cities, reprisal pressures were absent. When American planners came to interpret the future of aerial bombardment, they did so with greater detachment from wartime experiences and absent the pressing impetus to win by bombing and win quick. With less strategic and doctrinal pressure to justify civilian casualties, city bombing retained more of its distinctive and objective nature compared to theorists in Europe and under its shadow.

Once again, the lessons of wartime experiences shaped subsequent constructions of bombing and its appropriateness along the lines of respective experience.

Whatever the respective ambitions, however, war manuals on the eve of war demonstrate that any reservations were superficial. The universal absence of any meaningful guidelines or

[298] Thomas, *The Ethics of Destruction: Norms and Force in International Relations*, 112.
[299] See: Biddle, *Rhetoric and Reality in Air Warfare*, 149–50 US debates over the proper use of aviation ranged far and wide. Normative concepts played a role alongside the institutional pressures of operating an air force within a land branch, as did a belief in the fragility of the modern economic state. See also, Robert W. McElroy, *Morality and American Foreign Policy: The Role of Ethics in International Affairs* (Princeton University Press, 2014), 152.

constraints on civilian bombardment speaks volumes. The British training manual confidently stated that training on the rules of aerial warfare was impossible as there were no rules governing aerial warfare. Internal memos rejected area bombing and direct attacks against civilian populations, but held little faith in Germany to do the same. A memo from January 1938 noted that Nazi Germany had driven "a coach and four through half a dozen international obligations" and continued to note that Britain must maintain its air capability for all purposes as "expediency too often governs military policy and actions in war."[300] Other memos made it clear that Britain would not initiate strategic bombing, but this was due to relative unpreparedness for mounting an offensive campaign against the imposing Luftwaffe. Meanwhile, British doctrine developed under the spell of Trenchard's "strategic bombing mania" was clearly one of city bombing.[301] American war manuals from 1940 were even less developed. They provided aviators with almost nothing beyond the terms of the 1907 Hague terms detailing the 'defended place' standard. A 1941 update included a total of two paragraphs charging 'practicable precautions', but also offered the WWI 'doctrine of the military objective standard' stressing that military targets were always attackable wherever they were. Meanwhile, the Luftwaffe issued a directive that unequivocally prohibited terror bombing on the one hand, but then stated that offensive operations against the enemy's population and country at their most sensitive points were its single most important task without restrictions on civilian casualties. Italy lacked any war manual, instead relying on a 1938 government statement stressing the legitimacy of strategic bombing and noting that

[300] Phillip S. Meilinger, 'Trenchard and "Morale Bombing": The Evolution of Royal Air Force Doctrine Before World War Ii', *The Journal of Military History*, 60:2 (1996), 267.
[301] Murray and Millett, *Military Innovation in the Interwar Period*, 233.

attacks against cities required a 'reasonable presumption' that they harbour military preparations or supplies, which is to say practically no standard at all.

In sum, with international regulation failing to provide any meaningful advances in norm specificity, the growing doctrines of aerial warfare instead further embedded functional non-restraint into doctrine. Theorists and military practitioners interpreted ideas of strategic bombing against cities as a necessity in modern war, with incidental civilian harm an unfortunate but unavoidable—or even somewhat desirable—by-product. Admiral Rogers summed up the regulatory state on the eve of the war as such:

> The extensive use of airplanes in bombing cities and non-combatants is not likely to be controlled by pre-war agreements. In former times centres of industry and accumulations of supplies were small, and being scattered in many places, most of them were inaccessible to the enemy. Now they are larger and more concentrated and everywhere accessible to airplane attack. In many cases they will be worth attacking and will suffer because their destruction will tend to end the war. The incidental presence of property and non-combatants will confer no immunity on property capable of aiding the national resistance.[302]

[302] William L. Rodgers, 'Future International Laws of War', *American Journal of International Law*, 33 (1939), 450.

Chemical weapons and the construction of a stigma in retrospect

Where submarines were contentious throughout and aerial bombardment was a mix of the tantalising and terrifying, chemical weapons emerged from WWI as somewhat mundane. Their use on the battlefield, although disliked, was broadly uncontroversial beyond arguments about who first broke international law. Attitudes immediately following the war reflected a dislike of chemical weapons but no more so than any other weapon. The Permanent Advisory Commission on Military, Naval, and Air Questions of the League of Nations concluded in October 1920 that "the employment of gases is a fundamentally cruel method of carrying on war, *though not more so than certain other methods commonly employed,* provided that they are only employed against combatants. Their employment against non-combatants, however, must be regarded as barbarous and inexcusable."[303] As at The Hague before the war, the chief concern was civilian protection and that concern was not troubled by the conduct during the war.

By the eve of the next war discourse surrounding chemical weapons transitioned to reflect a strong and growing sense of general odium, off the battlefield as well as on. The legitimacy gap was seemingly filled with remarkable success. Where the above examinations of contestation surrounding submarines and aerial bombardment above illustrate how their innovative nature and the idiosyncrasies of their introduction impeded norm development, the reverse appears the case for chemical weapons. In addition to the novelty of the concept, their use was constrained to the battlefield which limited their exposure and the interpretations surrounding it. Seizing on that, post-war actors reframed chemical weapons

[303] Emphasis in source, Quoted in Price, *The Chemical Weapons Taboo*, 71.

aggressively to so inflate and extend their threat that by the end of the interwar period the beginnings of a chemical weapons norm had emerged resembling that present today. Notably, this occurred within both aspects of contestation via social practice that was then reflected in international discourse differentiating chemical weapons from other legitimate means of war.

The innovative nature of chemical weapons contributed to this outcome of contestation in three ways. First, as their use was limited and distant for most, they remained enough of an unknown to enable comprehensive reframing. Second, while contestation was reframing and prohibiting chemical weapons ideationally, it found perhaps unlikely support from the prevailing doctrines and organisational cultures of various militaries, meaning that prohibition attracted remarkably little opposition, enabling it to proceed with relative ease. Third, the unintentionally broad character of The Hague gas shells prohibition, itself due to the novel nature of the weapon when considered, combined with the newly found odium to translate into institutionalisation. I examine each in turn.

A menace constructed in retrospect

The initially ambivalent and/or ambiguous perceptions of chemical weapons at the close of the war facilitated rapid transformation in its immediate aftermath. Chemical weapons were ill-defined and understood for several reasons. First, they were not generally used off the battlefield, and veterans had variable experiences based on the types of agents they encountered and the defences available at the time, providing no immediate consensus surrounding chemical weapons from direct experience. Second, wartime discourse was

insubstantial. The need for secrecy kept most details out of the press, and limited propaganda focused primarily on the legal aspects and recriminations for its introduction, with relatively little substantive moral content in the public domain. In other words, unlike submarines and bombing which emerged from the war with a host of prominent constructions—shared or not—wartime understandings of chemical weapons were indistinct, less entrenched, and less politicised. Where submarine discourse was captured almost entirely by the divergent experiences of the war, the opposite was true of chemical weapons—exposure was limited and indistinctly characterised, providing fertile ground for contestation to retroactively reframe chemical weapons.

This is not to suggest that there were no negative reactions or distinctions. Certainly, press coverage painted chemical weapons as ghastly and otherworldly. A *Times* correspondent described as 'an authority beyond question' reported:

> Their faces, arms, hands were of a shiny grey-black colour, with mouths open and lead-glazed eyes, all swaying slightly backwards and forwards trying to get breath. It was a most appalling sight, all these poor black faces, struggling, struggling for life, what with the groaning and noise of the effort for breath. … The effect the gas has is to fill the lungs with a watery, frothy matter, which gradually increases and rises till it fills up the whole lungs and comes up to the mouth; then they die; it is suffocation; slow drowning, taking in some cases one or two days.[304]

[304] Anonymous Correspondent, 'What Gas Means: A Visit to a French Hospital - Incredible Tortures', *Times, The (London)* (7 May 1915), 9.
See also, 'The Inhuman Enemy', *Times, The (London)*, 14 June 1915, 6, The Times Digital Archive.

Here, some of the intuitive distinctions surrounding chemical weapons are apparent. Far from more conventional or direct means of war, gas is impersonal and invokes ideas of poison.[305] In fact, chemical weapons may in a way have been ideally suited to stigmatisation. However, although the signs were there, chemical weapons did not immediately attract that stigma. Instead, they occupied a place as just one of the new horrors at the front. Use in the trenches did not fully highlight the distinct characteristics of gas, as it was contextualised within a treeless, pockmarked, and already otherworldly environment of extremes. Moreover, whatever menace was present was then further mitigated by frequent and reasonable arguments emphasising counterbalancing humanitarian traits. Thus, when formal international contestation began with regulatory attention at Versailles, unlike the other cases this occurred in something of a normative void without a strong impetus directly related to chemical weapons.

The proposed Articles were in keeping with the tone of the broader conference and punitive measures towards German disarmament, meaning that broad anti-German sentiment and arguments to German illegality formed the foundation of the first legal measures addressing gas. Into the ambiguity came a campaign of hyperbole, misinformation, wild hypotheticals, and fearmongering, from which the public came to assign a distinct sense of menace to chemical weapons far beyond that which arose during the war. This campaign did not however originate with norm entrepreneurs as we might expect. The preeminent German chemical industry was the envy of much of Europe, including those nations now drafting the treaty. A British proposal (Article 171) aimed to force Germany to disclose manufacturing methods used in the production of various gases to neuter their advantage. As many of those

[305] Price, *The Chemical Weapons Taboo*, chap. 2.

processes were dual-use and closely guarded commercial secrets, this measure contained major economic components that caught the attention of industry. Woodrow Wilson and the American delegation blocked the Versailles article given its 'excessively unfair' economic component, and what Article 171 became satisfied no one. But Versailles was only the beginning.

With newly found purpose, the Anglo-American chemical industries sought lucrative protective tariffs, embargos, and military production contracts for chemical weapons through expansive public "education campaigns" and a cluster powerful of lobby groups that lasted until 1925.[306] This private propaganda campaign centred on "[magnifying] the dangers … in the future without a large chemical industry."[307] In essence, they argued that it took fire to fight fire necessitating extensive investment lest states concede a perilous 'gas-weapon gap.'

Serendipitously, industry aims meshed well with the chemical warfare branches in the US and Britain. For the US Chemical Warfare Service (CWS), particularly, it was a matter of survival. Post-war/disarmament budgets threatened its independent existence. Within six months CWS staff numbers had fallen from 20,000 at the time of the armistice to 800.[308] This pressure saw the chemical industry and the CWS join forces in the US. Combined, they produced a staggering amount of "virulent and effective" newspaper articles, trade journals, specially commissioned books, shareholder announcements, and public addresses spruiking the potency and importance of chemical warfare with "something tailored for every taste."[309]

[306] Brown, *Chemical Warfare: A Study in Restraints*, 57.
[307] Brown, *Chemical Warfare: A Study in Restraints*, 58.
[308] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 238.
[309] Brown, *Chemical Warfare: A Study in Restraints*, 59.

This even extended to discretely disclosing exaggerated details on the latest secret developments.

Public campaigns on both sides of the Atlantic whipped the public into frenzy over chemical weapons, informed almost exclusively by wildly exaggerated suggestions of the danger they posed. With little direct experience at hand for most, lurid imagination sufficed. In only a few years the combination of misinformation, disinformation, propaganda and hyperbole, fostered by an overzealous chemical lobby, shifted the views of an inexperienced and uncertain public distinctly towards the negative and fearful.[310] The immediate effect of the industry 'education campaigns' was that:

> … unlike any other new method of warfare developed during the First World War, gas became the subject of immediate postwar public concern. The characteristics and effects of the use of gas in war were spotlighted and magnified at a time when responsible decision-makers were searching for ways to minimised the effects of war. Thanks to the determined efforts of the chemical industries, aided by the CWS, gas was no longer considered one among the hardships of war. By 1921, it had become the bête noire of World War I, a symbol of the inhumanity of modern war.[311]

In other words, the chemical industry engaged in a campaign of strategic image politics to stigmatise chemical weapons without intending to do so.

[310] For a more detailed examination of this process, see: Price, *The Chemical Weapons Taboo*, 70–74; Stockholm International Peace Research Institute (SIPRI), *SIPRI*, chap. 3; Brown, *Chemical Warfare: A Study in Restraints*, 49–54.
[311] Brown, *Chemical Warfare: A Study in Restraints*, 61.

This campaign possessed two, likely unintentional, features which aided the reframing of chemical weapons and went a great deal towards filling the legitimacy gap. First, a focus on the hypothetical threat to cities extended the menace of chemical weapons beyond the battlefield, away from tangible experiences and into newly speculative terrain. In that terrain the distinctive, otherworldly, and intuitive characteristics of gas—otherwise obscured within the battlefield context—came to the fore. Even an ocean away from immediate danger in the US, hypotheticals reinforcing the major themes of wartime propaganda induced fear at the prospect of aerially dispersed agents "[eliminating] the population of Berlin" with as little as twelve bombs.[312] Gas became a weapon of mass destruction directed against cities, with the belief that "our cities will be not merely decimated but rendered utterly uninhabitable by chemical bombs. Bombs are now being manufactured … which would render utterly impossible for days ... any kind of life, human, animal or vegetable. These things make us realise that it is not war in the ordinary sense that we are talking about. … We are faced with the wiping out of our civilization."[313] Or that a single bomb dropped on Piccadilly Circus, in the middle of London, would kill everyone from Regents Park to the Thames.[314] Chemical weapons became a weapon aimed against the civilian world as much as the battlefield—if not more so—threatening humanity and civilisation as a whole rather than being just another unpleasant feature of the modern battlefield.

That the threat was, at this point, entirely fictional did not seem to matter. Knowledgeable and dispassionate analysis recognised that "the chemical threat did not differ markedly from that posed by high-explosive weapons. Against well-equipped and well-disciplined troops, the

[312] Will Irwin, *'The Next War': An Appeal to Common Sense* (EP Dutton, 1921).
[313] Quoted in Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 101 See also, Chapter 3.
[314] 'Terrors of Modern War: Lord Halsbury on Deadly New Gases.', *Times, The (London)*, 2 January 1921.

chemical weapons of the time would never be overwhelming: if anything, efficacy had declined since 1918."[315] Or, as Haber put it, it constituted a "shadow greater than the substance."[316]

Second, the repeated emphasis on hypotheticals began to disassociate chemical weapons from their history of wartime use and its blame for their introduction. No doubt aided by the fact that civilians had not encountered them first-hand, "the more the inscription of danger turned towards future scenarios … the more the threat became disembodied from any particular foe and focused on the potential threat posed by the weapon itself."[317] This not only abstracted chemical weapons from the still-raging war-guilt narratives, but it also provided a shared point of reference and analogy aiding norm spread. The legitimacy gap was effectively filled as both sides interpreted those hypotheticals in compatible ways and in manners that did not directly invoke wartime experiences. As condemnation of chemical weapons grew over the interwar years it increasingly transcended the history.

However, though the overzealous lobbying had succeeded in bringing an exaggerated sense of menace to chemical weapons, the consensus should not be overstated. Public views still ranged considerably as to what that potency represented or its significance. Those arguing gas's inhumanity were matched note for note by those arguing its inherent humaneness, or its indispensability on the modern battlefield. The idea of gas as a horrible threat to humanity typified by 'otherness' nevertheless emerged prominently in the *melée* immediately after the war.

[315] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 247.
[316] Haber, *The Poisonous Cloud: Chemical Warfare in the First World War*, 307.
[317] Price, *The Chemical Weapons Taboo*, 74.

Compatible doctrine and organisational culture

An element enabling the scale of growth of the chemical weapons prohibition compared to the cases already discussed was that chemical weapons were far less strategically significant than submarines and bombing. As Admiral Rickover noted, submarine commerce-raiding was an essential tool that several key states could ill afford to sacrifice over incongruous moral concerns, just as Trenchard, Spaight, and Douhet's offence-focused doctrines of bombing ensured bombers remained unencumbered. But chemical weapons had a negligible strategic effect in WWI—tactically significant at times, but not a decisive factor. Their greatest effect was in imposing a matching cost on one's opponent in resources, logistics, and development. As Hitler stated in a speech in 1939, along with U-boats, gas was decisive only if one party possessed it.

One cannot claim regulation succeeded because gas was 'useless', however. On the contrary, experience sufficiently convinced many of its utility, bolstered by the chemical industry's education campaigns. But, that utility was within a specific niche—major defensive operations—which states' interwar planners sought studiously to avoid. The catastrophic costs of WWI drove all towards doctrines averting the very possibility of a return to the trenches. The utility of chemical weapons within their niche was a low priority for states considering regulation, then rearmament, between the wars. The immediate effect upon contestation was that Hughes' and the American delegation's almost single-handed pursuit of a prohibition at the Washington Conference did not meet hardened opposition from other states. Unlike the other two cases, precious few considered it a strategic cornerstone necessity for future conflicts except for the ability to match an opponent's use. States

recognised the necessity to retain research, development, and the capacity to respond, but did not plan to initiate gas warfare themselves. That the Washington and Geneva prohibitions coincided with that need by not including restrictions on development was either deft or fortuitous.

Chemical weapons were also not well liked within most militaries. Sources vary here: many had had the displeasure of being on the receiving end of chemical weapons and had developed a distaste for their use. Others expressed the view that, as British Major General Fuller put it, "a man in a gas mask is only half a solider" as the equipment was cumbersome and limiting.[318] The necessary introduction of civilians into military matters that came with gas was also unwelcome to traditionalists, as did the tremendous manpower demands involved in moving thousands of heavy cylinders and digging them in in secret at night. Line commanders were especially nervous about the presence of lethal chemicals within or near their own lines and entrenchments for fear of accidentally unleashing them. Others appealed to traditional notions of battlefield honour, noting asphyxiation as an impersonal, unskilled, and indirect method of war. Overall, in the words of British Brigadier General Wigram as GHQ staff officer in 1918, "armies do not like gas cloud work and there has been objection and obstruction to it all along."[319]

When proposals arose to prohibit chemical weapons, they therefore had few strong opponents within most states beyond the respective chemical warfare branches, which had declined quickly post-war. As Haber noted, "While other weapons were being paraded on every conceivable occasion, poison gas disappeared … Within a year of the Armistice not one

[318] John Frederick Charles Fuller and Samuel L. Marshall, *Armoured Warfare* (Eyre & Spottiswoode, 1955), 28.
[319] Haber, *The Poisonous Cloud: Chemical Warfare in the First World War*, 269.

of the belligerents was in a position to manufacture poison gas on a large scale …"[320] Instead, organisation and material resources were commonly directed in 'more important directions.' In the end, the expansive aid offered to the chemical industry's lobbying was a product of desperation in the face of open hostility throughout the US War Department.[321] By the time international prohibition was on the agenda there were few left within respective militaries and governments to protest it strongly, and they commanded little attention. Certainly, they struggled to outweigh the pressures of growing public opinion.

The general reluctance would have significant path dependent effects in WWII as poor preparation and a pervasive belief in disadvantage contributed extensively to independent but mutual decisions against the use of chemical agents by all of the belligerents. German planners, for example, were "predisposed to regard any foreign chemical warfare [development] as a sign of superiority," which bolstered efforts to avoid any use for fear of disadvantage, and in light of dismal defensive preparations.[322] Similar constraints acted in other states.

The Hague Precedent and International Regulation

Building on the expansive public alarm and distain, The Hague gas shells prohibition once tossed aside and along with it the confused and accidentally broad scope of its text–as discussed in Chapter 2–now became the cornerstone of a new regulatory push. The effect

[320] Haber, *The Poisonous Cloud: Chemical Warfare in the First World War*, 288.
[321] John Ellis van Courtland Moon, 'Chemical Weapons and Deterrence: The World War II Experience', *International Security*, 8:4 (1984), 8.
[322] Brown, *Chemical Warfare: A Study in Restraints*, 234.

was twofold. First, to further cement chemical weapons as inherently inhumane via international discourse, and second, to institutionalise an aspirational prohibition.

The International Committee of the Red Cross (ICRC) and several other professional, humanitarian, and public groups instigated the international pursuit of a renewed total ban on chemical warfare, not just its restriction to the battlefield.[323] In response, the Council of the League of Nations proposed that member governments study sanctions for breach of "the rules of humanity imposed upon all," referring to chemical weapons in October 1920.[324] A month later the ICRC proposed, among a number of other disarmament measures, the "absolute prohibition of the use of asphyxiating gas, a cruel and barbarous weapon which inflicts terrible suffering upon its victims."[325] Six months later they invoked the 1899 prohibition, urging that it be reinforced and expanded.[326] The reference to The Hague prohibition is significant. From the outset, entrepreneurs linked the regulatory push with the previous inadvertent prohibition concluded in 1899, arguing that a prohibition was a return to a traditional position rather than a new measure. Combined with wartime propaganda treating gas use as a primarily legal matter, this formed a compelling foundation that chemical weapons were a traditionally banned weapon, and with good reason given the industry education campaign.

Ensconced within loaded discourses on the preservation of humanity and civilisation, the restriction of gas became a major element in subsequent international discussions.[327] As the

[323] See: Webster, 'Making Disarmament Work', 551–69.
[324] 'Consult The People', *The Times*, 29 October 1920, 11, The Times Digital Archive.
[325] Jean Mirimanoff, 'The Red Cross and Biological and Chemical Weapons', *International Review of the Red Cross (1961 - 1997)*, 10:111 (1970), 301–15.
[326] Mirimanoff, 'The Red Cross and Biological and Chemical Weapons', 301–15.
[327] For an examination of 'civilisation' narratives as relates to chemical weapons, See: Richard M. Price, 'A Genealogy of the Chemical Weapons Taboo', *International Organization*, 49:1 (1995), 95–58.

disquiet over chemical weapons approached its zenith in 1921 the chemical lobby sensed that they had perhaps overplayed their hand and shifted to emphasising the 'humaneness' of chemical weapons. But the die was cast. International discussions focused on two conferences in particular: the Washington Naval Conference ("the Washington Conference") in 1922, and the Geneva Conference for the Supervision of the International Trade in Arms and Ammunition and Implements of War ("the Geneva Conference") in 1925.

The Washington Naval Conference

Despite abundant public pressure, the Washington Conference in 1921-22 began on a sceptical note. US and British delegates questioned the very concept of arms control agreements on land and noted that The Hague prohibition of gas shells was swiftly discarded in practice. Compounding this was the view that effective weapons with military utility were essentially unrestrainable. Thus, military thinkers generally paid little attention to the proceedings while, fuelled by the scale of public alarm, conference delegates gave chemical weapons significant consideration. Given the scepticism, there was no mention of total prohibition. The relevant sub-committee assessed the feasibility of controlling chemical warfare research and production and, without much hope, reported that:[328]

1. No nation would dare agree to render itself unprepared for gas warfare if the possibility existed that an unscrupulous enemy might break an agreement for its own advantage;

[328] Washington Naval Treaty, *Conference on the Limitation of Armament, 1922.*, 1922 <http://www.ibiblio.org/pha/pre-war/1922/nav_lim.html> [accessed 10 June 2014].

2. Given the emission of gases from conventional explosives, any attempt to forbid all use of gas in warfare would inevitably lead to confusion; and

3. Research and manufacture of gases of use in warfare is impossible to restrict.

The sub-committee also argued that:[329]

> The only limitation practicable is wholly to prohibit the use of gases against cities and other large bodies of non-combatants in the same manner as high explosives may be limited, but that there can be no limitation on their use against the armed forces of the enemy, ashore or afloat.

The conference chair—US Secretary of State Hughes—largely overlooked these findings, instead preferring to focus on the submission of an American 'advisory committee' which claimed to represent the 'conscience of the American people' and, as Brown describes it, was "as emotional as the technical Subcommittee report had been rational," consisting of a "collection of exaggerations and misstatements," including the horror of entirely hypothetical city-destroying attacks.[330] Further written remarks by several prominent Senators declared chemical warfare agents "whether toxic or non-toxic … such unfair methods of warfare as poisoning wells, introducing germs of disease and other methods that are abhorrent in modern warfare."[331] Reports from army and navy subcommittees argued "chemical warfare should be abolished among nations, as abhorrent to civilization. It is cruel, unfair improper

[329] ibid
[330] Brown, *Chemical Warfare: A Study in Restraints*, 68.
[331] Washington Naval Treaty, *Conference on the Limitation of Armament, 1922.*

use of science. It is fraught with the gravest danger to the non-combatants and demoralises the better instincts of humanity" and warned of its threat of becoming "so efficient as to endanger the very existence of civilization."[332]

Hughes further cited The Hague gas shells prohibition as evidence of precedent—a traditional ban on chemical weapons supporting his arguments. He characterised prohibition as a restatement, not a new introduction, and in doing so, formally seized on the open framing of the original prohibition delineating gas shells as a distinct category of weapon, and the ambiguity present both at The Hague and in 1922 to bolster support for prohibition. Whether this had been the intention of the original prohibition or not, it nevertheless greatly improved the capacity for later actors such as Hughes to claim that it was far more comprehensive.

Through adroit chairmanship, Hughes and the American delegation almost single-handedly departed from convention elsewhere in the conference, disregarding the technical subcommittee, skipping over any deliberation, denying a French move to adjourn, and moving immediately for a full prohibition. In doing so, Hughes met surprisingly little pushback, for reasons I return to later. With support from Elihu Root, offering the staggeringly false claim that "the most extortionary consensus of opinion that one could well find upon any international subject," the following provision was in the final treaty:[333]

> Chemical warfare, including the use of gases, whether toxic or non-toxic, should be prohibited by international agreement, and should be classed with

[332] Washington Naval Treaty, *Conference on the Limitation of Armament, 1922.*
[333] This claim did not hold even within the conference itself, let alone with wider state attitudes. Quoted in Price, *The Chemical Weapons Taboo*, 83.

> such unfair methods of warfare as poisoning wells, introducing germs of disease, and other methods that are abhorrent in modern warfare. [334]

As Price surmises, "in this case, ambiguous moral concerns were translated into an international prohibition—however tenuously—thanks to the existence of a previous institutionalisation of the norm. The norm had for the first time provided its own self-sustaining rationale in the form of its ancestral lineage."[335] Moreover, based on the presence of the original Hague gas shells prohibition and Hughes' argument, delegates believed the ban "neither new nor terribly important."[336] This further lessened its perceived importance along with the lack of enforcement or verification mechanisms, meaning retaliatory and defensive readiness was unaffected by the prohibition. Its only failsafe was the now-abundant public scorn and a limited point of technical illegality which few military figures found concerning given recent history. Nonetheless, some states—notably the US under pressure from intense industry-backed lobbying and swayed by vociferous arguments for the humanitarian qualities of chemical weapons—failed to ratify the treaty, leaving it with no legal backbone.[337]

The prohibition at the Washington Conference came to mean different things to different audiences. Those military planners still interested in chemical warfare interpreted the prohibition as no obstacle to future use or continued development, and saw its lack of enforcement or ratification as further support of the sceptical findings of the subcommittee report. Recognition that it would almost certainly have crumbled under serious pressure

[334] ibid.
[335] Price, *The Chemical Weapons Taboo*, 83.
[336] Price, 'A Genealogy of the Chemical Weapons Taboo', 92.
[337] Reasons differed. Substantial disagreements over the submarine provisions were one prominent factor. However, the de facto defeat in the US Senate (it never went to the floor) owes much to the influence of the chemical lobby. Meanwhile, public discourse offered little challenge to the emerging norm. See: Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 249–50.

underscored a belief in its limited significance.[338] Meanwhile, for prohibition proponents it was a significant confirmation of the stigmatisation of chemical weapons and an important step towards full prohibition. They continued to voice their growing moral objections to chemical weapons at every opportunity backed by public alarm. The extent of stigmatisation from the public perspective was clear. A *New York Times* survey at the time of the Washington Conference found that 366,975 people favoured abolition, and only 19 wished chemical weapons to be retained in line with the technical subcommittee's more limited recommendations.[339] Even following the overall ratification failure, Hughes' success in including a prohibition in the Washington Treaty marked a tipping point. It was the latest indicator of a traditional objection in customary international law that built on retroactive constructions of The Hague prohibition and accompanying reinterpretations of Article 171. The idea of gas as odious was effectively solidified and expanded regardless of the outcome, and "in the process a particular interpretation of gas warfare … prevailed and was imbued with an institutional imprimatur."[340]

Geneva Conference for the Supervision of the International Trade in Arms and Ammunition and Implements of War in 1925

On the back of the Washington Conference, regulatory efforts reached a crescendo at the Geneva Conference in 1925, culminating in the Geneva Protocol. Following open concessions

[338] Hughes even conceded privately that he would have happily settled for far weaker measures, expecting greater resistance. Price, *The Chemical Weapons Taboo*, 99.
[339] 'Submarines and Gas Condemned by Public: Survey by Advisory Committee Reveals Emphatic Protests Against Continued Use.', *New York Times* (8 January 1922), 17.
[340] Price, *The Chemical Weapons Taboo*, 88.

among delegates that limitations on the export of poisonous gases and related materials were unlikely to succeed in constraining chemical warfare, they opted instead to directly reiterate the unratified prohibition of the Washington Treaty. This knowingly fell beyond the scope of what was ostensibly an arms trade treaty, and had no direct effect on the laws of war. During discussions several delegates echoed Hughes in highlighting previous incarnations of a prohibition, including 1899, 1907, and 1922 as markers of a traditional opprobrium. For them, 1925 was merely an opportunity to fully codify the traditional prohibition backed by public stigmatisation into international law, regardless of the overreach. Once more, rather than creating a new prohibition, the delegates saw themselves as reinforcing the pre-existing one. Thus, they included the following in the final text:

> Whereas the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids materials or devices, has been justly condemned by the general opinion of the civilized world; and
>
> Whereas the prohibition of such use has been declared in Treaties to which the majority of Powers of the world are Parties; and
>
> To the end that this prohibition shall be universally accepted as a part of International Law, binding alike the conscience and the practice of nations;
>
> Declare:
>
> That the high contracting parties, so far as they are not already Parties to Treaties prohibiting such use, accept this prohibition, agree to extend this

> prohibition to the use of bacteriological methods of warfare and agree to be bound as between themselves according to the terms of this declaration.[341]

Minor and ineffectual steps correcting the lack of an enforcement mechanism amounted to a promise "to exert every effort to induce other states to accede to the present Protocol," while its other shortcomings remained.[342] Thus, as with previous measures, there was no direct path to legal constraints, and military figures were again unconcerned. Accordingly, the Geneva Protocol met with agreement from attending states, though France, Britain, and the USSR attached reservations limiting its application to other signatories provided they also did not use chemical weapons. This effectively transformed it into a convention-dependent no-first-use agreement with limited concordance. The US once more failed to ratify under pressure from the chemical lobby. Nonetheless, the practical result was a semi-formal deterrent framework between the major powers including most of the impending belligerents.[343]

Further steps towards international legal agreements faltered as disarmament progress halted and Europe began to slide once again towards war.[344] The final formal attempts to constrain chemical weapons prior to war were through unilateral diplomatic appeals. Communicating via the Swiss, the British offered a non-use pledge providing Germany did the same, which Germany duly accepted.[345] As far as institutionalisation was concerned, chemical

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[341] Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare. Geneva, 17 June 1925.
[342] Geneva Conference for the Supervision of the International Trade in Arms and Ammunition and Implements of War, *Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare. Geneva, 17 June 1925.*, 1925 <http://www1.umn.edu/humanrts/instree/1925a.htm> [accessed 15 June 2014].
[343] Moon, 'Chemical Weapons and Deterrence', 3–35.
[344] The Preparatory Disarmament Commission and World Disarmament Conferences, 1926-30 & 1932-6 respectively, achieved little.
[345] Brown, *Chemical Warfare: A Study in Restraints*, 231.

weapons were still technically legal, while the tenuous constraints were closely tied to public opinion in the absence of a conventional prohibition.

The effect of formal statements in 1922 and 1925 was that "the position had now been reached where a wide segment of public opinion had been mobilized on the subject of chemical warfare into an attitude that was both fearful and hostile."[346] Such public opinion was also largely inter-cultural, reflecting the filling of the legitimacy gap. Where submarine discourse was marked by division, and bombing discourse by inconclusiveness, chemical weapons discourse demonstrated remarkable consistency between states.

Consensus on the nature of and response to chemical weapons was still by no means universal and the idea of prohibition met frequent strong opposition. In opposing measures included in the Geneva Protocol in 1925, the American Legion (a veteran's organisation for American WWI soldiers) dismissed calls for prohibition as coming from 'pacifists', not soldiers, while arguing for gas as an essential weapon. They stated that "it was the experience of hundreds of thousands engaged in the last war that gas was one of the most humane weapons of warfare and also the most effective in bringing any war to an end."[347] Some argued that the effects of chlorine and phosgene "were utterly negligible compared with those produced by a good septic shell-wound."[348] Others reiterated an argument common at The Hague 26 years earlier, appealing that "we shall never be able to prevent in war the use of a weapon which is militarily effective", least of all one that promised quicker victories while being clearly "the

[346] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 244.
[347] Special To The New York Times, 'BAN ON POISON GAS OPPOSED BY LEGION; Statement Urges Government to Refuse to Sign the Geneva Protocol. CALLED HUMANE WEAPON Fumes Mean Fewer Serious Casualties and Shorter Wars, Asserts Argument. VETERANS IN PHILADELPHIA Thousands of Legionnaires and Women of Auxiliary Flock There for Conventions Today.', *The New York Times*, 11 October 1926.
[348] John Burdon Sanderson Haldane, *Callinicus: A Defence of Chemical Warfare* (Dissertations-G, 1972), 22 Originally published in 1926.

most humane of all weapons used in the last war."[349] Still others hoped for a deterrent effect, believing chemical weapons were both so terrible and so effective that their development should be encouraged as, "the surest means of preventing war would be the development of such a weapon [referring to highly lethal chemical agents for use against cities] … that would make it infinitely more horrible than now."[350]

This is not to suggest that there was a robust chemical weapons norm prior to WWII or that the regulatory steps were much more than aspirational hopes drawing on public clamour—however persistent either appeared. States and their populations generally expected chemical weapons to occupy a prominent, if undesirable, place in future wars. Several incidents shortly before WWII underscored this reality. Italian use in the Italo-Ethiopian war against retreating and poorly protected Ethiopian troops confirmed their place and efficacy. One observer noted that "it is no exaggeration to say that mustard gas, sprinkled from aeroplanes, was the decisive tactical factor in the war."[351] This drew only a tepid and half-hearted response from the League of Nations, with subsequent reports of widespread Japanese use in China entirely ignored, further pointing to the certainty of future use. Future belligerents certainly believed their adversaries were prepared and willing to initiate in the coming war—erroneously as it would turn out.[352]

[349] Senator (US) Wadsworth in opposing the Washington Treaty's provisions on gas. *Congressional Record,* 69th Congress, 1st Session. 1927. 68, pt. 1:144.
[350] Senator (US) Joeseph Ransdell. Ibid. p. 363.
[351] J.F.C. Fuller. Quoted in, Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 145–46.
[352] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 306.

Conclusions: the process of contesting innovative warfare

What can we then discern from this discussion for answering the overarching question: what does an *innovative* form of warfare mean for the process of normative contestation? Beyond the immediate conclusion—that *innovative* warfare exacerbates the already difficult task of regulating warfare—the examinations share a common element: the nature of, reactions to, and lessons from initial use heavily shaped subsequent contestation. Contestation is, at its essence, engaging with past practice and expectations to create or alter behavioural expectations for future practice. It follows that the specifics of past practice provide the canvas of contestation, and those characteristics necessarily alter it in turn. The probability of uneven experiences and interpretations of an innovative development will dramatically shape contestation that follows, and considerably amplify the legitimacy gap in doing so.

Simple counterfactuals highlight this. A compromise between Anglo-American and German submarine positions—possibly trading off the rights to merchant armament and resistance in exchange for safe visitation as Wilson and Lansing briefly suggested during the war—would have altered subsequent contestation immensely. For that matter, had the Entente had greater opportunity for their own submarine campaign, parity between the belligerents might easily have produced normalisation as it had with chemical and aerial weapons. Similarly, if WWI had provided better recognition of the vulnerability of bombers and the limited effectiveness of bombardment then doctrinal discourses would not have so forcefully emphasised offence-dominance and city bombardment, easing the strategic pressures on contestation. The same can be said for chemical weapons. Greater exposure, either through direct attacks against civilians or less secrecy during the war, would likely have undercut the

efforts at reframing chemical weapons immediately following the war—leading to their occupying a more mundane (though still intensely disliked) status alongside bombing, changing the course of contestation in turn.

The idiosyncrasy and variability in an innovation's introduction necessarily shapes the contestation that follows. The deduction for the immediate purposes of this dissertation is that anticipating the course of contestation surrounding the initial use of a new weapon is, therefore, exceedingly difficult. Too much hinges on the specific characteristics of its use, the actors that use it, and how it is framed at the time.

Beyond that, the three cases provide some direct insights. First, the initial use of an innovative form does not necessarily alleviate the challenges of establishing and developing norms 'in advance'. Barriers to specificity can remain well after initial use, even in the presence of a substantiated moral concern backed with shared experiences evidencing a troublesome nature and a strongly concordant underlying norm (civilian protection) as a starting point—as with bombing and submarines. This escalates with the scope of the innovation considered. Where submarine commerce raiding represented a relatively small shift once discovered, aviation amounted to an entire spatial and conceptual domain which the tentative beginnings during WWI only partially illuminated. A regulatory outcome in that case required that states parse the full implications of that scale of shift, and do so with even-handed nuance such that concordance was a real possibility. Unravelling the complexities of a new form of war alongside the culmination of other centuries-long changes in the scope of warfare to include the economic and national level factors proved too great a challenge for effective contestation as a result. Approaching a highly novel and still rapidly developing domain of

conflict strongly implies that the barriers to specificity will remain and that states are still 'in the dark'.

Moreover, contestation can remain fundamentally trapped within and altered by wartime constructions, even when an innovative form is well understood, unlikely to undergo significant further changes, and initial experiences provide clear indications of where tensions between humanitarian concerns lie in practice. In the submarine case, especially, pressures to engage with regulation from normative and strategic sources led the triumphal victors to impose a brittle and incongruous regulatory framework. Doing so also meant a failure to unravel the submarine's place in international law. Domestic processes arrived at conclusions mutually exclusive with strong restraint, indicating how international and domestic discourses can starkly diverge given their different purposes.

Second, it appears that a strong public response is necessary in order for international contestation emphasising moral constraints to overcome domestic implementation emphasising the strategic exploitation of an innovative method of warfare. That the greatest successes internationally coincided with strong domestic norms is likely no coincidence. Moreover, when attached to a shared experience and interpretation of that experience, those norms spread more easily and are more likely to impose constraints that significantly alter the menu of options for decision makers in wartime.

Royse stated between the wars that "a weapon will be restricted in inverse proportion, more or less, to its effectiveness; that the more efficient a weapon or method of warfare the less likelihood there is of it being restricted in action by the rules of war."[353] At the wider level it appears Royse's truism holds, with a minor alteration. Where Royse believed military utility

[353] Royse, *Aerial Bombardment and the International Regulations of Warfare*, 131–32.

precluded effective regulation, it appears from the relative success of chemical weapons contestation that regulation of a useful weapon is indeed possible. However, for chemical weapons that utility was not immediate, and not directly imperilled by the regulation at the time. In fact, steps towards the full and formal prohibition proceeded in part because they were believed to be too useful by the public (hyperbole), while the actual utility was deferred by incompatible doctrine, and so immediately relevant. Therefore, Royse's truism should note instead, perhaps, the immediate utility of a weapon rather than its general efficiency.

CHAPTER 5: LESSONS FOR THE REGULATION OF CYBER WARFARE IN ADVANCE

This chapter considers the prospective regulation of cyber warfare in advance as informed by the findings of the preceding historical chapters. Thus far, I have explored what it meant historically to regulate an innovative form of warfare in advance before it was well understood or widely integrated into doctrine and practice. With those examinations in mind, this chapter examines what is arguably the most pressing innovation in warfare today; cyber warfare.

As Australian Prime Minister Malcolm Turnbull recently said, cyber-space is "the new frontier of warfare — the new frontier of espionage."[354] As reliance on information and communication technologies grows, so too does the scope of risk and the possibility for malicious exploitation, with the rapid computerisation of nearly every facet of modern states, societies, and economies coming with a commensurate (or possibly greater) degree of vulnerability.[355] Subverting, disrupting, or even destroying the wide range of computer systems now integrated into the modern world offers significant potential for strategic use, as evidenced by the steadily growing series of internationally significant events.[356] The extent of this is such that NATO has recently recognised cyber warfare as a possible trigger of the collective defence provisions of Article 5.[357] Clearly, cyber warfare represents a highly useful

[354] Henry Belot, 'Turnbull Declares Cyber Security "the New Frontier of Warfare"', *ABC News*, 24 January 2017 <http://www.abc.net.au/news/2017-01-24/turnbull-declares-cyber-security-the-new-frontier-of-warfare/8207494> [accessed 24 January 2017].

[355] For a historical overview see: James A. Green, ed., *Cyber Warfare: A Multidisciplinary Analysis* (Routledge, 2015), chap. 1.

[356] For a listing of significant events, see: James A. Lewis, *CSIS: Significant Cyber Incidents Since 2006.* (CSIS: Center for Strategic & International Studies, 24 August 2016) <https://csis.org/program/significant-cyber-events>.

[357] For NATO's statements on collective defence, see: Tomáš Minárik, 'NATO Recognises Cyberspace as a "Domain of Operations" at Warsaw Summit', *CCDCOE - NATO Cooperative Cyber Defence Center of Excellence*, 2016 <https://www.ccdcoe.org/nato-recognises-cyberspace-domain-operations-warsaw-summit> [accessed 13 August 2016]; Julian E. Barnes, 'NATO Recognizes Cyberspace as New Frontier in Defense', *Wall Street*

tool for the "continuation of politics by other means" to borrow Clausewitz's paradigmatic definition.[358]

As noted in Chapter 1, major states are responding to this new technological development in the means of warfare partially through the pursuit of regulation in advance. Thus far, these nascent measures are perhaps best described as testing the waters. Nevertheless, there is clear interest in various forms of normative constraint and/or regulation as defining favourable constraints on a strategically significant tool before it emerges is no doubt tempting.

Having conducted a detailed exploration of the historical precedents, I am now in a position to address the initial question identified in Chapter 1: can we regulate cyber warfare in advance? To address this question I proceed as follows: first, I assemble the key findings of the historical analysis developed throughout the preceding chapters which inform this examination, second, I establish a basic working model of what cyber warfare is and illustrate that it is an analogous case of innovative warfare closely matching the historical parallels upon which this dissertation is focused, third, I ascertain whether comparable barriers to specificity and concordance are present as they were for the historical cases—in turn suggesting incomplete or failed establishment as a probable outcome, and finally, I examine each of the influential factors identified in the empirical chapters relative to cyber warfare today.

Journal, 14 June 2016, section World <http://www.wsj.com/articles/nato-to-recognize-cyberspace-as-new-frontier-in-defense-1465908566> [accessed 13 August 2016].

[358] Clausewitz, *On War, Indexed Edition*, 87.

A summary of the key historical findings

Before delving into cyber warfare, it is necessary to first summarise the key findings of the empirical examinations which inform the discussion of the regulation of cyber warfare in advance that follows.

The most immediate finding explored in Chapter 2 was to confirm the presence of barriers to the development of norm specificity and concordance in advance. Specificity—being how well guidelines for restraint can be defined and understood—suffers for the obvious reason that it is difficult to conceptualise and define guidelines for behaviours that do not yet exist. The uncertainty is simply too great, and escalates the more innovative the subject. Even in best-case scenarios, the informational barriers effectively preclude meaningful degrees of norm specificity while pervasive uncertainty reigns over regulatory proceedings.

Concordance, meanwhile—being the degree of intersubjective agreement between states—also suffers from similar barriers. Without strong understandings of the innovation under discussion or well defined and understood guidelines, there is little on which to build agreement between states. Absent specificity, pervasive ambiguity and uncertainty hold sway. The greater the ambiguity, the greater the reticence of states facing a practical unknown accompanied by the high probability of error and overreach attached to any regulatory action, formal or otherwise. Concluding or strongly supporting measures from a position of ignorance can easily impose undesirable and unreasonable constraints at a later date, and with possibly existential consequences given warfare as the subject. Thus, the risks of 'acting in the dark' are immense and strike at the heart of security which, in turn, guarantees them great, cautious, and self-interested attention from states. In those

circumstances, states will favour regulation that benefits themselves and disadvantages their adversaries, all but ensuring significant opposition to any regulation by those it disadvantages. Thus, states typically approach regulation in advance with strategic self-interest as their primary concern.

The consequence of these barriers is that establishing regulatory norms in advance is prone to outright failure, or 'incomplete' establishment where core specific norm content remains missing but the outlines of a norm are tentatively established, carving out conceptual space for later norm development but providing little by way of detailed guidelines in the immediate term. In either case, ambiguity reigns over the innovative warfare in question and any behavioural expectations attached to it, leaving states to parse the finer points of its ambiguous content *in media res*. As states undertake this task separately and likely during active hostilities when an innovation is first used, they are prone to interpret any ambiguity in service to their pressing strategic interests at the time, and will each do so quite differently. As those interests are almost certainly counterposed in most cases, the consequence is a high probability of non-restraint outcomes, at least as far as the normative component is concerned.

However, the degree of incompleteness and ambiguity can vary considerably, as can its interpretations *in media res*. Four key factors emerge from the historical analysis of the preceding chapters narrowing and shaping how the ambiguity inherent to regulation in advance manifests, and influencing how states engage with and construct ambiguous norms attached to innovative warfare.

First, the historical cases illustrate that a shared recognition of the need for a regulatory response in advance on moral grounds is essential, with its absence likely fatal to prospects

of formal or informal constraint. Being able to anticipate a strongly compelling need for restraint, sufficient to compel states to regulate or abstain from an innovation in advance of widespread experience with that innovation, is all the more important. Where the importance of a norm in support of any formal regulation is relatively straightforward in conventional contexts, it assumes greater meaning when contemplating matters in advance. To arrive at a belief in the need for restraint and associate that need with a compelling normative or moral justification enables entrepreneurs to leverage specific and/or more detailed moral concerns as an organising principle which, in turn, 'bootstraps' norm establishment in advance despite the uncertainty and lack of experience substantiating establishment. I term this a *raison d'être.* If present, a *raison d'être* helps by providing a self-sustaining justification for regulation and by invoking principled and/or traditional objections to the behaviour it identifies that are already concordantly shared between states, typically Just War norms surrounding civilian protection. Doing so also alleviates the possible insurmountable burden of *de novo* norm establishment and compensates for the absence of specific norm content by at least outlining specific areas of moral concern even if they cannot be immediately quantified. When present, a *raison d'être* focuses regulatory efforts towards an identified, recognisable, and somewhat defined problem that can suggest some measure of concordant support.

Critically, a *raison d'être* must be distinct from the commonplace refrains against almost every new addition to warfare simply because it is a new addition to warfare. This is necessary to avoid the issue being ignored or downplayed as the vast majority of similar refrains are. Furthermore, a distinct justification also begins the process of carving out the space for more specific content to be developed once the situation is better understood, all with the benefit of an identifiable precedent to narrow the scope of regulation while—ideally—attaching it to a shared moral principle. As such, a *raison d'être* minimises the inherent risk of acting in the

dark by providing some fixed point of reference amidst the uncertainty and helps solidify the related discourse through linkage to wider established norms.

The importance of a *raison d'être* is illustrated throughout Chapter 2. The fleeting discussions of submarine regulation at The Hague evaporated for the want a one, and then struggled to reassert one against the encroaching pressures of industrialised warfare. The longstanding fears of indiscriminate aerial bombardment against cities provided a *raison d'être* which secured the outlines of the incomplete aerial bombardment norm rooted in civilian protection, and further supported efforts towards its regulation—however ineffectual those might have been. The gas shells prohibition also exhibited a *raison d'être* in the form of civilian protection, however poorly expressed in the terms of the prohibition that resulted. The presence of that prohibition, regardless of its lapsed state, then provided the anchor for a traditional objection which formed part of the *raison d'être* supporting later contestation during the interwar period.

Second, congruency with related norms regulating warfare constitutes a second key influential factor. Consistency with regulations already attached to behaviours closely related to the new introduction provides beneficial conceptual and normative frameworks that aid in outlining and partially detailing areas of moral concern identified by a *raison d'être*, or in prompting a *raison d'être* by proxy through the precedent of moral objections in related areas. The interpretation of aviation through its city bombardment parallel is a prime example. As the morally concerning behaviours were closely comparable—bombardment being bombardment more or less regardless of the source—this close congruency provided the beginnings of detailed norm content via the existing norms governing city bombardment, so narrowing the scope of regulatory discussion and with it the scope for disagreement or

strategic regulation as it excluded the immediate battlefield. Furthermore, the presence of existing regulation of related behaviours bolstered the legitimacy of regulation on aerial bombardment as consistent with wider norms, and less of an expansion of the constraints on war.

Of course, as discussed throughout Chapters 2, 3 and 4, this brought with it its fair share of flaws and complications. Though the bombardment itself was comparable, aviation changed its reach and conduct in a manner that quickly outstripped the inherited frameworks, while WWI and interwar pressures towards consistency between the regulations on various forms of bombardment (naval, land, and air) and inter-service rivalries fostered a deadlock preventing progress towards improved regulation.

Conversely, the gas shells prohibition illustrates the difficulties present where a highly novel innovation falling outside of congruency diminishes the strength of regulation. The result at The Hague was a poorly expressed and equally poorly understood prohibition. As the behaviour shared no easy point of comparison, or benefited from analogous concepts in warfare to that point, states and delegates alike struggled to conceptualise its use or its more significant aspects. Thus, the greater the conceptual burden devising regulation in advance, the greater the probability of a similar outcome.

Third, given the ambiguity inherent in regulating in advance, concordance between states is crucial not just for the regulation of the innovation itself but also in how they interpret and apply the underlying principles of just-war to reconcile its ambiguity *in media res*. As the examinations in Chapter 3 illustrate, states are prone to ascribe differing meanings that reflect their present strategic, normative, and propaganda interests. In doing so, they can easily derive fundamentally divergent interpretations of the same behaviours from previously

shared points of international law simply by emphasising different aspects of common principle. Interpretations of submarines during WWI, for example, saw The Entente emphasise civilian immunity above all else, where Germany emphasised military necessary and economic components as contributions to a belligerent. Both positions were entirely consistent with codified statements of international maritime law written only a few years earlier. Thus, how states interpret, weight, and apply relevant principles more generally influences how they will engage with the ambiguity of regulation concluded or outlined in advance, and the efficacy of regulation in advance.

Fourth, in much the same way that underling interpretations of just-war principle can shape interpretations of innovative warfare, so too can the circumstances and characteristics of experiences with innovative warfare. Consensus is by no means guaranteed, and is perhaps the less likely outcome of initial experiences with innovative warfare. As innovations and the strategic opportunities for their use are rarely evenly distributed, states and their societies are likely to experience innovations at different times and in different circumstances. As Chapter 4 illustrates, states and societies may experience new additions to the repertoire of warfare differently and ascribe to them different meanings, even to the point of mutual exclusivity, subject to their own unique context. Divergent meanings arising during hostilities can become deeply embedded by bitter experience and the extremes of wartime discourse to the point of intractability, just as future possibilities loom large in their shadow. Such conflicting experiences and interpretations increase the chances of inter-cultural discord, dramatically decreasing the chances of shared norms arising. In other words, uneven experiences will exacerbate the legitimacy gap between competing or conflicting norms addressing innovative warfare. Thus, whether states are likely to experience innovative

warfare comparably and to draw from it a compatible meaning constitutes a fourth key influential factor in the efficacy of regulation in advance.

With these key historical findings in mind, I turn to the prospects for the regulation of cyber warfare in advance.

The new cyber frontier

It is helpful to clarify the scope of behaviours under discussion before delving further into the matter of regulation in advance, particularly as cyber warfare can take many forms. The lines between lesser actions and those closer to conventional warfare have proven especially difficult to draw as "the difference between cyber-crime, cyber-espionage and cyber-war is a couple of keystrokes. The same technique that gets you in to steal money, patented blueprint information, or chemical formulas is the same technique that a nation-state would use to get in and destroy things."[359] Consequently, such distinctions often exist only as a matter of perspective and beg clarification.

What is becoming clearer by the day, however, is the potential for significant strategic action in cyberspace. The recent Russian campaigns in 2016 to influence or undermine elections across the world and suggestions of efforts to spark further diplomatic fracas illustrate the power available to manipulate public opinion and the political environment.[360] Older but still

[359] Tom Gjelten, 'Cyber Insecurity: U.S. Struggles to Confront Threat', *NPR.Org*, 2010 <http://www.npr.org/templates/story/story.php?storyId=125578576> [accessed 29 July 2015].
[360] Patrick Wintour, 'Russian Hackers to Blame for Sparking Qatar Crisis, FBI Inquiry Finds', *The Guardian*, 7 June 2017, section World news <http://www.theguardian.com/world/2017/jun/07/russian-hackers-qatar-crisis-fbi-inquiry-saudi-arabia-uae> [accessed 14 July 2017].

relevant examples such as GHOSTNET and the Office of Personnel Management breach—both reportedly Chinese in origin—testify to an extensive history of cyber-espionage with clear strategic importance, though arguably more analogous to espionage than warfare directly.[361] These examples still indicate the almost seamless reach of cyber operations into the heart of otherwise sovereign states which can enable warfare-like behaviours very easily.[362] While Russia appears to be the most engaged in this behaviour at present, or at least the most overt about it, it is far from alone. The overwhelming majority of states now possess some measure of institutionalised cyber capacity, with some states installing it directly as a military command. The elevation of US CYBERCOM to an independent military command testifies to the latest step in cyber's growing maturity.[363] A trend further underscored by Edward Snowden's revelations and a steady stream of leaks pointing to vast and sophisticated capabilities in the shadows the world over.[364]

[361] See: Information Warfare Monitor, *Tracking GhostNet: Investigating a Cyber Espionage Network* (Information Warfare Monitor, 29 March 2009), 53; Dominic Rushe and agencies, 'OPM Hack: China Blamed for Massive Breach of US Government Data', *The Guardian*, 5 June 2015, section Technology <http://www.theguardian.com/technology/2015/jun/04/us-government-massive-data-breach-employee-records-security-clearances> [accessed 14 February 2016]; Mandiant, *APT1: Exposing One of China's Cyber Espionage Units* (Mandiant, 2013) <http://intelreport.mandiant.com/Mandiant_APT1_Report.pdf> [accessed 2 August 2015].

[362] For an overview of the Russian campaign interfering with the US 2016 election, see: Julie Vitkovskaya, Samuel Granados and John Muyskens, 'Hacking Democracy: The Post's New Findings in Russia's Bold Campaign to Influence the U.S. Election', *Washington Post*, 2017 <https://www.washingtonpost.com/graphics/2017/world/national-security/russia-hacking-timeline/> [accessed 2 August 2017]; For a more comprehensive examination of the deeper and more sustained campaign against Ukraine as a whole, see: Kenneth Geers and NATO Cooperative Cyber Defence Centre of Excellence, *Cyber War in Perspective: Russian Aggression Against Ukraine*, 2015 <https://ccdcoe.org/sites/default/files/multimedia/pdf/CyberWarinPerspective_full_book.pdf> [accessed 10 January 2016].

[363] US Department of Defense, 'DoD Initiates Elevation Process for U.S. Cyber Command to a Unified Command', *U.S. Department of Defense*, 2017 <https://www.defense.gov/News/News-Releases/News-Release-View/Article/1282920/dod-initiates-elevation-process-for-us-cyber-command-to-a-unified-combatant-com/> [accessed 20 August 2017].

[364] See, for example, Ellen Nakashima, 'Powerful NSA Hacking Tools Have Been Revealed Online', *Washington Post*, 16 August 2016, section National Security <https://www.washingtonpost.com/world/national-security/powerful-nsa-hacking-tools-have-been-revealed-online/2016/08/16/bce4f974-63c7-11e6-96c0-37533479f3f5_story.html> [accessed 10 September 2016].

Examples directly analogous to conventional warfare are—thankfully—harder to come by given the absence of major hostilities between developed states since cyberspace came to prominence. Nevertheless, indications of preparation for that eventuality are far more common. The UK's GCHQ, for example, recently cautioned in a leaked internal memo that state-sponsored hackers had more than likely infiltrated the industrial control system of the UK's energy sector.[365] Another recent example featured the infiltration of an American nuclear power plant. As the New York Times reported, "two people familiar with the investigation say that, while it is still in its early stages, the hackers' techniques mimicked those of the organization known to cybersecurity specialists as "Energetic Bear," the Russian hacking group that researchers have tied to attacks on the energy sector since at least 2012."[366] Critical infrastructure has emerged as a frequent focal point for such efforts, prompting growing efforts to address the looming threat.[367] An example of what attacks against that infrastructure might look like comes from Ukraine, where malware dubbed 'CRASHOVERIDE' (presumably referencing the equally wonderful and terrible 1995 film, Hackers) heavily disrupted the Ukrainian electricity network at the end of 2016.[368] Particularly

[365] Alex Hern, 'State Hackers "Probably Compromised" Energy Sector, Says Leaked GCHQ Memo', *The Guardian*, 18 July 2017, section Technology <http://www.theguardian.com/technology/2017/jul/18/energy-sector-compromised-state-hackers-leaked-gchq-memo-uk-national-cybersecurity-centre> [accessed 14 July 2017].

[366] Nicole Perlroth, 'Hackers Are Targeting Nuclear Facilities, Homeland Security Dept. and F.B.I. Say', *The New York Times*, 6 July 2017, section Technology <https://www.nytimes.com/2017/07/06/technology/nuclear-plant-hack-report.html> [accessed 10 August 2017].

[367] For a comprehensive overview of critical infrastructure protection from an American standpoint, see: Ted G. Lewis, *Critical Infrastructure Protection in Homeland Security: Defending a Networked Nation* (John Wiley & Sons, 2014); Though not all are convinced, particularly when noting that the bulk of malicious behaviour to date has been criminal in nature, not strategic, see: Clement Guitton, 'Cyber Insecurity as a National Threat: Overreaction from Germany, France and the UK?', *European Security*, 22:1 (2013), 21–35.

[368] Ellen Nakashima, 'Russia Has Developed a Cyberweapon That Can Disrupt Power Grids, According to New Research', *Washington Post*, 12 June 2017, section National Security <https://www.washingtonpost.com/world/national-security/russia-has-developed-a-cyber-weapon-that-can-disrupt-power-grids-according-to-new-research/2017/06/11/b91b773e-4eed-11e7-91eb-9611861a988f_story.html> [accessed 2 August 2017]; Dragos Inc., *CRASHOVERRIDE: Analysis of the Threat to Electric Grid Operations* (Dragos Inc., 12 June 2017) <https://dragos.com/blog/crashoverride/CrashOverride-01.pdf> [accessed 2 September 2017].

of note is that this attack aimed to 'paralyse, not profit' marking it as distinct from more mundane criminal acts.[369] We can safely assume there is far more going on behind the curtain.

The rapid pace of developments, the newness of the conceptual terrain in which we find ourselves, and the pervasive secrecy surrounding them pose significant challenges from a research perspective. In examining cyber warfare we are taking aim at a target that is both fast moving and largely obscured. For the sake of parsimony, I adopt the following working definition for cyber warfare: state actions pursing politics by other means in cyberspace which constitute a serious security threat to other states, be it real or perceived.[370] This definition is quite restrictive and contains two important distinctions. First, it narrows the focus to strategic actions in cyberspace taken by, or indirectly for, state actors. Cyberspace is an asymmetric environment as, in the words of then US Deputy Secretary of Defence Lynn, "a dozen determined computer programmers can, if they find a vulnerability to exploit, threaten the United States' global logistics network, steal its operations plans, blind its intelligence capabilities, or hinder its ability to deliver weapons on target."[371] As such, non-state actors are a prominent factor in cyberspace.[372] However, the role of asymmetric and non-state actors is a challenging puzzle in its own right which operates by different principles, and is worthy of its own analysis. As it falls beyond the scope of the historical analyses on which this discussion is based, I exclude it at the definitional level for the sake of clarity and to maintain

[369] Andrew E. Kramer, 'Ukraine Cyberattack Was Meant to Paralyze, Not Profit, Evidence Shows', *The New York Times*, 28 June 2017, section Europe <https://www.nytimes.com/2017/06/28/world/europe/ukraine-ransomware-cyberbomb-accountants-russia.html> [accessed 10 August 2017].
[370] This basic definition is adapted from Green, see: Green, *Cyber Warfare*, 2.
[371] William F. III Lynn, 'Defending a New Domain - The Pentagon's Cyberstrategy', *Foreign Affairs*, 89 (2010), 98–99.
[372] For some further discussion on the asymmetric potential of cyberspace and its ramifications, see: John Arquilla, 'The Computer Mouse That Roared: Cyberwar in the Twenty-First Century', *Brown Journal of World Affairs*, 18:1 (2011), 39–48; Tom Kellermann, 'Civilizing Cyberspace', *Georgetown Journal of International Affairs*, 2011, 180–84; Jonathan A. Ophardt, 'Cyber Warfare and the Crime of Aggression: The Need for Individual Accountability on Tomorrow's Battlefield', *Duke Law & Technology Review*, 2010 (2010), [i]-[xxvii].

a clear linkage to the analogical basis established in the preceding chapters. The second key distinction is to constrain the discussion to consideration of 'serious' threats, be they perceived or real. There are a wide range of adversarial behaviours possible between state actors in cyberspace. Many do not favourably compare with warfare and are unsuitable for regulation under its auspices – espionage via cyberspace for example. Limiting the following analysis to just those behaviours comparable to warfare again clarifies the task by focusing on areas most analogous to the historical cases.

A final point before proceeding is to establish that cyber warfare is an 'innovative' form of war as defined in Chapter 1. Specifically, I held that innovative warfare is that which imposes significant changes on doctrine and practice. This is clearly the case with cyber warfare, with most states having only recently begun the task of formally integrating cyber warfare into their doctrine and practice.[373] Indicating the novelty of this development, public strategy statements typically raise as many questions as they answer, and revolve more around the intent to develop strategy and basic organisational capabilities than they do to articulate it.[374] Exactly how well cyber warfare is understood by states internally is uncertain but if the historical examinations are any guide it is reasonable to surmise that state understandings are also distinctly limited at this juncture. General Michael V. Hayden, United States Air Force (Retired), a former Director of the CIA and NSA, remarked pointedly that:

> Rarely has something been so important and so talked about with less and less clarity and less apparent understanding … I have sat in **very** small group meeting in Washington … unable (along with my colleagues) to decide on a

[373] JA Lewis & K Timlin, *Cybersecurity and cyber warfare: Preliminary assessment of national doctrine and organization*, UNIDIR, 2011, <http://www.unidir.org/publications>.
[374] For an overview of national strategies as of 2011, see: Lewis and Timlin, *Cybersecurity and Cyberwarfare: Preliminary Assessment of National Doctrine and Organization*.

> course of action because we lacked a clear picture of the long term legal and policy implications of **any** decision we might make.[375]

Meanwhile, public policy and academic discourses have proceeded little further than initial conceptual and definitional steps with little consistency between them, with the exception of several laudable multi-disciplinary efforts in recent years.[376] Nonetheless, fundamental debates over the nature and implications of cyber warfare rage on, while its inherent malleability, variability, and existence across multiple media, render it particularly resistant to efforts at grand strategy.[377] We should not therefore expect a grand strategist the likes of a Mahan, Trenchard, or Douhet to solidify the rudiments of cyber warfare overnight.[378] In all, the process of exploration—let alone integration—is still in its infancy.

These observations mirror closely those of the past. For all the extensive theorising on the potential impact of submarines, chemicals, and aircraft upon the battlefields of the future in the decades before the reality of their introduction, most contemporary actors were consistently wrong in their expectations. The submarine's aptitude for anti-commerce operations was barely recognised, and then widely derided when raised. Grand predictions of aerial bombardment obliterating cities within hours of a declaration fell entirely flat for want of the technical capability to achieve it, and still failed to translate directly to victory even when the destruction of cities became more feasible in WWII. Until each innovation was

[375] Emphasis in original. Hayden, quoted in Joseph S. Nye, 'Nuclear Lessons for Cyber Security', *Strategic Studies Quarterly*, Winter, 2011, 18.
[376] See, for example, Green, *Cyber Warfare*; Brandon Valeriano and Ryan C. Maness, *Cyber War versus Cyber Realities: Cyber Conflict in the International System* (Oxford University Press, 2015).
[377] Martin C. Libicki, 'Why Cyber War Will Not and Should Not Have Its Grand Strategist', *Strategic Studies*, 23 (2014); Martin C. Libicki, 'Cyberspace Is Not a Warfighting Domain', *I/S: A Journal of Law and Policy for the Information Society*, 8 (2012), 325–439.
[378] Ibid.

seen unleashed in open warfare between major states, indications of its role and effect gleaned from smaller conflicts provided only hints.

The same is almost certainly true today. Despite an already sizeable and rapidly growing body of literature, it remains inherently speculative as we have just enough appreciation of cyber from its low-intensity application thus far to reasonably expect that it will find introduction to conflict in the future, but not enough understanding to confidently state how. Predictions often point to the subversion of major infrastructure, financial, and telecommunication systems at national—or even global levels. But, just as the true niche of the submarine was not widely recognised until its use, the same can easily be true of cyber. As we progress further and further into the information age, with larger and larger portions of our states, societies, and economies deeply invested in cyber, there are inestimable possible avenues for cyber's application to conflict. The simple truth is that we are ill-positioned to anticipate what the first 'true' cyber war will resemble. Unfortunately, we stand on the precipice, considering the fog of cyber war.

Therefore, as in the past, we find ourselves contemplating a form of innovative warfare in advance of its widespread use, and before a (remotely) comprehensive appreciation of its complexities. The same pervasive ambiguity and uncertainty that defined the historical cases is present for cyber warfare —possibly even more so. Accordingly, it is important to note that cyber warfare may change immensely from how we presently understand it and the assumptions informing the analysis that follows.

With the groundwork now established, I turn to the core question: what does it mean to regulate cyber warfare in advance? I explore this in two parts. First, I consider the present

condition of specificity and concordance supporting a regulatory norm. Second, I assess cyber warfare against the key historical findings.

The presence of barriers to regulation in advance

The immediate question for the regulation of cyber warfare in advance is whether it is also subject to the barriers to specificity and concordance found in the historical cases. In other words, can norm entrepreneurs generate detailed guidelines to inform a regulatory norm, and is there concordant supporting regulation sufficient to secure and sustain norm establishment? If so, this would strongly suggest a comparable outcome to that of the historical cases entering WWI, where the degrees of ambiguity saw states interpret and enact each as they saw fit. The answer, it appears, is most certainly yes.

Specificity

There are a wide range of uncertainties regarding cyber warfare ensuring that high degrees of ambiguity will remain, which will preclude the generation of detailed and/or well understood behavioural expectations. Much like the historical cases before, the novelty of a form of warfare that operates in new conceptual and, in some ways spatial, dimensions presents major difficulties. However, for cyber warfare the challenges are considerably larger and we approach them with even less information available to work from than in the past.

At a fundamental level, cyber warfare represents a larger departure from present understandings than did the historical cases. Not only does cyber warfare introduce a new avenue of warfare, somewhat mirroring the spatial shift aviation introduced in the past, it also introduces new methods and effects that are largely distinct from those which came before. Their novelty is such that even within specific discipline groups basic definitions and conceptualisations are often inconsistent.[379] As Dunn puts it, "… to gain an understanding of security in the digital age, we take on an exceedingly difficult task. Not only has this issue hardly ever been addressed before, leaves us with barely any literature to base our analysis on—we also enter a realm of vast extent, indistinct boundaries, and a sloppy conceptual arsenal."[380] Some noteworthy efforts in recent years are developing the beginnings of shared definitional and conceptual ground, but these are only first steps.[381] At best, if successful these efforts will progress our understandings to a point comparable with the historical cases where we generally understand the innovation in the abstract but cannot yet understand its practical implications, similar to how The Hague delegates understood what bombardment was but were not yet confident in their understandings of aviation or what bombardment from the skies would entail. Even in that best-case scenario, regulation in advance would still encounter levels of uncertainty that were sufficient to preclude meaningful specificity in the past.

Unfortunately, we do not appear headed for a best-case scenario. High levels of uncertainty surround both the medium and the means of cyber warfare, and these are likely to remain for the foreseeable future. Norm entrepreneurs and states engaging in entrepreneurship

[379] J. Carr, *Inside Cyber Warfare*, 2nd ed. (O'Reilly, 2012), 1–2.
[380] Quoted in Eriksson and Giacomello, *International Relations and Security in the Digital Age*, 83.
[381] For some noteworthy efforts at resolving the issues of basic terminology conceptualisation, see: Valeriano and Maness, *Cyber War versus Cyber Realities*, chap. 2; and Green, *Cyber Warfare*.

therefore need to arrive at an enormous range of new understandings and standards by which to measure actions, consequences, and appropriateness in cyberspace that run far beyond those in the historical cases, none of which can be trivially resolved in advance of widespread use. The closer parallel to the past, then, is perhaps gas shells at The Hague. We have some idea, but may not yet grasp all the salient details or have a complete picture of the innovation we contemplate regulating. I briefly explore several areas of uncertainty to illustrate its degree and further note areas likely to prove particularly difficult to resolve.

First and foremost, at a fundamental level, we cannot rely on the consistency of cyber warfare in terms of its means or medium over time, as we might in other areas. Explosives behave in much the same way conflict to conflict, and although their potency may increase, their effects can be reliably quantified based on that potency and the location of its detonation via the inverse-square law. The same is not necessarily true of cyber warfare. Its effects can be highly variable event to event—even when using the same method against a comparable target—as well as changing dramatically over time, while the underlying environment is fundamentally malleable.

The nature of cyberattacks cannot be easily quantified or reliably predicted due to the complexity of the computer software through which they act, and the complex range of interactions with the near-infinite possible hardware configurations on which it might run.[382] This all but guarantees variable and unexpected behaviours. For example, carefully vetted software used by millions of people every day invariably includes numerous bugs that cause it to act in unexpected and undesirable ways. In fact, the guaranteed existence of those bugs

[382] For an overview of the possible range of cyberattacks as we presently understand them, see: Gregory Rattray and Jason Healey, 'Categorizing and Understanding Offensive Cyber Capabilities and Their Use', in *Proceedings of a Workshop on Deterring CyberAttacks: Informing Strategies and Developing Options for US Policy* (National Academy of Sciences (US), 2010), 77–97 <http://www.nap.edu/catalog/12997.html>.

is what enables cyber warfare in the first place. Moreover, those bugs vary system to system, software to software, and network to network. They are the means through which cyberattacks function, so too their behaviour and effect. Thus, attempting to quantify cyberattacks and define their consequences relative to acceptable use comes with a much wider margin of error as their effects may differ immensely depending on the underlying complexity of their target and construction, which is extremely difficult to anticipate. Furthermore, as cyberattacks are not limited by immediate physical proximity they can just as easily cause disruptions or damage on another continent as against their intended target. This may occur without the intent—or even the knowledge—of the aggressor. Stuxnet, for example, was first discovered publicly when it spread to machines across Europe, far beyond its intended targets in Iran. Fortunately, it was carefully programmed to avoid unintended damage, but that is by no means guaranteed and spill over—either direct or through repurposed cyber weapons—is effectively inevitable.[383]

Furthermore, as cyberspace as a medium is synthetic, we can change its most fundamental characteristics at will. In fact, we are doing so at present—very slowly—with the transition from Internet Protocol Version 4 (IPv4) to IPv6.[384] This is a routine and transparent shift for end-users, but it almost completely alters the underlying logics and interactions of computer systems and networks worldwide. This is the rough equivalent of changing the laws of physics that govern flight, for example. In Chapter 1 I analogised regulation in advance to aiming at a

[383] The ransomware Petya (a type typically criminal in nature) is argued to be either concealment for a state-sponsored attack, or the result of repurposed attack code. Andy Greenberg, 'Petya Ransomware Epidemic May Be Spillover From Cyberwar: Ukrainians Say Petya Ransomware Hides State-Sponsored Attacks', *Wired*, 28 June 2017 <https://www.wired.com/story/petya-ransomware-ukraine/> [accessed 30 June 2017].
[384] For the progress of the transition and a brief explanation of its function, see: Iljitsch van Beijnum, 'IPv6 Celebrates Its 20th Birthday by Reaching 10 Percent Deployment', *Ars Technica*, 1 March 2016 <http://arstechnica.com/business/2016/01/ipv6-celebrates-its-20th-birthday-by-reaching-10-percent-deployment/> [accessed 13 January 2017].

moving target while also in motion. To strain the metaphor, the variability and malleability of the means and medium of cyber warfare is such that the moving target is now also changing its shape, size, and colour seemingly at random.

Second, and compounding the fundamental difficulties, we can only get a limited glimpse of cyber warfare in practice and as it develops. Pernicious secrecy is to be expected for innovative warfare, of course, but it takes on new dimensions for cyber warfare. In addition to usually high degrees of secrecy, cyberattacks are particularly covert in nature and typically do not announce their presence. There is therefore a minimal flow of information about their nature or effects to aid in conceptualising or defining cyber warfare, with the information on interstate cyber warfare reaching the public domain being only the tip of the iceberg. Accordingly, each state operates from its own largely siloed body of experiences as aggressor and defender. There is a disincentive to reveal one's capabilities or a target's vulnerabilities when a successful attack has been conducted, while there is also a disincentive to publicise one's victimhood when attacked lest it reveal vulnerability and invite further attacks. For that matter, victims of a cyberattack may not even know they've suffered one until years later, if at all. Even when discovered, assessing the means and effects can be difficult as cyber-attackers can cover their tracks or leave no tracks at all.[385]

The lack of overt or recognisable signs leads to a further of complication: the attribution problem.[386] As Libicki notes, "cyberattacks can be launched from literally anywhere, including

[385] Stuxnet, for example, concealed the physical damage it caused as an elevated rate of mechanical failure spread over an extended period.

[386] An inability to attribute the source and responsibility of an attack has a wide range of implications for cyber warfare beyond regulatory dimension, not the least of which being its effects on deterrence and coercion. See: F. Hare, 'The Significance of Attribution to Cyberspace Coercion: A Political Perspective', in *Cyber Conflict (CYCON), 2012 4th International Conference On*, 2012, 1–15 <http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6243970> [accessed 14 February 2013]; See also, Nicholas Tsagourias, 'Cyber Attacks, Self-Defence and the Problem of Attribution', *Journal of Conflict and Security Law*, 17:2 (2012), 229–44.

cybercafés, open Wi-Fi nodes, and suborned third-party computers. They do not require expensive or rare machinery. They leave next to no unique physical trace. Thus, attribution is often guesswork."[387] Even much touted major incidents like Stuxnet or the Estonian and Georgian cyberattacks are still only circumstantially attributed in the public domain.[388] States may possess better methods of attribution internally, but if these are dependent on secret intelligence then they are unlikely to share that information readily, and may not believe attributions coming from other states with possibly conflicting interests. Furthermore, the indistinct nature of cyberattack tools means that false-flag and proxy cyberattacks are near-trivial for state actors with the ability to achieve benefit of a clandestine service. After several decades of scholarship addressing the issue recent entries exhibit moments of optimism, but also frequently caution against the direct application of deterrence concepts to cyberspace, while the fundamental problem remains and may be on some level intractable.[389] Without the ability to attribute cyberattacks and respond to norm violations the efficacy of any regulation is doubtful, in advance or otherwise.

Overall, the pervasive uncertainty surrounding cyber warfare is pervasive and likely to remain for the foreseeable future. This leaves many questions fundamental to regulation unanswered and unanswerable. Even basic questions of scope, comparable to those that

[387] Martin C. Libicki, *Cyberdeterrence and Cyberwar*, Project Air Force (RAND Corp., 2009), xvii.
[388] See: Stephen Herzog, 'Revisiting the Estonian Cyber Attacks: Digital Threats and Multinational Responses', *Journal of Strategic Security*, 4:2 (2011), 49–60; See also: Alexander Klimburg, 'Mobilising Cyber Power', *Survival*, 53:1 (2011), 41–60; Alexander Klimburg, 'The Whole of Nation in Cyberpower', *Georgetown Journal of International Affairs*, 2011, 171–79.
[389] See, for example: Uri Tor, '"Cumulative Deterrence" as a New Paradigm for Cyber Deterrence', *Journal of Strategic Studies*, 40:1–2 (2017), 92–117; Dorothy E. Denning, 'Rethinking the Cyber Domain and Deterrence', *Joint Forces Quarterly*, 2nd Quarter, 2015 <http://calhoun.nps.edu/handle/10945/45130> [accessed 14 September 2016]; Ewan Lawson, 'Deterrence in Cyberspace: A Silver Bullet or a Sacred Cow?', *Philosophy & Technology*, 2017, 1–6; Mariarosaria Taddeo, 'On the Risks of Relying on Analogies to Understand Cyber Conflicts', *Minds and Machines*, 26:4 (2016), 317–21; Amir Lupovici, 'The "Attribution Problem" and the Social Construction of "Violence": Taking Cyber Deterrence Literature a Step Forward', *International Studies Perspectives*, 17:3 (2016), 322–42.

undid early steps regarding aerial bombardment and emerged surrounding submarines, remain extremely murky. For example, what defines a legitimate 'military objective' in cyberspace?[390] Traditionally this is a target used for military purposes or that makes a significant contribution to a belligerent's war effort. Are power grids an appropriate target for cyberattacks if they serve military facilities alongside civilian hospitals? If so and if the attack is only disruptive, not destructive, how severe are the effects permitted for the civilian network relative to the disruption of military networks? Furthermore, as cyberattacks are not limited by immediate physical proximity and can just as easily cause disruptions or damage on another continent as against their intended target, how do we assess those effects? If measured by intent alone, as with the early periods of aerial bombardment, then significant worldwide effects far beyond the territory or forces of the belligerents might be excused given belief in a sufficiently weighty target. For that matter, how do we assess a cyberattack on state B by state A where the attack is routed through or conducted in neutral states C, D, and E? There are no unique or nominally military assets necessary in the neutral countries for this to occur. Do states C, D, and E then become parties to the attack, having violated Article 5 of the Geneva Convention requiring neutral states to avoid violation of their territory? Is state B then permitted to attack those states or their infrastructure in defensive-retaliation or to prevent a repeat attack? The answers to any of these questions are almost certain to differ wildly state-by-state, and in fact already do as I explore shortly.

The immediate consequence is that there are a great many unresolved and fundamental questions surrounding cyber warfare. Any normative and/or formal regulatory attempt will

[390] For a much more comprehensive examination of these issues and more, see: Jens David Ohlin, Kevin Govern and Claire Finkelstein, *Cyber War: Law and Ethics for Virtual Conflicts* (Oxford University Press, 2015); Green, *Cyber Warfare*.

therefore struggle to define acceptable behaviours, practices, targets, or consistent and detailed standards by which these can be assessed. As a result, generating well-understood definitions of acceptable and unacceptable conduct is mired in fundamental ambiguity highly comparable to the historical cases. Therefore, we are led to conclude that meaningful norm specificity is precluded in turn as far lesser complications were sufficient to preclude an effective response to submarines and aviation. It is a near certainty, then, that any regulatory norms addressing cyber warfare in advance will exhibit high degrees of ambiguity, ensuring 'incomplete' establishment at best, or fail entirely.

Concordance

In addition to the numerous areas of unresolved ambiguity precluding specificity, major states presently conceptualise cyber warfare quite differently, emphasise different areas of concern in their interpretations of cyber warfare, and focus on divergent concepts of regulation. Thus, not only are states unlikely to agree in the process of resolving the uncertainties examined above, they will also disagree fundamentally on the need and purposes of regulation.

Reminiscent of the discourses at The Hague at the turn of the previous century, state positions are broadly reflective of their respective strategic interests. Waxman describes the situation as one of "divergent strategic interests [pulling] their preferred doctrinal interpretations and aspirations in different directions, impeding formation of a stable international consensus."[391]

[391] Matthew C. Waxman, *Cyber-Attacks and the Use of Force: Back to the Future of Article 2(4)* (Social Science Research Network, 16 March 2011), 425–26 <http://papers.ssrn.com/abstract=1674565> [accessed 19 August 2013].

Absent the unifying effects of a *raison d'être*, which I will return to later in the chapter, this did not bode well in the historical cases.

The most prominent split is between Western states centred around the US and NATO, and the Shanghai Cooperation Organisation (SCO) with Russia and China being the most prominent members. Informing these two divergent and strategically driven constructions of cyber warfare are conflicting interpretations down to the definitional, conceptual, and even linguistic levels.[392] As Giles and Hagestad succinctly put it, "Russian and Chinese doctrine and writing emphasise a very different set of security challenges to those which normally concern the US and UK. There is the additional complication of direct translations of specificity terms from Russian and Chinese which resemble English-language terms, and therefore give the misleading impression of mutual understanding, while in fact referring to completely different concepts."[393]

Led by the US, Western states have adopted a view of cyber warfare that does not support expansive international regulation. The 2011 White House *International Strategy for Cyberspace* noted that "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. Long-standing international norms guiding state behaviour—in times of peace and conflict—also apply in cyberspace."[394] This is a consistent theme in the response to the international security ramifications of cyber warfare. For example, the 2008 Center for

[392] See: Keir Giles and William Hagestad, 'Divided by a Common Language: Cyber Definitions in Chinese, Russian and English', in *Cyber Conflict (CyCon), 2013 5th International Conference On* (IEEE, 2013), 1–17 <http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6568390> [accessed 2 September 2014].
[393] Ibid.
[394] The White House (US), 'International Strategy for Cyberspace: Prosperity, Security, and Openness in a Networked World', 2011, 9 <https://www.whitehouse.gov/sites/default/files/rss_viewer/international_strategy_for_cyberspace.pdf> [accessed 1 September 2015].

Strategic and International Studies (CSIS) Commission on Cybersecurity for the 44th Presidency stated:

> "The U.S. willingness to cooperate with other governments on cybersecurity will be an important component of U.S. advocacy. That cooperation should focus on establishing norms, which are expectations or models for behaviour ... A normative approach to international cybersecurity focuses on how countries should behave."[395]

Echoed by President Obama's first Cyberspace Policy Review in 2009, stating:

> The Nation also needs a strategy for cybersecurity designed to shape the international environment and bring like-minded nations together on a host of issues, such as technical standards and acceptable legal norms regarding territorial jurisdiction, sovereign responsibility, and use of force. International norms are critical to establishing a secure and thriving digital infrastructure ... Only by working with international partners can the United States best address these challenges, enhance cybersecurity, and reap the full benefits of the digital age.[396]

And again in 2010 by Mike McConnell, former director of National Intelligence and the National Security Agency:

[395] Center for Strategic and International Studies (CSIS), *Commission on Cybersecurity for the 44th Presidency*, December 2008, 20–21 <https://csis.org/program/commission-cybersecurity-44th-presidency> [accessed 1 June 2012].
[396] The White House (US), 'Cyberspace Policy Review: Assuring a Trusted and Resilient Information and Communications Infrastructure', 2009, iv.

> "[international cooperation and engagement on cyber-deterrence] means little unless we back it up with practical policies and international legal agreements to define norms and identify consequences for destructive behaviour in cyberspace."[397]

Clearly, US policy makers consider norm entrepreneurship to be a worthwhile route and see a role for norms in international agreements limiting cyber warfare, but also consistently frame it as a matter of non-codified international norms rather than formalised regulatory statements. To support this, they are pursuing "risk reduction on a global scale [requiring] effective law enforcement; internationally agreed norms of state behaviour; measures that build confidence and enhance transparency; active, informed diplomacy; and appropriate deterrence."[398] 'Appropriate deterrence,' it appears, includes the direct escalation from cyberattack to kinetic retaliation.[399] Though despite a preponderance of conventional, cyber, and soft-power capabilities, the US and its allies derive "little or no deterrent effect" at present, and have struggled to develop this approach beyond its initial stages.[400]

One recent example of this policy approach comes in the form of a bi-lateral agreement addressing, the 'U.S.-China Cyber Agreement' announced in September 2015. The agreement constitutes an in-principle commitment that "neither country's government will conduct or knowingly support cyber-enabled theft of intellectual property, including trade secrets or

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[397] Mike McConnell, 'Mike McConnell on How to Win the Cyber-War We're Losing', *The Washington Post*, 28 February 2010, section Opinions <https://www.washingtonpost.com/wp-dyn/content/article/2010/02/25/AR2010022502493.html> [accessed 1 September 2011].
[398] The White House (US), 'International Strategy for Cyberspace: Prosperity, Security, and Openness in a Networked World', 9.
[399] David Alexander, 'U.S. Reserves Right to Meet Cyber Attack with Force', *Reuters*, 16 November 2011 <http://www.reuters.com/article/2011/11/16/us-usa-defense-cybersecurity-idUSTRE7AF02Y20111116> [accessed 1 September 2013].
[400] Quoted in John Markoff Sanger David E. and Thom Shanker, 'The U.S. Studies the New Art of Cyberwar', *The New York Times*, 25 January 2010 <http://www.nytimes.com/2010/01/26/world/26cyber.html> [accessed 25 March 2012].

other confidential business information, with the intent of providing competitive advantages to companies or commercial sectors."[401] President Obama described the behaviour targeted as "an act of aggression that has to stop", warning that the US is "prepared to [impose] some countervailing actions to get [China's] attention."[402] This is a relatively narrow range of behaviours which notably excludes governmental espionage, and most behaviour directly related to cyber warfare in the Clausewitzian sense. Neither does it define standards through which to interpret its scope, and while an agreement to cooperate with "requests to investigate cybercrimes, collect electronic evidence, and mitigate malicious cyber activity emanating" is encouraging, it is also hedged by the phrase "consistent with … national laws".[403] Much like the Russian-Estonian MLAT mentioned earlier, this is effectively useless if either state wishes to provide sanctuary. It is debateable how sincere this agreement is on both sides, but of course it is not a binding treaty, more realistically a first step upon which to build and develop agreed-upon thresholds and realms of tolerable behaviour—though even this is now thrown into considerable doubt by the fickleness of the Trump administration. Interestingly, the agreement also concedes a form of *de facto* legitimacy to some realms of behaviour by omission which have drawn previous objection, at least for the moment.

Beyond that, the Western approach to the formal regulation of cyber warfare has a light touch, best exemplified by *The Tallinn Manuals on the International Law Applicable to Cyber Warfare* from NATO's Cooperative Cyber Defence Centre of Excellence, itself created in

[401] 'Remarks by the President to the Business Roundtable', *WhiteHouse.Gov*, 2015 <https://obamawhitehouse.archives.gov/the-press-office/2015/09/16/remarks-president-business-roundtable> [accessed 17 April 2017].
[402] 'Remarks by the President to the Business Roundtable'.
[403] ibid.

response to the cyberattacks on Estonia in 2007.[404] These mark a significant effort towards resolving some of complex issues applying international law to cyberspace via 'soft-law.' This circumvents the difficulties of a treaty process, but lacks the weight of ratification or even nominally binding status on its authors, let alone other states.[405] In the broad sense, the Tallinn Group of Experts found that the existing standards of *jus in bello* applied to cyberspace just as to any other domain, and its regulation was primarily "a matter of identifying the relevant legal principles that bear on the person, place, object, or type of activity in question."[406] In this vein, the Group of Experts held that "a cyber operation constitutes a use of force when its scale and effects are comparable to non-cyber operations rising to the level of a use of force."[407] In other words, cyber warfare only becomes a matter of regulatory concern under the standards of warfare when comparably 'severe' with conventional acts of force. Cyberattacks and events at a lesser severity while still strategically significant are the reserve of other legal domains and fall under the various other risk reduction strategies noted above.[408]

Version 2.0 of the Tallinn manual, formally released in February 2017, marks the most recent effort in this vein. It is described as:

> "[covering] a full spectrum of international law as applicable to cyber operations, ranging from peacetime legal regimes to the law of armed

[404] The first manual was released in 2013, a second and expanded version is due for publication in March 2017. See: CCDCOE, *The Tallinn Manual on the International Law Applicable to Cyber Warfare*, 2013 <http://www.ccdcoe.org/249.html> [accessed 21 March 2013].
[405] CCDCOE, *The Tallinn Manual on the International Law Applicable to Cyber Warfare*.
[406] Michael N. Schmitt, 'International Law in Cyberspace: The Koh Speech and Tallinn Manual Juxtaposed', *Harvard International Law Journal*, 54:13 (Online) (2012), 17.
[407] Schmitt, 'International Law in Cyberspace: The Koh Speech and Tallinn Manual Juxtaposed', 19.
[408] Version 2.0 of the Tallinn manual is expected to expand on these areas by applying the wider body of international law not directly related to warfare.

> conflict. The analysis of a wide array of international law principles and regimes that regulate events in cyber space includes principles of general international law, such as the sovereignty and the various bases for the exercise of jurisdiction. The law of state responsibility, which includes the legal standards for attribution, is examined at length. Additionally, numerous specialised regimes of international law, including human rights law, air and space law, the law of the sea, and diplomatic and consular law are examined within the context of cyber operations."[409]

Early perspectives from the academic community approach it with more trepidation. Schmitt, one of the chief authors of the manual, makes a strong argument for the application of due diligence concepts to cyberspace.[410] However, even were this considerable burden accepted by states, an equally considerable window would remain for states offering tactic sanctuary towards actors operating within their sovereignty whose actions align with state interests. Jensen and Watts dub this the 'attribution-response gap' and aptly highlight many of its troublesome facets.[411] In essence, the gap is between an event occurring that requires a response, and the requirements to establish sufficient attribution equating to enough responsibility to then motivate a response. In fact, the 2007 Estonian attacks appear to already demonstrate that gap in practice. Little investigatory progress towards serious attribution could be made because of Russia's refusal to cooperate with Estonian

[409] CCDCOE, 'Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations to Be Launched | CCDCOE', 2017 <https://ccdcoe.org/tallinn-manual-20-international-law-applicable-cyber-operations-be-launched.html> [accessed 7 February 2017].

[410] Michael N. Schmitt, 'In Defense of Due Diligence in Cyberspace', *Yale Law Journal Forum*, 125:68 (2015) <https://papers.ssrn.com/abstract=2622077> [accessed 4 September 2017].

[411] Eric Talbot Jensen and Sean Watts, 'A Cyber Duty of Due Diligence: Gentle Civilizer or Crude Destabilizer Symposium: Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations', *Texas Law Review*, 95 (2016), 1564.

investigators, despite the requested cooperation being "specifically enumerated in the Mutual Legal Assistance Treaty between Estonia and Russia."[412] At the very least a level of acquiescence—if not out-right complicity—was present from the Russian state to widen that gap. This gap alone presents an immense opportunity for significant concordance issues between states—potentially sufficient to even undermine any wider efforts towards agreement. After all, far lesser ambiguity rendered the interwar submarine provisions all but moot.

Barnsby and Reeves further argue that Tallinn 2.0—though an impressive and by far the most comprehensive effort to date applying established international law to cyberspace—functions only as a foundational document requiring "gap filler [that] will come in the form of either a treaty or by States "engaging in practices out of a sense of legal obligation (*opinio juris*) that, combined with similar practice by other States, eventually crystallizes into customary international law."[413] They further argue that the glacial pace of formal processes likely leaves the burden to state practice suggesting that—much as with the development of norms and regulation surrounding aerial bombardment—we can reasonably expect that process to err on the side of minimal constraint with direct and less-than-encouraging implications for concordance or meaningful restraint in practice. As discussed in Chapter 1 and demonstrated throughout the historical chapters, each state will engage with that process differently subject to its own meanings-in-use and internal processes.

[412] Rain Ottis, 'Analysis of the 2007 Cyber Attacks Against Estonia from the Information Warfare Perspective' (presented at the 7th European Conference on Information Warfare and Security, 2008), 179.
[413] Robert E. Barnsby and Shane R. Reeves, 'Give Them an Inch, They'll Take a Terabyte: How States May Interpret Tallinn Manual 2.0's International Human Rights Law Chapter Symposium: Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations', *Texas Law Review*, 95 (2016), 1529; PoKempner offers a broadly comparable perspective on the human rights implications of Tallinn 2.0. Dinah PoKempner, 'Squinting through the Pinhole: A Dim View of Human Rights from Tallinn 2.0 Symposium: Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations', *Texas Law Review*, 95 (2016), 1599–1618.

The implication for concordance is that even with the benefits of Tallinn 2.0 working to clarify, or at least to provide a common starting point, there remains immense scope for fundamental concordance issues reminiscent of those that undid the historical cases. Thus, while Tallinn 2.0 comprises a significant step towards a stronger understanding of existing international law as applied to cyber concerns, and makes a concerted effort to broaden the focus to include those acts in cyberspace that are not a clear fit for traditional LOAC, many of these behaviours fall well short of what might typically be considered warfare. It remains far from an easily applicable doctrine with considerable doubts as to its effectiveness.[414]

Furthermore, whatever progress Tallinn 2.0 has made, there are a collection of states apt to challenge it that played no part in its creation. On the contrary NATO, as the central locus of Tallinn 1.0 and 2.0, is an alliance oriented against some of the most active states seizing on the strategic potential of cyberspace. Russia and China notably, via the SCO have adopted a markedly different approach to formal regulation and another approach entirely in practical terms. A continuation of Russia's efforts pursuing formal restrictions on strategic actions in cyberspace, far beyond the more reserved take of the Tallinn manuals, represents the former.[415] A Russian draft proposal to a UN body in 1998 on 'development in the field of information and telecommunications in the context of security' aimed to develop "international law regimes for preventing the use of information technologies for purposes incompatible with missions of ensuring international stability and security."[416] A more recent

[414] Ohlin concludes that the recent Russian campaigns interfering with foreign political processes 'might be illegal' under the terms of Tallinn 2.0. Far from a strong declaration. Jens David Ohlin, 'Did Russian Cyber Interference in the 2016 Election Violate International Law Symposium: Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations', *Texas Law Review*, 95 (2016), 1579–98.

[415] Though these efforts are no doubt strategic in their own way, given the clearly poor prospects of success, they nevertheless indicate underlying areas of concern for the SCO member states which align with their wider attitudes as states with notably authoritarian inclinations, and a focus on information control.

[416] Christopher A. Ford, 'The Trouble with Cyber Arms Control', *The New Atlantis*, 29, 2010, 65.

effort in 2009 by the SCO targeted 'information war,' which they define in part as a "confrontation between two of more states in the information space aimed at … undermining political, economic, and social systems [or] mass psychologic [sic] brainwashing to destabilise society and state."[417] Where the West is primarily concerned about critical infrastructure and espionage, the security threats described by the SCO also include the spread of information harmful to the "spiritual, moral, and cultural spheres of other States."[418] Further indications of this view appear in an article by three Russian Defence Ministry experts for the UN Disarmament Journal in 2007, arguing that an "information campaign" directed against a state could be considered 'aggression' under the UN charter in certain circumstances—specifically "almost any information operation with a psychological basis implemented in peacetime with respect to another state, would qualify as intervention in domestic affairs. Even good intentions, such as the advancement of democracy, cannot justify such operations."[419] The specific inclusion of advancing democracy is telling. Lewis sums up the objective of these efforts well:

> "The thing that really unites them is their desire to control information, to control content. … They see information as a weapon. An official from one of those countries told me [that] Twitter is an American plot to destabilize foreign governments. That's what they think. And so they're asking, 'How do we get laws that control the information weapon?"[420]

[417] Tom Gjelten, 'SHADOW WARS: Debating Cyber "Disarmament"', *World Affairs*, 173:4 (2010), 36.
[418] Gjelten, 'SHADOW WARS', 36.
[419] Gjelten, 'SHADOW WARS', 36.
[420] Tom Gjelten, 'Seeing The Internet As An "Information Weapon"', *NPR.Org*, September 23, 201012:00 AM ET <http://www.npr.org/templates/story/story.php?storyId=130052701> [accessed 2 September 2012].

Thus, demonstrations of interest from the SCO member states in regulating cyber warfare differ at a fundamental level from those of the West, including immensely different basic concepts of what constitutes a severe or significant cyberattack. Ford notes that Russian and Chinese "approaches to cyber war and cyber arms control cannot … be disentangled from the national security threat [they] believe to be present by unchecked popular access to information."[421] Russian military theorists in particular conceptualise cyber warfare not as something distinct, but as a continuation of a "broader framework of information warfare, a holistic concept that includes computer network operations, electronic warfare, psychological operations, and information operations."[422] This, in turn, suggests that Russian decision makers will employ a "relatively low bar for employing cyber in ways that U.S. decision makers are likely to view as offensive and escalatory in nature."[423]

On the practical side, that lowered bar is reflected in their behaviour. A range of recent developments accompanied by relative quiet on the regulatory front indicate that the essence of SCO views is shifting away from regulation as a primary response, towards emphasising the strategic opportunities presented by open information flows *into* Western states rather than primarily perceiving information flows *from* Western states as a threat. Perhaps the most telling aspect here is that Russia and China, as the two major pillars of the SCO, are actively engaged in precisely the range of behaviours they initially sought to prohibit. China has engaged extensively in 'strategic information operations' intended to directly influence processes and outcomes in areas of strategic competition, with Taiwan as a clear focal

[421] Ford, 'The Trouble with Cyber Arms Control', 63.
[422] Michael Connell and Sarah Vogler, *Russia's Approach to Cyber Warfare (1Rev)* (Center for Naval Analyses Arlington United States, Center for Naval Analyses Arlington United States, 1 March 2017), i <http://www.dtic.mil/docs/citations/AD1032208> [accessed 15 May 2017].
[423] Connell and Vogler, *Russia's Approach to Cyber Warfare (1Rev)*, i.

point.[424] Taiwan is not alone in China's sights. China's most recent 'Science of Military Strategy' document, a periodical and generally authoritative study of China's strategic thought, goes as far as explicitly acknowledging the existence of 'specialised military network warfare forces', 'PLA-authorised forces', and 'non-governmental forces' arranged for network attack functions for the first time—including an acknowledgement of their use beyond the military domain.[425] Similarly, the 'Three Warfares' conceptual doctrine approved by the Central Military Commission in 2003 emphasises the exploitation of information flows at the core doctrinal level; public opinion warfare, psychological warfare, and legal warfare.[426] These are designed as coordinated and mutually reinforcing means to manipulate adversaries' strategies, defence policies, and perceptions of target audiences abroad—including via overt and covert media manipulation.[427] In other words, manipulating information flows for strategic effect is directly integrated into formal statements of strategy.

Russia too, as discussed, is heavily engaged in similar operations with comparable efforts to integrate information warfare into doctrine, with recent and ongoing efforts to influence European and American elections alongside an extensive cyber campaign against Ukraine as prominent examples.[428] The cyber operations targeting Ukraine reportedly amount to a

[424] Gary D. Rawnsley, 'Old Wine in New Bottles: China–Taiwan Computer-Based "Information Warfare" and Propaganda', *International Affairs*, 81:5 (2005), 1061–78.
[425] Joe McReynolds, 'China's Evolving Perspectives on Network Warfare: Lessons from the Science of Military Strategy', *Jamestown Foundation*, 15:8 (2015) <https://jamestown.org/program/chinas-evolving-perspectives-on-network-warfare-lessons-from-the-science-of-military-strategy/> [accessed 14 January 2016].
[426] Michael Raska, 'China and the "Three Warfares"', *The Diplomat*, 18 December 2015 <http://thediplomat.com/2015/12/hybrid-warfare-with-chinese-characteristics-2/> [accessed 14 January 2016].
[427] Else Kania, 'The PLA's Latest Strategic Thinking on the Three Warfares', *Jamestown Foundation*, 16:13 (2016) <https://jamestown.org/program/the-plas-latest-strategic-thinking-on-the-three-warfares/> [accessed 14 October 2016].
[428] Ronald J. Deibert, Rafal Rohozinski and Masashi Crete-Nishihata, 'Cyclones in Cyberspace: Information Shaping and Denial in the 2008 Russia–Georgia War', *Security Dialogue*, 43:1 (2012), 3–24; Timothy Thomas, 'Russia's Information Warfare Strategy: Can the Nation Cope in Future Conflicts?', *The Journal of Slavic Military Studies*, 27:1 (2014), 101–30; See also, 'German Media Worries about Russian-Led Disinformation Campaign', *Deutsche Welle*, 19 February 2016 <http://dw.com/p/1Hyst> [accessed 9 March 2016]; David E. Sanger, 'Putin

"steady drumbeat of cyberattacks targeting Ukraine's government, military, telecommunications, and private-sector information technology infrastructure."[429] All of this is backed by strong indications of substantial experience and resources being lent to developing and maintaining these capabilities.[430] The full details of Russia's most recent efforts have far from unfolded, let alone been thoroughly understood, leaving us to rely heavily on contemporaneous reporting. Nevertheless, indications of the extent of those efforts and their direction from the very top of the Russian state indicate a substantial commitment of resources and strategic outlook.[431] Far from keeping a lid on the troublesome aspects of cyberspace, Russia instead appears set on being among the first to exploit them in full.

Together, these developments indicate that Chinese and Russian enthusiasm for a strong regulatory norm constraining cyber warfare has weakened considerably, but not their assessments of the power in cyber warfare itself. More critically, their present conduct and trajectory is especially difficult to reconcile with the concepts of Tallinn 2.0 and brings immediate and deleterious consequences for wider concordance.

Thus, overall, it is already clear that major states ascribe very different meanings to cyber warfare, hold different focal points of concern, while attaching perhaps even radically different thresholds to the behaviour that concerns them. This, in turn, has already led to

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Ordered "Influence Campaign" Aimed at U.S. Election, Report Says', *The New York Times*, 6 January 2017 <https://www.nytimes.com/2017/01/06/us/politics/russia-hack-report.html> [accessed 14 January 2017].

[429] Connell and Vogler, *Russia's Approach to Cyber Warfare (1Rev)*, 19.

[430] The hacking toolkit dubbed 'WhiteBear' is one such recent example. This highly sophisticated package was initially deployed in a narrowly focused campaign against embassies and consular operations, which then expanded to include defence-related organisations. Kapersky Lab, 'Introducing WhiteBear', *Securelist - Information about Viruses, Hackers and Spam*, 2017 <https://securelist.com/introducing-whitebear/81638/> [accessed 2 September 2017].

[431] Kathy Gilsinan and Krishnadev Calamur, 'Did Putin Direct Russian Hacking? And Other Big Questions', *The Atlantic*, 6 January 2017 <https://www.theatlantic.com/international/archive/2017/01/russian-hacking-trump/510689/> [accessed 7 January 2017].

fundamentally different and conflicting ideas of appropriate regulatory or normative responses which at times target entirely different bodies of behaviour. Critically, these perspectives are constructed along strategic lines with the two broad sides generally preferring regulation that advantages one at the expense of the other, ensuring that concordance does not improve in the interim without significant shifts in those positions.

Of course, in addition to the splits between major state actors, cyber warfare is asymmetric and has a low barrier to entry, so the demands on concordance are increased accordingly as it must extend to a much larger collection of actors operating under a far broader range of conditions. The same body of constraining institutional and structural factors channelling major state behaviour does not necessarily apply to cyber warfare. The immediate conclusion is that concordance on the regulation of cyber warfare is notably weak and will also impede norm development.

It is important to note, however, that this does not entirely rule out a norm or more formal regulation. Instead, it indicates that initial refinements in the scope and intent of any regulation in advance have yet to occur. A comparable process was present in the historical cases during early considerations at The Hague. Those discussions began a common proposal for the permanent and complete prohibition of each innovation before narrowing down to the few specific areas ultimately concluded. Presumably the same process is possible for cyber warfare.

Historical factors influencing ambiguous in advance norms

With the presence of pervasive informational and conceptual issues sufficient to preclude 'complete' establishment in advance confirmed, a fundamentally ambiguous or 'incomplete' process is the probable result now as in the past. In fact, the prospect of any formal or 'hard' regulation in advance for cyber warfare appears highly unlikely, with key states even possibly preferring its absence.[432] Thus, the direct answer to the question of whether we can regulate cyber warfare in advance appears to be no.

Whether or not formal regulation proceeds, if the norms concerning cyber warfare are to remain inherently ambiguous the question then remains how that ambiguity will manifest and be interpreted over time. As summarised at the beginning of this chapter, four key areas of influence emerged from the preceding empirical chapters, narrowing and/or shaping the course of ambiguous norms. There are: a regulatory *raison d'être*, congruency with the wider norms regulating warfare, underlying concordance on the application of just-war principles, and the scope of the legitimacy gap. I examine each in turn with regard to cyber warfare to gain greater insight into its probable future.

[432] John F. Murphy, 'Cyber War and International Law: Does the International Legal Process Constitute a Threat to U.S. Vital Interests', *International Law Studies Series. US Naval War College.*, 89:309 (2013).

A regulatory raison d'être

The presence or absence of a widely recognised normative *raison d'être* driving norm establishment and pushing towards formal regulation was a pivotal factor in the historical cases, helping to narrow the regulatory and moral focus to specific areas of concern which guided the generation of a regulatory response and invoked the wider field of Just War norms to alleviate the burdens of *de novo* establishment. As discussed in Chapter 2, this takes the form of a conviction that a given innovation threatens highly probable and significant moral transgressions sufficient to compel states towards regulating it in advance, despite the pervasive uncertainty and significant possibility of error or overreach. Ideally, this concern is highly visible and inherent to the innovative warfare—though not necessarily factual—and invokes Just War civilian protections directly. The question, then, is whether such a *raison d'être* is present or likely to emerge for cyber warfare.

In the broad sense, circumstances are favourable. States are more receptive to regulating warfare today than they were at the turn of the 20th century. The increasing legalisation of the use of force quantifies this, with bodies of law playing a more significant role in the decision-making processes of many modern states than in the past. Legality increasingly provides the benchmark for the legitimacy of military action including stricter application of standards of discrimination and proportionality, particularly regarding civilian casualties. As Best notes, "Vietnam and its argumentized aftermath" fostered the emergence of a "humanitarian public opinion" leading political actors to be increasingly conscious of the

"propaganda and PR uses of law-founded arguments and accusations."[433] This then has altered the way force is exercised internationally towards greater restraint.[434]

The recent international ban on anti-personnel (AP) land mines further indicates a receptive environment to new restrictions on the means of warfare—a far cry from the open opposition at The Hague in 1899 and 1907.[435] Norm entrepreneurs from transnational civil society succeeded in convincing states to prohibit a previously accepted means of war through arguments of its inherently and unacceptably disproportionate nature as, once placed, landmines "are indiscriminate, delayed-action weapons that cannot distinguish between a soldier and an innocent civilian. They continue to kill and maim long after the fighting has stopped."[436] UN estimates suggest that AP landmines are 10 times more likely to kill indiscriminately after hostilities have ceased, than legitimately during them.[437] With vigorous support from global civil society, this was a sufficient *raison d'être* to secure broad international support for a full prohibition despite the ample possibility of legitimate use. But it is also worth noting that the military utility of AP landmines is marginal, meaning that the prohibition exacted little strategic cost.[438] Nevertheless, a relatively receptive international climate clearly exists for challenging the permissibility of weapons that do not necessarily transgress just-war principles.

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[433] Geoffrey Best, *War and Law Since 1945* (Oxford University Press, 1997), 412.
[434] See: David Kennedy, *Of War and Law* (Princeton University Press, 2009), 7–23.
[435] Price, 'Reversing the Gun Sights', 613–644.
[436] Quoted in Price, 'Reversing the Gun Sights', 628.
[437] Paddy Blagden, 'Anti-Personnel Landmines-Friend or Foe?', *A Study of the Military Use and Effectiveness of Anti—personnel Mines, Geneva: ICRC*, 1996, 4.
[438] For example, In 1991 Iraqi minefields around Kuwait delayed an American offensive by all of two hours while causing very few casualties, despite nine million mines laid. A range of other similar cases were raised by entrepreneurs which contributed directly to the ban. See: Blagden, 'Anti-Personnel Landmines-Friend or Foe?'; Christopher Harland, 'Anti-Personnel Landmines: Balancing Military Utility and the Humanitarian Cost', *Centre for Land Warfare Studies Journal*, 2008.

However, despite the compatible international climate, a comparable argument is not present for cyber warfare. While it is recognised as distinct from other modes of conflict, there is little consensus on its nature and less still condemnation of its moral character. This is unsurprising as cyber warfare to date, as far as we know, has yet to cause personal harm. Even its physical destruction so far is extremely limited with no collateral effects.[439] Notably, even those states most enthusiastic for expansive regulation justify it in terms of social stability and sovereignty, not arguments for a propensity for moral transgression or some inherent 'horribleness.' In fact, the expected moral costs at this point are so low that Denning and Strawser argue that a moral obligation exists *for* cyber warfare over other means precisely because it may trouble Just War principles so little.[440] If anything, this suggests the presence of a *raison d'être* against regulation, rather than for it.

This is not to suggest that a highly destructive and/or deadly cyberattack is impossible—i.e. a 'violent and instrumental' attack as Rid would term it.[441] A basic example well within the realms of possibility might be a cyberattack disrupting the control systems for a dam causing major flooding or even complete structural collapse with disastrous consequences for the surrounding population.[442] Similar horror scenarios focusing on air traffic control systems,

[439] Stuxnet's degradation of centrifuges and the Saudi ARAMCO hack, which rendered thousands of hard drives unusable (but still physically intact) mark the high points of physical destruction. See: David Albright, Paul Brannan and Christina Walrond, *Did Stuxnet Take Out 1,000 Centrifuges at the Natanz Enrichment Plant?* (Institute for Science and International Security, 22 December 2010); Christopher Bronk and Eneken Tikk-Ringas, 'The Cyber Attack on Saudi Aramco', *Survival*, 55:2 (2013), 81–96.

[440] Dorothy E. Denning and Bradley J. Strawser, 'Moral Cyber Weapons', in *The Ethics of Information Warfare*, ed. by Luciano Floridi and Mariarosaria Taddeo, Law, Governance and Technology Series, 14 (Springer International Publishing, 2014), 85–103 <http://link.springer.com/chapter/10.1007/978-3-319-04135-3_6> [accessed 9 May 2015].

[441] Thomas Rid, 'Cyber War Will Not Take Place', *Journal of Strategic Studies*, 35:1 (2012), 29.

[442] There are reports of cyberattacks against dams with the possibility of water release, see: 'Exclusive: U.S. to charge Iran in cyberattacks against banks, New York dam - sources', in *Reuters*, , 23 March 2016, <http://www.reuters.com/article/us-usa-iran-cyber-idUSKCN0WP2NM> [accessed 13 July 2016] Certainly, the defence of 'critical infrastructure' is a major theme in the policy literature. See, for example: ; RA Burk & J Kallberg, 'Cyber Defense as a part of Hazard Mitigation: Comparing High Hazard Potential Dam Safety Programs in the United States and Sweden', in *Journal of Homeland Security and Emergency Management*, vol.

nuclear power generation, or a host of other critical infrastructural targets have been the subject of great concern and significant policy discourses over the past several decades.[443]

Yet, these examples are hypothetical and likely to remain so for the foreseeable future. Valeriano and Maness argue that the constraints of policy and strategy are such that a 'straightjacketing' effect is present as "there are too many negative consequences of the use of cyber weapons, for states at least" and that "states will restrain themselves from crossing the "red lines" of cyber conflict because of the high operational and normative cost associated with these operations. They will not shut down military networks, knock out power grids, or black out Wall Street; the fear of blowback and retaliation not only in cyberspace, but by conventional means as well, is too great."[444] Similarly, Healey argues that a *de facto* norm may already exist against strategic cyber warfare, noting that "though the most cyber capable nations (including the USA, China, and Russia) have been more than willing to engage in irregular cyber conflicts, they have stayed well under the threshold of conducting full-scale strategic cyber warfare, and have thus created a de facto norm. Nations have proved just as unwilling to launch a strategic attack in cyberspace as they have been to do so on the land, in the air, or on the sea."[445] A large component of this restraint, of course, is the prevailing international political climate and the general absence of overt aggression between states. Nevertheless, the presence of an apparent restraint norm further suggests that the manner of violent and instrumental cyberattack necessary to kick start stigmatisation or expansive

13, 2016, 77–94. It is worth noting that there is precedent for regulation protecting targets believed inherently indiscriminate from attack, such provisions against attacks on dams and nuclear reactors in the 1977 Additional Protocols to the Geneva Convention.

[443] For a comprehensive examination of the challenges posed in protecting critical infrastructure, see: Lewis, *Critical Infrastructure Protection in Homeland Security*.

[444] Valeriano and Maness, *Cyber War versus Cyber Realities*, 64.

[445] Jason Healey and Karl Grindal, eds., *A Fierce Domain: Conflict in Cyberspace, 1986 to 2012*, Kindle Edition (Cyber Conflict Studies Association, 2013), 537.

formal regulation of cyber warfare writ large is unlikely outside active hostilities between major states.

That said, and as the historical cases illustrate, a *raison d'être* may arise even without substance. The chemical industry's education campaigns following WWI successfully conjured and amplified an existential threat far in excess of the reality. Yet this fiction for all intents and purposes at the time was sufficient to drive the establishment of a remarkably robust norm in a short period, which then bolstered and drove formal prohibition forward despite the normalisation of chemical warfare during the previous war. As in the past, vociferous predictions of 'cyber doom' and 'cyber hype' strongly reminiscent of the chemical industry campaign are present.[446] These are laced with similar "appeals to emotion like fear [that] than can be more compelling than a rational discussion of strategy", just as in the past.[447] Their origin is also comparable, with Rid suggesting ideas of cyber as the 5th domain of war began primarily as a US Air Force "lobbying gimmick."[448] Yet, so far, these have failed to gain significant purchase even remotely comparable to the chemical industry's campaign boosting the threat of chemical weapons. Though the security implications of cyber warfare are widely noted and a subject of no small consternation, they have not yet taken on a comparably apocalyptic dimension.[449] Far from visions of cities in flames following aerial bombardment or a distant and overbearing chemical menace to civilisation itself, hacking is situated much closer to nuisance in the zeitgeist. The public is routinely exposed to malicious computer activity in their day-to-day lives without it having major effect, let alone a truly dangerous

[446] M. D. Cavelty, V. Mauer and S. F. Krishna-Hensel, eds., *Power and Security in the Information Age: Investigating the Role of the State in Cyberspace* (Ashgate, 2007), 2; See also, M. D. Cavelty, 'Cyber-Terror—Looming Threat or Phantom Menace? The Framing of the US Cyber-Threat Debate', *Journal of Information Technology & Politics*, 4:1 (2008), 19–36.
[447] James A. Lewis, 'Multilateral Agreements to Constrain Cyberconflict', *Arms Control Today*, 40:5 (2010), 4.
[448] Thomas Rid, *Cyber War Will Not Take Place* (Hirst, 2013).
[449] 1983's *War Games* aside.

one. This suggests acclimatisation and normalisation that extends to the general populace, the critical absence of which was key in the stigmatisation of chemical weapons via hyperbolic public opinion during the interwar period as discussed in Chapter 4.

Moreover, in addition to the absence of menace, a depiction of cyberattack that is routine and even mundane is pervasive. 'Hacking' is a common trope in popular entertainment by both protagonists and antagonists. In this role it rarely if ever causes personal harm and is most commonly depicted as an abstract plot device, tool of exposition, or magical MacGuffin. Though obviously far from definitive, this is sufficient to indicate that a stigma capable of driving regulation is not currently present in the public mind. Were it so, we might expect cyberattacks to carry greater odium, provoke a stronger response, and be used more exclusively as a tool of negative characterisation. Whether perceptions of cyber warfare will change is uncertain, but for the moment the conceptual space surrounding cyberattacks is crowded with characterisations suggesting it is value neutral or largely trivial.

Thus, present indications are that a compelling *raison d'être* for the establishment of a norm capable of driving the pursuit of formal regulation addressing cyber warfare are effectively absent. There is no sense of moral alarm compelling states towards the regulation of cyber warfare in advance over and above the uncertainty. Neither is there a clear sense that significant moral concerns might arise which demand action over and above the standards applied to conventional warfare. In other words, even a tentative outline for a prospective norm is missing. Without these developments, there is little prospect of the scope of ambiguity surrounding cyber warfare narrowing or signs of support through the invocation of Just War norms.

Congruency with the wider regulation of warfare

Congruency with the other regulations on warfare is highly beneficial in narrowing the ambiguity of establishment in advance and shaping subsequent interpretations and contestation of norm content. A close linkage of a new behaviour with existing warfare and its associated normative constraints aids in alleviating ambiguity by providing a moral framework and regulatory starting point that is already, presumably, concordantly supported. As examined primarily in Chapter 2, framing aviation via its bombardment potential bolstered initial regulation and led to it inheriting some specificity from the expectations already governing that behaviour. This narrowed the degree of uncertainty considerably by focusing attention on strategic bombardment and away from battlefield use where aviation made little difference. A similar effect was likely achievable for the submarine, had the nature of submarine warfare been better recognised in advance. Unfortunately, The Hague submarine considerations represented a lost opportunity to do the same in drawing from robust maritime norms. Does the regulation of cyber warfare, then, benefit from congruency with wider regulatory norms?

The broad consensus is that existing bodies and frameworks of international law can—and possibly do—govern cyber warfare, at least in theory.[450] However, despite this consensus, the benefits from congruency are significantly more limited and strained in the case of cyber warfare than in the historical cases. Whereas bombardment remained bombardment largely regardless of the source, cyber warfare represents a substantially—and even

[450] For a far more comprehensive examination of the application of *jus ad bellum* to cyber warfare, see: Green, chap. 5.

paradigmatically—different range of behaviours that are not easily accommodated by existing regulatory norms. In fact, as cyber warfare does not map cleanly to existing concepts, the effect of congruency may be to diminish the impetus for regulation as a mode of warfare in a manner comparable to the first considerations of gas shells at The Hague. There the novelty of the concept far outstripped understandings of the time as attempts to view it through established lenses obscured its more impactful characteristics.[451] The congruency of cyber warfare is best explored via a brief examination of *jus ad bellum* and *jus in bello*.

For *jus as bellum, c*ommon terms such as 'force', 'intervention', and 'armed attack' are immediately difficult to adapt into the cyber context.[452] How then do we define force within a virtual system or intervention in the heavily diluted sovereignty of cyberspace? Consensus at present holds that in order for cyberattacks to meet the standard of 'force,' and so qualify as an armed attack, they "must be equivalent to the results of a traditional kinetic attack—typically death, destruction, or injury."[453] This is the essence of Rid's argument noted earlier.[454] Not only does this depend on indexing cyberattacks to kinetic attacks that are not necessarily analogous, there is ample potential for cyberattacks which fall below that threshold of 'force' while still realising significant strategic effects with real and perceived security implications. In essence, substantial components of cyber warfare as defined in the opening of this chapter fall outside the terms of *jus ad bellum*.

[451] See: S. Shackelford, 'From Nuclear War to Net War: Analogizing Cyber Attacks in International Law', *Berkeley Journal of International Law*, 192, 2009, 192–252.
[452] Michael N. Schmitt, 'The Law of Cyber Warfare: Quo Vadis Symposium: War in the Digital Age', *Stanford Law & Policy Review*, 25 (2014), 269–300.
[453] E. Mudrinich, 'Cyber 3.0: The Department of Defense Strategy for Operating in Cyberspace and the Attribution Problem', *Air Force Law Review*, 68 (2012), 191.
[454] Rid, *Cyber War Will Not Take Place*.

An examination of *jus in bello* reveals a similar mismatch.[455] The applicability of discrimination and proportionality as principles is generally assumed, but how they are applied is highly uncertain. As explored above during the discussion of specificity, the types and targets of operations to which they apply are subject to significant and unresolved debate. Distinction as codified in Article 57 of the 1977 Additional Protocol I to the Geneva Conventions (API, 1977) holds that 'civilians shall not be the objective of attack,' and 'attacks shall be limited to military objectives.'[456] However, even basic definitions are difficult. 'Attack' is defined in Article 49 (API, 1977) as 'acts of violence against the adversary, whether in offense or defence.'[457] Violence is generally taken to mean physical force, begging the question whether cyberattacks causing no physical damage or harm are still bound by the expectation of strict discrimination? If, as Schmitt and Rid argue, cyberattacks without equivalent damage to kinetic attacks fall beyond the constraints of discrimination and proportionality, then this presumably excludes almost the entirety of observed cyber warfare to date from the constraints of *jus in bello.*[458] Furthermore, it may be in the interests of key states to keep it that way.[459]

The immediate conclusion, therefore, is that large portions of the behaviours we might expect from cyber warfare with strategically significant security implications fall outside the usual regulations on warfare, and so do not confer the benefits of congruency. For example,

[455] For a more comprehensive examination of the complications regulating cyber warfare under jus in bello, see: Green, , chap. 6; WH Boothby, 'Where Do Cyber Hostilities Fit in the International Law Maze?' in *New Technologies and the Law of Armed Conflict*, H Nasu & R McLaughlin (eds), T.M.C. Asser Press, 2014, pp. 59–73, <http://link.springer.com/chapter/10.1007/978-90-6704-933-7_5> [accessed 14 January 2014]; Copeland, pp. 43–55.
[456] Sandesh Sivakumaran, *Reference: The Law of Non-International Armed Conflict* (Oxford University Press, 2012), 41–42.
[457] Ibid.
[458] Schmitt, 'International Law in Cyberspace: The Koh Speech and Tallinn Manual Juxtaposed'.
[459] Murphy, 'Cyber War and International Law'; See also Thomas' discussion of the Power Maintenance Function in: Thomas, *The Ethics of Destruction: Norms and Force in International Relations*.

infiltrating and disabling a national air defence system, as Israel did to Syria in 2007, presumably does not meet the terms of *jus ad bellum* despite its clear security implications.[460] In effect, cyber warfare most often does not quality as 'war' per se. To constitute an act of war a cyberattack would "have to be violent, instrumental, and—most importantly—politically attributed."[461] Considered against known cyberattacks to date, these criteria have not been met individually, let alone simultaneously. No violent or truly instrumental cyberattack has yet occurred while, as discussed earlier, attribution is a major stumbling block. States may be better capable of attribution in private, but this would still pale in comparison to the clearly evident uses of force that *jus ad bellum* evolved to address—i.e. uniformed armies crossing borders under arms. Conversely, a smoking gun amounting to *casus belli* in cyberspace may be highly abstract (server logs, communications intercepts, code samples, etc.) and heavily reliant on interpretation, detailed technical and contextual knowledge, and on trusting its source given the ease of fabrication. That these may take months or even years to assemble means that 'acts of war' in cyberspace lack the immediacy of kinetic warfare.

Therefore, congruency with the wider regulation of warfare suggests that the bulk of 'politics by other means' in cyberspace is not to be considered warfare at all, and so not regulated as such. While this does not preclude regulation entirely, or regulation of the more extreme portions of cyber warfare under the terms of *jus ad bellum* and *jus in bello* broadly in line with the Western approach thus far, it does appear to further diminish the impetus for regulation alongside the absence of a *raison d'être.*

[460] Operation Orchard featured the remote disabling of Syrian air defences in service to a strike against a suspected nuclear site. See: David Makovsky, 'The Silent Strike', *The New Yorker*, 17 September 2012 <http://www.newyorker.com/magazine/2012/09/17/the-silent-strike> [accessed 26 February 2014].
[461] Rid, 'Cyber War Will Not Take Place', 29.

Concordance on just-war principles

Given the high degrees of ambiguity inherent in regulation in advance, and the probability of a repeat for cyber warfare, states are likely to be left with the task of resolving that ambiguity *in media res*. This implementation process is derived in large part from the collection of internal dynamics within each state, not the least of which is general interpretations and commitments to the principles of Just War. Though discrimination, proportionality, and the general concept of civilian protection are commonly shared, they are also deliberately ill-defined. States apply the trade-offs between military necessity and Just War as suits them, and the underlying concordance on those principles between states will shape how the ambiguity inherent to regulation in advance manifests. Moreover, as strategic imperatives and reprisal logics often lead to the decay of normative constraints where there are differences in interpretation, underlying concordance on Just War and how it should be applied to innovative warfare is essential for any semblance of ongoing concordance.

A consideration of the possible interpretations and effect of this regarding cyber warfare is far beyond the scope of this dissertation. Fortunately—or unfortunately as the case may be—a direct assessment is relatively straightforward. Significant discrepancies are immediately apparent in how major states presently apply Just War to conventional warfare with much better defined norms, strongly suggesting that comparable differences will manifest for cyber warfare in time. For the sake of parsimony, this is can be adequately illustrated through a direct example contrasting recent behaviours weighing the obligations of discrimination and proportionality for aerial bombardment, followed by some brief indications of how these attitudes are emerging in cyber warfare as well.

The revival of the bombing norm since its practical abrogation during WWII, at least among Western states, has seen considerable care taken in minimising collateral damage and civilian injury even when ancillary to legitimate strikes.[462] The Al Firdos bunker incident from the 1991 Gulf War illustrates this well. Though occupied by military personnel with strong evidence it was acting as a command and control centre—a clear military target—the bunker also housed over 200 civilians who were killed when it was attacked.[463] Rather than protesting its legitimacy as a military objective or defending the civilian deaths as an unfortunate necessity of war, the US freely conceded the strike as an error and further placed all similar targets off-limits for the remainder of the conflict to avoid any chance of a repeat. Comparable behaviour and a consistent emphasis on avoiding civilian casualties informed—at least in part—by the bombing norm typifies the conduct of Western states when wielding air power throughout recent conflicts such as Kosovo, Bosnia, Afghanistan, and Iraq. All saw substantial emphasis placed in doctrine and in practice on avoiding civilian casualties and, although the execution faltered disastrously at times, the underlying moral impetus remained a compelling factor.

The same degree of concern and restraint does not necessarily extend beyond Western states, however. For example, recent Russian bombing conduct in Syria reflects a very different weighting of the just-war equation. Philip Hammond, as then UK foreign secretary, stated openly that "[t]he Russians are deliberately attacking civilians, and the evidence points to them deliberately attacking schools and hospitals and deliberately targeting rescue workers."[464] Comparable behaviours in Chechnya in the past and a clear willingness to flaunt

[462] Bettina Renz and Sibylle Scheipers, 'Discrimination in Aerial Bombing: An Enduring Norm in the 20th Century?', *Defence Studies*, 12:1 (2012), 17–43; See also, Thomas, *The Ethics of Destruction: Norms and Force in International Relations*, chap. 5.
[463] Thomas, *The Ethics of Destruction: Norms and Force in International Relations*, 87.
[464] Patrick Wintour, 'Russia Accused of Deliberately Targeting Civilians in Syria', *The Guardian*, 16 January 2016, section Politics <https://www.theguardian.com/politics/2016/jan/15/russia-accused-of-breaching-norms-of-war-by-targeting-civilians-in-syria> [accessed 23 February 2016]; See also, 'U.S. "Strongly Condemns"

international law in overt-covert ways in Ukraine further indicates the relatively low influence of the constraints of international norms on Russian behaviour, or at the least a very different interpretation of the expectations of relevant norms. These behaviours can also be understood through a number of different lenses, including raw strategic assessments, but nevertheless reflect different weightings when translating discrimination and proportionality into practice.

This clearly being the case with well understood and highly visible modes of war, it strongly suggests that similar splits will manifest in the conduct of cyber warfare to come. There are limited indications of this already. American decision makers consistently emphasise legality, with one US Air Force General heavily involved in early cyber warfare policy remarking that "I picture myself around a targeting table where you have the fighter pilot, the bomber pilot, the special operations people, and the information warriors. As you go down the target list, each one takes a turn raising his or her hand saying, 'I can take that target.' [But the info warrior] says, "I can take the target, but first I have to go back to Washington and get a [legal] finding."[465] There are indications of similar concern regarding discriminatory targeting and the vaguely understood potential for collateral damage. Plans for 'Nitro Zeus'—an American cyber warfare campaign against Iran—were developed with attention to the unpredictable effects of cyberattacks on highly interconnected infrastructure such as power plants.[466] Similarly, Stuxnet's sophisticated targeting and numerous failsafes ensured that it did not

Resumption of Russian Air Strikes in Syria', *Reuters*, 15 November 2016 <http://www.reuters.com/article/us-mideast-crisis-syria-usa-idUSKBN13A2OI> [accessed 25 November 2016]; 'EU Condemns Russia over Aleppo, to Impose More Syrian Sanctions', *Reuters*, 17 October 2016 <http://www.reuters.com/article/us-mideast-crisis-syria-eu-idUSKBN12G103> [accessed 25 November 2016].

[465] Quoted in William M. Arkin, 'A Mouse That Roars?', *Washington Post*, Special, 1999 <http://www.washingtonpost.com/wp-srv/national/dotmil/arkin060799.htm> [accessed 6 October 2012].

[466] David E. Sanger and Mark Mazzetti, 'U.S. Had Cyberattack Plan If Iran Nuclear Dispute Led to Conflict', *The New York Times*, 16 February 2016 <http://www.nytimes.com/2016/02/17/world/middleeast/us-had-cyberattack-planned-if-iran-nuclear-negotiations-failed.html> [accessed 18 February 2016].

actively disrupt targets infected unintentionally.[467] Russia, meanwhile, is notably less hesitant to target national level infrastructure with civilian effect in its cyber warfare to date, and even targets directly for civilian effect in line with wider efforts at hybrid and non-linear warfare.[468] The Estonian and Georgian cyberattacks, generally taken to be the indirect work of the Russian state, focused on disrupting ostensibly civilian communications and financial services.

The contrast between Russian and American attitudes offers one sufficiently stark and directly relevant example to illustrate that, at the least, two of the major states poised at the forefront of cyber warfare construct civilian protections very differently. Any number of other state actors are prone to do the same, each with their own bespoke interpretations. Thus, as matters progress the chances of differing interpretations in applying the same principles to cyber warfare are high as underlying concordance cannot be assumed or relied upon. In that event, and assuming that the 'straightjacketing' effect Valeriano and Maness suggest is overcome, the likely consequence is to degrade any regulatory norms put in place through the appearance of widespread violation.[469]

An additional and highly significant complication outside the immediate scope of this dissertation is the conduct of non-state actors. Just as with state actors, they are prone to

[467] Nicolas Falliere, Liam O. Murchu and Eric Chien, *W32. Stuxnet Dossier (Version 1.3)* (Symantec Security Response, November 2011).
[468] Strongly suspected Russian cyberattacks in Ukraine are far less tentative and willing to attack major infrastructure. See: David E. Sanger and Steven Erlanger, 'Suspicion Falls on Russia as "Snake" Cyberattacks Target Ukraine's Government', *The New York Times*, 8 March 2014 <http://www.nytimes.com/2014/03/09/world/europe/suspicion-falls-on-russia-as-snake-cyberattacks-target-ukraines-government.html> [accessed 10 April 2014]; Pavel Polityuk, 'Ukraine Investigates Suspected Cyber Attack on Kiev Power Grid', *Reuters*, 20 December 2016 <http://www.reuters.com/article/us-ukraine-crisis-cyber-attacks-idUSKBN1491ZF> [accessed 21 December 2016]; For an examination of the integration between Russian non-linear and information warfare in Ukraine, see: Bret Perry, 'Non-Linear Warfare in Ukraine: The Critical Role of Information Operations and Special Operations', *Small Wars Journal*, 2015 <http://smallwarsjournal.com/jrnl/art/non-linear-warfare-in-ukraine-the-critical-role-of-information-operations-and-special-opera> [accessed 8 December 2015].
[469] Valeriano and Maness, *Cyber War versus Cyber Realities*.

interpret any norms very differently, and to do so without the framework provided by strong institutions or the same longitudinal and reputational considerations states must reconcile. Factor in the attribution problem limiting the effectiveness of deterrence and/or external normative pressures and the probability of discordance grows immensely.

Uneven experiences and the legitimacy gap

The final area of influence identified in the preceding empirical chapters is the effect that variances in the experiences and interpretations of innovative warfare can have in turn on regulatory and normative discourses that follow, particularly contestation. This can dramatically exacerbate the legitimacy gap and all but preclude effective contestation in much the same way that informational barriers precluded establishment 'in the dark' at earlier junctures. As Chapter 4 demonstrates, the greater the divergence in experiences and interpretations, the more challenging contestation becomes. If experiences of cyber warfare are prone to vary significantly, this suggests that a comparable or greater effect exacerbating the legitimacy gap will occur for the contestation of cyber warfare. Absent analogous experiences owing to fundamental differences of cyber warfare per environment, shared points of reference and understanding may not be readily available, impeding effective norm diffusion as a result. Thus, the malleability and variability of cyberspace as a domain has direct ramifications for the ways in which future cyber warfare will be experienced and the legitimacy gap at the heart of any contestation that follows.

As discussed above, we can change the fundamental rules of cyberspace as a medium practically at will. Such changes naturally alter the scope and impact of the cyberattacks that

are possible, and so also fundamentally change the experiences of cyber warfare that follow. Particularly important is that these differences may not manifest at the same time globally, or do so consistently between states. Thus, the fundamental characteristics of cyberspace and cyber warfare occurring through it can differ immensely between states or within states over time. Even at a basic and largely unintentional level, differences in operating systems, network configurations, computer hardware, and user behaviour can change the nature of cyberspace as a conflict domain.

Similarly, states' levels of technical sophistication and degrees of information and communication integration and/or reliance already differ considerably, with their resulting exposure and vulnerability to cyberattacks differing markedly. Developed states are arguably inherently more susceptible than the developing, for example, due to their greater integration, reliance, and service oriented economies. As technology progresses, it is entirely foreseeable that these underlying differences might expand in any number of ways while the even distribution of improved defensive and/or offensive capabilities is by no means guaranteed. It is safe to assume that the complexity and variability of cyberspace and conflict within it will increase over time.

In anticipating some of the future paths for cyber warfare, Healey suggests five possibilities; status quo, conflict domain, balkanization, paradise, and what he terms 'cybergeddon.'[470] Of these, balkanization is particularly important with regard to the malleability of the domain and variances in the experience of cyber warfare. In the balkanized scenario, cyberspace breaks into national fiefdoms where there is no longer a single internet, but instead a

[470] Jason Healey, 'The Five Futures of Cyber Conflict and Cooperation', *Georgetown Journal of International Affairs*, 2011, 110–17.

collection of national networks with each operating under its own rules as determined by each state's intent, and its capability to realise that intent. In this eventuality, the ramifications and experiences of cyber warfare will differ considerably from one national network to the next. The immediate consequences for regulation in advance are twofold. First, the added complexity and variability will make specificity exceedingly hard to achieve generally as well as in advance. Second, the bespoke differences between state environments equates to differing exposures and experiences with cyberwarfare. The combined implication of high degrees of malleability and variably for regulation in advance is a high probability that cyber warfare will be experienced very differently between states.

In a similar vein, the abstract nature of cyber warfare means that interpretation of cyberattacks, their effects, and attributions of responsibility are also inherently ambiguous. Where submarines, aerial bombardment, and gas attacks are directly observable and quantifiable phenomena—often involving craters, debris, and fatalities—the same is not necessarily true for cyber warfare. As a cyberattack may have no physical component at all, interpretations of its intent, effects, and responsibility may begin without a unifying point of readily observable fact. There is also the possibility that cyberattacks may be perceived even when they have not actually occurred, as people conflate events and erroneously construe that a secret cyberattack was the cause. Thus, not only can it be unclear whether a cyberattack has occurred, answering the basic questions of what, where, when, and how can remain difficult even with high degrees of technical knowledge. As former US Deputy Defence Secretary William Lynn notes, "whereas a missile comes with a return address, a computer

virus generally does not. The forensic work necessary to identify an attack may take months, if identification is possible at all."[471]

With the basic characteristics of any given cyberattack likely uncertain, they are open to wide-ranging interpretations without any guarantee of consistency or truth at the core, which are only amplified by the pernicious secrecy surrounding cyber warfare. Without a fixed point of reference and with truth being the first casualty of war, we might expect future public interpretations of cyber warfare to be governed as much by spurious assertions and fiction as they are by fact. As a result, public understandings of cyber warfare that are already arguably error-prone may become even more so over time. The knock-on effect is another factor expanding the scope for differing experiences of cyber warfare, and further widening the legitimacy gap, impeding discursive engagement, and ensuring enduring ambiguity surrounds cyber warfare.

Conclusion: the lessons from history for cyber warfare

In conclusion, the barriers to norm specificity and concordance present in the historical cases are also present for cyber warfare today. In fact, the barriers to specificity may be more fundamental and resilient to clarification given the variable and malleable nature of cyberspace along with its secretive nature. In either case, cyber warfare and any associated behavioural expectations appear likely to retain a high degree of ambiguity for the foreseeable future. Meanwhile, major states presently interpret cyber warfare differently and

[471] Lynn, 'Defending a New Domain - The Pentagon's Cyberstrategy', 99.

emphasise security concerns which inform their own strategic interpretations on which they base their regulatory preferences. As a result, even basic concordance on regulation in advance is absent.

In addition to those limitations, an examination of the influential factors derived from the historical cases suggests that matters are not likely to improve for the establishment of a robust regulatory norm. The absence of a clearly compelling *raison d'être* alongside the narrow area congruency with the wider regulation of warfare further suggests that 'hard' regulation is unlikely. Instead, something closer to the Western 'soft-law' approach embodied in the Tallinn manuals is the more probable framework, though the remaining high degrees of ambiguity will ensure that states will reconcile that ambiguity quite differently when it is tested, contributing a decaying force to any normative outlines established. The underlying differences in Just War application that are already somewhat apparent with cyber warfare, and the probability of highly variable experiences with it in practice, particularly suggest further barriers to contestation discourses in turn.

Overall, to directly address the initial question posed in Chapter 1, it appears that we cannot effectively regulate cyber warfare in advance. In fact, even a best-case of 'incomplete' formal establishment may not be achievable given the barriers and characteristics present.

CONCLUSIONS: THE UNCERTAIN PATH AHEAD

The central thesis of this dissertation is that the regulation of innovative warfare in advance is an inherently uncertain task. The consequences of that inherent ambiguity manifest in a variety of ways which preclude the establishment and development of robust norms regulating innovative warfare in advance. All of the cases examined either demonstrated or suggest the probable failure of efforts to that end, with 'incomplete' suggestions of a regulatory norm being a best-case. This does not preclude later regulation, as the robust chemical weapons prohibition and revived aerial bombardment norm demonstrated, simply that regulation in advance harbours poor prospects of meaningly constraining state behaviours in war.

For cyber warfare, then, we're left to ponder how matters might proceed. Healey offers several helpful projections on its future: status quo, conflict domain, balkanisation, paradise, and what he terms cybergeddon.[472] The majority of these suggest an offence-dominant cyberspace including a wide array of strategic behaviours, all dependent on a range of highly uncertain developments.

Perhaps more worrying, however, is the possibly increasing scope for direct physical harm via cyber warfare that the future may entail. As automation increases, cars, trucks, drones, and aircraft might all be suborned to do physical harm. In fact, a recent example illustrates that hacking cars is already upon us.[473] Another possibility for introducing physical harm is through networked prosthetics and internal devices like pacemakers. These are already in limited production as connectivity promises tremendous benefits. But these also contain a

[472] Healey, 'The Five Futures of Cyber Conflict and Cooperation', 111.
[473] Andy Greenberg, 'Hackers Remotely Kill a Jeep on the Highway—With Me in It', *Wired*, 21 July 2015 <https://www.wired.com/2015/07/hackers-remotely-kill-jeep-highway/> [accessed 23 July 2015].

complicated cyber security dimension that is difficult to grapple with.[474] Going a step further towards the speculative, the possibility of cybridisation and the so-called 'singularity' looms large on the horizon. Ray Kurzweil among many others has long predicted a point where humanity is for all intents and purposes computerised, including direct physical integration.[475] Though this is science fiction now, so too was flight when it was first considered for regulation, and science fiction has a remarkable tendency to turn into science fact. The capacity to 'hack people' naturally comes with an immense possibility for harm, however far-fetched it may presently seem.[476]

However, if this somewhat pessimistic outlook were to occur it would also, presumably, remedy some of the lacklustre findings from the historically influential factors discussed in Chapter 5. A *raison d'être* is easier to argue and maintain when physical harm with substantial scope for indiscriminate effect is both present and likely. The congruency benefits would be improved too, and a clear point of shared reference would emerge to better support contestation.

Conversely, only one of Healey's scenarios features a decline in cyber warfare, with that being dependent on technological advancements rendering cyberspace defence-dominant. Improved defences and the—at least partial—alleviation of cyber threats are plausible and would further diminish the need for a cyber regulatory norm, similar to the obsolescence of the submarine commerce raiding norm in the face of strategic, technological, and tactical

[474] Efforts to grapple with these concerns are already underway, see: 'Securing Access to next Generation IP-Enabled Pacemakers and ICDs Using Ladon', *Journal of Ambient Intelligence and Smart Environments*, 6:2 (2014), 157–77.
[475] Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (Penguin Books, 2006).
[476] The excellent 1995 Japanese animated film *Ghost in the Shell*, for example, depicts a world in which 'cyber-brains' that directly tie cognition to information technology are commonplace. This includes the hacking and alteration of core aspects of a person's identity, memory, and perception. See: Mamoru Oshii, *Ghost in the Shell*, 1995.

changes rendering the behaviour obsolete following WWII.[477] For cyber warfare, computer security measures, improved training, and best-practice standards are developing almost as rapidly as offensive techniques. Improvements in analytical heuristics and machine learning algorithms are also developing rapidly and might just be enough to tip the scale.

How might a cyber regulatory norm endure these changes? The course of the three historical innovations during WWII following their interwar contestation offers some insight. A persistent strand in each was the importance of thresholds and the contingent factors identified in Chapter 1 and discussed throughout the empirical chapters. A balance of strategic, technical, and each innovation's interactions with normative thresholds developing since The Hague, all shaped state behaviour for each innovation in turn. For aerial bombardment and chemical warfare during WWII, this produced restraint—at least for a time—against expectations. Whatever tentative normative constraints were present combined with prevailing strategic, tactical, and political conditions to present the initiation of each form as an unacceptable cost-benefit.

For bombing, during the so-called 'phoney war' held in the West for eight months after the opening of WWII, as both sides refrained from initiating city bombardment out of pressures from a lingering taboo flagging the behaviour as a 'red-line' which would trigger retaliation in kind, they each sought to maintain a claim on the moral high ground. Cognisant of an assumed offence-dominance for strategic bombing that promised immense and immediate devastation once it began, German command cautioned, "A bombing offensive against the British Isles would open up Western Germany to air attacks that would seriously hinder army

[477] The development of improved anti-submarine tactics, long-range escort carriers and air patrols, along with tools like the magnetic anomaly detector limited the effectiveness of submarine commerce raiding. Meanwhile, the geo-strategic circumstances including the predominance of a single naval state and overbearing threat of nuclear obliteration rendered the concept of commerce raiding less relevant.

preparations for the Western offensive."[478] Meanwhile on the British side, Churchill expressed that "it would be very dangerous and undesirable to take the initiative in opening unrestricted air warfare at a time when we possessed only a quarter of the striking power of the German Air Force … [as it] might result in the wholesale indiscriminate bombing of this country."[479]

Nevertheless, matters escalated eventually and swiftly following the accidental bombing of London. Though the trigger was accidental—reportedly sending Hitler into a flying rage—escalation was also inevitable. Germany had already abandoned most pretence of bombing restraint in the East with the bombardment of Warsaw, and demonstrated no strong normative commitment by turning the bombing of Warsaw into "an apocalypse of Wagnerian grandeur" in propaganda threatening the same for the rest of Europe's cities.[480] Similar disregard led to the firebombing of Rotterdam in May 1940. For the British as well, escalation was inevitable. Trenchard's doctrines for the RAF ensured that restraint ran contrary to the long-term strategic interest, and before long the British began selecting targets with 'supplemental effects' in mind, i.e. civilian effect. Expanding on this, 'de-housing' became an official objective in September 1941, with a British Air Staff Paper stating that:

> The ultimate aim of an attack on a town area is to break the morale of the population which occupies it. To ensure this, we must achieve two things: first, we must make the town physically uninhabitable and, secondly, we must make the people conscious of constant personal danger. The immediate

[478] Williamson Murray, 'British and German Air Doctrine between the Wars', *Air University Review*, 31 (1980), 51.
[479] Quoted in Legro, *Cooperation Under Fire: Anglo-German Restraint During World War II*, 135.
[480] Kennett, *A History of Strategic Bombing*, 109.

> aim, is therefore, twofold, namely, to produce (i) destruction and (ii) fear of death.[481]

By February 1942, the RAF formally embraced "the morale of the enemy civilian population" as its target, stating that bombers should target built-up areas to "render the German industrial population homeless, spiritless, and, in so far as possible, dead."[482]

The lesson of WWII's bombing is that even a tentative norm can tip the scales towards restraint for a time if supported by other factors, simply by flagging the act as one of escalation—i.e. rendering the decision to escalate one of competing thresholds between normative constraints on the one hand, and the strategic and doctrinal realities on the other.

The total restraint in the use of chemical warfare, meanwhile, illustrates another possibility where a stronger normative objection is established which shapes preparedness through path dependency effects in addition to imposing normative constraints against use. The authoritative SIPRI study offers the following succinct explanation for the non-use of chemical weapons during WWII, despite ample opportunity and at times existential imperatives to do so:

> … the two sides warned each other not to use chemical weapons at the risk of strong retaliatory action in kind; a general feeling of abhorrence on the part of governments for the use of CB [chemical/biological] weapons, reinforced by the pressure of public opinion and the constraining influence

[481] Air Chief Marshal Sir Arthur Travers Harris, *Despatch on War Operations: 23rd February 1942 to 8th May 1945* (Taylor & Francis, 2012), 7.
[482] Biddle, 'Chapter 9: Air Power', 152.

> of the Geneva Protocol; and actual unpreparedness within the military forces for the use of these weapons.[483]

Consequently, both sides took great pains to avoid threatening that balance, including a willingness to ignore accidental discharges that might otherwise have served as pretence for retaliation and reprisal, as they did in other arenas, and refusing to deploy chemical agents into the field for fear of accidental or impetuous use. Germany's fear became so pronounced that chemical warfare was equated with catastrophe. Speer testified at Nuremburg that "all sensible Army people turned gas warfare down as being utterly insane since, in view of your superiority in the air, it would not be long before it would bring about the most terrible catastrophe upon Germany cities, which were completely unprotected."[484]

Once again, the normative constraints established by contestation during the interwar period rendered the use of chemical weapons one of thresholds and in this case they were sufficiently high, while the strategic and doctrinal pressures were also mitigated by its effects. With time, non-use in WWII has become a confirmation of the norm itself, regardless of the actual balance of reasons which secured it. Nonetheless, this suggests another possibility for cyber warfare. In time, if a mix of norm and circumstances conspire, restraint may win out.

The almost immediate and eventually complete return to submarine commerce raiding, suggests another, more pessimistic, possibility. A norm with a weak justification that is incongruous with the wider face of war, and which is not shared between actors, points towards abandonment. With far weaker normative constraints even proponents of the London Protocol who hoped to reign in the submarine recognised its provisions as being

[483] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 21. Vol IV.
[484] Stockholm International Peace Research Institute (SIPRI), *SIPRI*, 314.

unreasonable and infeasible—Churchill noted that belief in its endurance was "the acme of gullibility"—and a return to unrestricted submarine warfare was not one of thresholds.[485] In light of this, Germany rejected implementation of the norm's constraints from inception and throughout its contestation. Following the protocol's collapse the US followed suit with apparent ease, having made the decision for its abandonment as much as a year before entering the war for purely strategic reasons out of the need to fight a two ocean war.[486] The central lesson from this example is that unreasonable, poorly defined, and incongruously justified norms do not contribute much of a threshold for uninvested states, leading to swift defection and possibly triggering complete decay even from those once firmly committed as entrepreneurs.

Which of these paths cyber warfare might take is uncertain—if it follows any of them at all—as is the shape of cyber warfare itself. There are signs of a *de facto* norm backed by similar strategic and policy constraints, as discussed in Chapter 5, indicating that cyber warfare is already a question of thresholds. However, the balance of these is tentative, while present circumstances do not impose heavy pressures towards aggressive use. If Healey's predictions are anything to go by, a degree of offence-dominance is likely which implies a likelihood of strong retaliatory action, bolstering the threshold of restraint via fear of retaliation as in the past.[487] Conversely, the expanded range of actors present in cyberspace and the capacity to violate norms without attribution contribute to the probability of defecting actors and norm decay should a threshold emerge. As does the difficulty of defining where and what that

[485] Churchill, *While England Slept: A Survey of World Affairs, 1932-1938*, 217–18.
[486] For a rare and excellent examination of the US path to USW in WWII, despite its earlier objections, see: Joel Ira Holwitt, *'Execute against Japan': The U.S. Decision to Conduct Unrestricted Submarine Warfare* (Texas A&M University Press, 2009).
[487] However, that offense-dominance is not trivially achieved, or without its limits. Neither is defence obsolete as it was believed to be for strategic bombing during the interwar period. See: Jon R. Lindsay, 'Stuxnet and the Limits of Cyber Warfare', *Security Studies*, 22:3 (2013), 365–404.

threshold should be, given the likely enduring uncertainty surrounding cyber warfare. In the end, the only real certainty for cyber warfare is change.

The remaining question, then, is how should states approach cyber warfare and the pursuit of an in advance norm codified via formal international regulation? Whichever of the above paths cyber warfare takes, at a basic level there are two main possibilities for a cyber norm established in advance: either a) the norm is tested by warfare between major states and—in all likelihood—fails to meaningfully restrain cyber warfare in practice given the dynamics explored in this dissertation, or b) the norm remains relatively unchallenged due to the absence of open hostilities between major states.

The former, as argued throughout this dissertation, is the more likely outcome. However, as the historical cases demonstrate, even complete abrogation is not the end of the story. All three historical cases are today arguably governed by relatively robust international norms. Not absolute, of course, and the limits of their influence is on semi-frequent display. Nevertheless, the direct experience of each innovation in WWI and WWII provided enough information, experience, and also critically improved parity of those factors between actors to prevent subsequent norm establishment from facing the same barriers of specificity and concordance discussed extensively in Chapters 1 and 2. To some extent widespread use may well be a pre-requisite for effective norm establishment. Once past WWII, and with each innovation now an accustomed component of modern industrial warfare, we enter the domain of more conventional international norm establishment and dynamics. Yet the presence of attempted establishment in advance—however incomplete and ineffectual it was—nevertheless contributed to later establishment by solidifying a precedent which alleviated the need for *de novo* norm establishment in turn. This was most prominently

demonstrated by the rapid recontextualisation of the gas shells prohibition to serve as the foundation for a full prohibition, but arguably extends to resurgence of the aerial bombardment norm just as well. This suggests that even poorly understood, woefully inadequate, and rapidly discarded attempts at in advance establishment can still produce beneficial long-term effects for norm establishment. In essence, a failed or incomplete establishment needn't be permanent and remains more beneficial in failure than no attempt at all.

The latter scenario, wherein an ambiguous in advance norm remains largely untested due to the absence of major hostilities, falls beyond the empirical base informing this dissertation. However, this possibility is more plausible today than perhaps at any other point in history. The 'long peace' and its supporting dynamics have created a situation where war between major states is not necessarily a given.[488] This suggests that there is a path to effectiveness for in advance entrepreneurship directed at cyber warfare that was not present in the historical cases. Supposing this respite in major hostilities holds, Healey's suggestions of an existing *de facto* cyber norm might succeed in expanding with the benefits of further active norm entrepreneurship from major states, possibly becoming a collection of 'red line' cyber norms that disambiguate cyberattacks which threaten *casus belli* apart from more tolerable behaviours. Given sufficient time institutionalisation may even occur, though substantial ambiguity would remain.

In either prominent scenario, there is the prospect of restraining some of the expected extremes of cyber warfare—though complete prohibition is clearly dubious given the

[488] John Lewis Gaddis, 'The Long Peace: Elements of Stability in the Postwar International System', *International Security*, 10:4 (1986), 99–142.

history—suggesting that states have good reason to pursue establishment of a cyber norm in advance for reasons beyond the opportunistic or expressly strategic attempts to advantage themselves over rivals via international norms. Thomas argues that a 'power maintenance function' governs this manner of international norm development, holding that powerful states will not assent to the establishment of norms which disadvantage them but will support norms that secure their power—particularly those that maintain the disparity between themselves and weaker states.[489] Cyber warfare—as an innovation with strong asymmetric potential—might easily qualify on those grounds, leading powerful states to support the establishment of international norms which constrain aspects of its use. Tallinn 2.0 and other comparable efforts therefore constitute a significant step in that direction. But in light of Tallinn 2.0's flaws and the glaring split between the NATO perspectives that inform them and those of the states most advantaged by challenging them, the effect is unlikely to amount to a major constraint—at least at first—and certainly would be insufficient to significantly restraint cyber warfare *en masse*. Of course, this is in large part reflective of the challenges in developing the specificity and concordance of an in advance norm, let alone accompanying formal regulation.

Nevertheless, given that either scenario contains a potential pathway to a viable norm in the longer term the immediate conclusion is that states should pursue international norms in the hopes of governing cyber warfare, but with the critical awareness that doing so is not a reliable substitute for a first or second line of defence. Nor is a prospective in advance norm likely to keep the genie in the bottle, so to speak. Extrapolating from the historical cases, even a best-case scenario would only constrain state actors and to a limited extent, leaving the

[489] Thomas, *The Ethics of Destruction: Norms and Force in International Relations*, 25, 32–33.

broader scope of *sub-rosa* and *sub-belli* activities intact, along with the potentially larger concern presented by non-state actors far less bound by those constraints. Moreover, concepts of deterrence in cyberspace harbour major issues and circumstances of overt or declared hostilities could easily render those frameworks moot via a presumption of enemy action for any cyberattack, regardless of its true source or intent. Much as a navigationally-confused German bomber inadvertently lit the fuse on WWII saturation bombing, a comparable outcome is even more likely for cyber warfare. This, presumably, negates much of the remaining restraining influence exerted by the fear of retaliation given its inevitability, and undercuts hopes that the accumulation of vast 'cyber arsenals' might forestall unrestrained cyber warfare, much as hopes that an immense offence-dominant bomber fleet would do the same.

Instead, as the potential benefits and restraining effects of norm entrepreneurship in advance are almost certainly deferred, defence in depth is the short-term imperative for states grappling with the emergence of cyber warfare. One of the quirks of cyberspace as a malleable domain entirely under our command is that we are only vulnerable to the extent that we allow ourselves to be. The practice of computer security represents a constant trade-off between utility, convenience, resources, and security. States must therefore aim to mitigate the risks posed by cyber warfare on the one hand, while encouraging norms that constrain its more catastrophic potential on the other. Too little mitigation in the immediate term may speed norm development, but achieve this through bitter experience. If mitigation proves truly effective however, norm development may be slowed or even prevented by the lack of tangible consequences to ground a *raison d'être*. How well states balance these competing approaches will define our future experiences of cyber warfare, and the norms that surround it.

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