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Beyond ‘hangovers’: The new parameters of post–Cold War nuclear strategy

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We are now more than a quarter-century into the post–Cold War period. Yet vestiges of a ‘Cold War mentality’ are said to remain, limiting our understanding of nuclear strategy today. For some, concepts and capabilities specifically developed with US and Soviet nuclear strategy in mind, such as mutual assured destruction (MAD) as an optimal strategic condition or a Second Strike Force, have become conceptual ‘hangovers’ that strategists have struggled to improve upon, leaving little room for innovation in the nuclear domain.¹ This chapter seeks to push back at this ‘hangover’ narrative by drawing out global developments that have shaped thinking about nuclear strategy since 1990. It will also be argued that the global conditions under which nuclear strategies have been formulated are fundamentally different post-1990. This might seem a rather uncontroversial statement. Most would agree that, compared to the Cold War period, the prospects of nuclear war are thankfully much reduced today. However, there are relatively few academic accounts of how nuclear strategies have developed since 1990.²

1 For a longer elaboration of this hangover narrative, see Vipin Narang, *Nuclear Strategy in the Modern Era: Regional Powers and International Conflict*, Princeton University Press, Princeton, 2014, pp. 1–3.

2 An important exception is work by Lawrence Freedman. Recent editions of his seminal *Evolution of Nuclear Strategy* reflect changes in the post–Cold War period up to the early 2000s. See Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd edn, Palgrave Macmillan, London, 2003.

This chapter proceeds in a chronological manner to give a sense of time. The post–Cold War era problematically suggests a monolithic period forever tied to the Cold War. The chapter will therefore break down this era into set periods that have shaped the conditions under which different nuclear strategies have emerged. The first starts with the immediate period after the fall of the Union of Soviet Socialist Republics (USSR) and the emergence of the United States as the sole superpower (from 1990 to 1997). This is a period in which nuclear strategy seems to take a back seat on global nuclear agendas. The second and main part of the chapter focuses on the period from the late 1990s to the mid-2000s. Transitions in the wider global order have important implications for nuclear strategy during this period—in particular, the emergence of regional centres of power, rogue powers and hostile non-state actors. The final part of the chapter turns to the late 2000s and developments that have, whether intentionally or not, begun to shape how we think about nuclear strategy and nuclear deterrence. Ultimately, it will be argued that since the 1990s, broader global developments have directly or indirectly shaped what is politically acceptable as well as militarily desirable and possible when devising nuclear strategies worldwide.

Early post–Cold War: Nuclear safety, not strategy

The break-up of the Soviet Union signalled major change on the global nuclear front. In December 1991, the USSR disintegrated into 15 newly independent states. The Soviet nuclear arsenal scattered with many parts unaccounted for across Russia, Ukraine, Belarus and Kazakhstan. The immediate nuclear challenge at the end of the Cold War was therefore proliferation based rather than focused on how best to design nuclear strategy in the post–Cold War world order.³ To address the problem of Soviet ‘loose nukes’, the Cooperative Threat Reduction Program was launched by the United States in 1991. By 1996, all three former Soviet republics were denuclearised.

3 Gilles Andreani, ‘The disarray of US non-proliferation policy’, *Survival* 41, no. 4, 1998, pp. 42–61.

Beyond efforts to secure Soviet nuclear weapons, a succession of arms control and non-proliferation initiatives were signed in the early to mid-1990s. Russian and US Strategic Arms Reduction Treaty (START I) negotiations were accelerated; a testing moratorium was established that led to the Comprehensive Test Ban Treaty (CTBT) signed in 1996, and production of new nuclear weapons halted. In addition, in 1993 a program (what would in 1997 become the Additional Protocol) was initiated to strengthen international nuclear safeguards, and in 1995 the Non-Proliferation Treaty (NPT)—the most powerful legal framework prohibiting the spread of nuclear weapons—was indefinitely extended. Elsewhere, China joined the NPT in 1992 and the CTBT in 1996; South Africa unilaterally gave up its nuclear program and joined the NPT in 1991. All in all, the early to mid-1990s represented a golden era for strengthening global legal and institutional frameworks around arms control and non-proliferation.

While arms control and non-proliferation were centre-stage, nuclear deterrence—the cornerstone of mainstream strategic thinking concerning nuclear weapons in the Cold War—was branded passé and looked likely to lose relevance fast.⁴ Addressing the US–USSR nuclear relationship in a 1995 statement to Congress, the then US Secretary of Defence William Perry argued, ‘We now have the opportunity to create a new relationship based not on MAD but rather on another acronym, MAS, or Mutual Assured Safety’.⁵ Several academic and policy studies from the 1990s onwards were tasked to consider how many nuclear weapons were necessary to maintain effective deterrence as a clear threat (e.g. the Soviet Union) was no longer the driver for formulating nuclear strategy in the United States.⁶ A 1995 US report recommended that US nuclear weapons policy be clear on the negative consequences of a nuclear response but ambiguous on the details of the actual response.⁷

4 Austin Long, *Deterrence from the Cold War to the Long War*, RAND, Santa Monica, 2006; on this, see also Theresa Delpech, *Nuclear Deterrence in the 21st Century: Lessons from the Cold War for a New Era of Strategic Piracy*, RAND, Santa Monica, 2012. Russia was an exception in some respects, abandoning ‘no first use’ in 1993.

5 William Perry, ‘Pursuing a strategy of mutual assured safety’, remarks at the National Press Club, Washington, DC, by the US Secretary of Defense, 5 January 1995.

6 I.C. Oelrich, ‘Sizing post–Cold War nuclear forces’, Institute for Defense Analysis Paper P-3650, October 2001.

7 Policy Subcommittee of the Strategic Advisory Group, ‘Essentials of post–Cold War deterrence’, 1995, www.nukestrat.com/us/stratcom/sagessentials.htm (retrieved 29 January 2018).

Academia, for its part, was also losing interest in nuclear strategy. As such scholars as Vipin Narang highlight,⁸ by the late 1980s and early 1990s, intellectual consensus around existential deterrence started to build. According to this consensus, an existential nuclear threat based on one or two nuclear bombs was enough to deter, rendering strategy somewhat irrelevant. Other developments in academia pushed strategy to the back seat. Philosophers, for instance, perhaps cheered by the reduced salience of nuclear weapons post-1990 (and the lower prospect of nuclear war more generally), almost completely abandoned intellectual conversations concerning the ethics of nuclear deterrence and technologies like missile defence. (Sadly, philosophers have yet to return to the nuclear field.)⁹ Shockingly, nuclear ethics therefore has had almost nothing to say about strategy since 1990. Nuclear strategy was not abandoned in political science or international relations, but a decisive shift began in the 1990s away from strategy towards non-proliferation as the main area of study in the nuclear subfield. This overwhelming interest in limiting proliferation continues even today.¹⁰

Nuclear strategy had to face an additional, unforeseen, challenge in the early post-Cold War period: namely, the military significance of the so-called US ‘unipolar moment’. With the fall of the USSR, the United States enjoyed unrivalled military prowess as the world’s only superpower. This prowess was on dramatic display both during the 1991 Persian Gulf War and later the 1995–96 Taiwan Strait Crisis. US military technologies used in these operations, together with US work on missile defence in the 1990s, heralded a ‘revolution in military affairs’ (RMA). The RMA represented a major wake-up call for some countries such as China, highlighting a serious gap in their advanced weapons capabilities relative to the United States.¹¹ More crucially for nuclear strategy, unrivalled US conventional military power reflected

8 Narang, *Nuclear Strategy in the Modern Era*, pp. 1–3.

9 However, in the late 2010s there have been calls, led by Thomas E. Doyle III (‘Reviving nuclear ethics: A renewed research agenda for the twenty-first century’, *Ethics and International Affairs* 24, no. 3, 2010, pp. 287–308), for a return to nuclear ethics.

10 Academic interest in non-proliferation has benefited in particular from a broader turn towards quantitative methods in political science as well as an increasingly global study of nuclear proliferation history (beyond the United States and Soviet Union) since the 1990s. Work by the Wilson Center’s International Non-Proliferation History Project stands out in this regard, as does individual work by such academics as Matias Spektor on Brazilian nuclear history, for instance.

11 On this Chinese reaction, see Nicola Horsburgh, *China and Global Nuclear Order: From Estrangement to Active Engagement*, Oxford University Press, Oxford, 2015.

a new reality for the post–Cold War age: with advanced conventional superiority there was no need for the United States to be tied to the old logic of MAD.

Summarising, several developments in the early post–Cold War period shaped, either directly or indirectly, thinking about nuclear strategy. The first started with the end of the USSR, which led to a focus on non-proliferation and a shift away from strategy. This shift away from strategy towards non-proliferation occurred in academic circles too. The second important change concerns US military power with the 1991 Persian Gulf War and the 1995–96 Taiwan Strait Crisis demonstrating two lessons for strategy: first, a glaring gap in capabilities between the United States and other states, and second, a growing role for advanced conventional technologies (as opposed to nuclear weapons) in military strategy.

The return of nuclear strategy

Nuclear strategy did not remain in the back seat for long.¹² By the late 1990s, a number of nuclear incidents pushed strategy back on to the agenda. In 1998, India and Pakistan exploded nuclear devices and refused to join the NPT. In July 1998, Iran launched a Shahab-3 missile and, in August, North Korea tested a long-range Taepodong missile. Terrorist threats also increased following attacks on US embassies in Kenya and Tanzania that year, and eventually the tragic 9/11 terrorist attacks on New York and Washington, DC, in 2001. The United States in particular feared terrorist groups' acquisition of weapons of mass destruction, and this prompted Washington to emphasise counter-proliferation and pre-emption, overshadowing its previous focus on safety issues and non-proliferation.¹³

Beyond these headline news events, there have been broader shifts underway in the global order with indirect implications for nuclear strategy. Two are explored here: (1) the rise of what Andrew Hurrell has

12 This section draws significantly on Narang, *Nuclear Strategy in the Modern Era*, and an article I co-authored: Nicola Leveringhaus and Kate Sullivan de Estrada, 'Between conformity and innovation: China's and India's quest for status as responsible nuclear powers', *Review of International Studies* 44, July 2018, pp. 482–503, doi.org/10.1017/S0260210518000013.

13 Andreani, 'The disarray of US non-proliferation policy', p. 46.

called 'regional forms of nuclear order';¹⁴ and (2) the security threat posed by rogue actors, especially North Korea and non-state actors such as al Qaeda.

The significance of the first shift for nuclear strategy requires some unpacking. The nuclear field has largely focused on strategy at a global level—that pertaining to rival great powers rather than a comparative study of regional-level nuclear strategies involving rising states.¹⁵ An exception is work cited here by Vipin Narang on South Asia more broadly,¹⁶ where the Indian–Pakistani rivalry has focused strategic thinking on confidence-building to reduce the likelihood of nuclear conflict. Yet the proliferation of regional forms of nuclear order is evident elsewhere too, such as the case of South America where rivals Argentina and Brazil cooperated in the 1990s to secure a nuclear order based on the goal of nuclear disarmament. In North-East Asia, continuing North Korean nuclear activities have moved the regional nuclear agenda towards non-proliferation and nuclear security as well as focusing on missile defence. Regional missile defence has proved especially relevant in shaping China's restrained nuclear strategy since the 1990s. China, a rising power with a small nuclear arsenal that is not on high alert, has focused on modernising its arsenal so that it remains secure and credible. Beijing has also sought to secure a role in the regional-ordering process by hosting the Six Party Talks and establishing a regional centre for nuclear security. What is a concern for this chapter is that these regional forms of nuclear order have their own sets of priorities and interests, to include rising or re-emerging powers eager to have a stake in the nuclear-ordering process.

To put it bluntly, regional forms of nuclear order have become increasingly powerful and distinct diplomatic platforms from which to manage nuclear weapons. They also condition the direction and depth of nuclear strategies.

14 This specific term was used by Hurrell in a draft paper presented to the Global Nuclear Order workshop organised by the US Academy of Arts and Social Sciences at the University of Oxford in September 2015. For more on regions and how they interact with global order, see Andrew Hurrell, *On Global Order*, Oxford University Press, Oxford, 2010.

15 In general, the nuclear field has shied away from comparative and regional studies. Exceptions include work by Etel Solingen, who compares regional cases of proliferation in her *Nuclear Logics: Contrasting Paths in East Asia and the Middle East* (Princeton University Press, Princeton, 2007) as well as Robert Ayson's article comparing institutions in the non-proliferation regime, 'Selective non-proliferation or universal regimes?', *Australian Journal of International Affairs* 59, no. 4, 2005, pp. 431–7. Doctoral work in 2012 by Francesca Giovannini at the University of Oxford specifically examined the role of regional nuclear politics.

16 For instance, see Narang's *Nuclear Strategy in the Modern Era*, or the excellent work by Paul Kapur and Samit Ganguly on India and Pakistan.

During the Cold War, the simpler (although perhaps far deadlier) nature of the nuclear game was that it existed largely at a global rather than regional level and was determined by two superpowers armed with nuclear weapons—namely, the United States and the Soviet Union. These two superpowers, together at times with the United Kingdom, spearheaded the development of major institutions and norms of the global nuclear order. However, since the 1990s, the task of managing these weapons has become more complex. Tackling nuclear proliferation crises—the Six Party Talks on the Korean Peninsula in the mid-2000s or the Iranian July 2015 deal, for example—requires the participation of multiple regional stakeholders. Crudely put, the logic of MAD and superpower politics is no longer the glue that holds nuclear order together. In its place, we have regional forms of nuclear ordering (with specific interests and capabilities that might or might not converge with one another) competing with global norms, treaties and institutions established in the Cold War era.

The second shift—that involving rogue states and hostile non-state actors—has perhaps more evident implications for nuclear strategy.¹⁷ These actors arguably enhance the prospects of nuclear terrorism to a higher degree than during the Cold War. Rogue actors like North Korea and non-state terrorist groups like al Qaeda operate outside global nuclear institutions. In these circumstances, knowing how your enemy works and developing a strategy that is credible and easy to communicate becomes a practical challenge. These actors are also considered irrational, willing to endure higher costs and more likely to use the bomb if they manage to attain this capability. This presents real challenges for the nuclear strategist, begging the question: how can one credibly deter such an actor?

Racing towards credibility

The shifts above point to a common trend underlying post-Cold War nuclear strategy in the late 1990s, namely the pursuit of credibility. Apart from the United States, almost all the nuclear-armed states in the late 1990s and early 2000s had their respective reasons for pursuing credibility. India and Pakistan, testing in 1998, had the most obvious reasons for seeking credibility. They were new nuclear actors and needed to come

17 These actors present real concerns for proliferation as well, of course. They undermine non-proliferation through participation in illicit nuclear smuggling, such as the infamous AQ Khan network uncovered in 2004.

up with a nuclear strategy for the first time. In the late 1990s and early 2000s, China finally decided to embrace nuclear deterrence publicly (it had consistently denounced nuclear deterrence since testing in 1964). China's modernisation program was also starting to bear more credible fruit from the early 2000s onwards. In particular, China secured its land-based missiles (e.g. the DF-31 and DF-31A) by making them more mobile and made progress on a submarine-launched ballistic missile capability. Russia, having lost a significant portion of its Soviet nuclear arsenal at the end of the Cold War, as well as the economic resources to maintain it, had a credibility deficit too. This resulted in a number of changes to its nuclear strategy, including abandoning 'no first use' (NFU) in 1993 and relying more on nuclear weapons rather than conventional forces in its military strategy in the 2000s.¹⁸ Israel, an opaque undeclared nuclear-armed state, saw not the end of the Cold War but the 1991 Persian Gulf War as a turning point for its decision to pursue a more credible nuclear strategy, one less reliant on the patronage of the United States.

For India, China and Israel, a credible nuclear strategy has rested on the twin goals of retaliation and restraint. This entails securing largely rudimentary retaliatory capabilities not to be confused with a second-strike capability (a Cold War concept). Unlike Cold War strategies, these basic retaliatory postures have regional rather than global force projections in mind. Important distinguishing elements of these postures include the prioritisation of (a) improving mobility for missiles, something China and India, as well as North Korea, have pursued to ensure their survivability; (b) ambiguity over the terms of use (first/no first use, alert status); and (c) uncertainty over the numbers (and types) of weapons under development. For China and India, nuclear restraint and minimalism were promoted as important markers of their respective nuclear strategies based on NFU and a de-alerted small nuclear arsenal. Both countries sought to highlight their differences compared to the superpowers that had invested in developing vast arsenals in order to secure deterrence. For China and India, vast arsenals employing a Cold War-style triad (involving air, sea and land launch platforms) is not the goal. Instead, one or two platforms suffice.

18 The National Security Concept was released in 2000. Reliance on nuclear weapons until conventional weapons were modernised was reaffirmed in the report. See F. Umbach, 'Russia's changing threat perceptions', *International Politik* 4, no. 1, 2003, pp. 53–7. See also Nikolai Sokov, 'Russian nuclear strategy: Background, current status, future', Center for Nonproliferation Studies presentation, www.nonproliferation.org/wp-content/uploads/2016/06/Nikolai-Sokov-Russian-Nuclear-Strategy.pdf (retrieved 29 January 2018).

The United Kingdom, like France, did not drastically alter its nuclear strategy in the 1990s and 2000s. Instead, it decreased its reliance on nuclear weapons with a vast reduction in the size of its nuclear arsenal throughout this period.¹⁹ France, for its part, sees credibility in more certainty regarding the terms of its nuclear use, stating it would use nuclear weapons in response to nuclear or non-nuclear attack. Russia and Pakistan place similar credibility in the first use of nuclear weapons.

The United States is the exception here. Since the 1990s, Washington has not sought credibility nor has it pursued old nuclear relationships built around MAD. Washington has instead focused on retaining the nuclear superiority it gained as the sole superpower after the Cold War. What precisely 'retaining' superiority means for US nuclear strategy seems to shift over time. Its first official outing was under President Clinton with a 'Lead and Hedge' strategy outlined in 1997.²⁰ Since then, minimum and maximum versions of retaining nuclear superiority have emerged. A maximum retaining capability (entailing more usable and accurate nuclear weapons teamed up with advanced conventional technologies such as missile defences) seemed popular following the 2001 nuclear posture review. At the time, in 2001, then President Bush stated that 'Cold War deterrence is no longer enough ... It is time for a new way of thinking'.²¹ This included a need to 'refashion the balance between defences and deterrence'.²² A minimum version of retaining nuclear superiority, which leaves more room for arms control and speaks to the aspirational and cooperative idea of a shared 'strategic stability' with Russia and China, emerged during the Obama Administration. Debates even took place over sole use in the run-up to the 2010 nuclear posture review. The retaining superiority debate in US nuclear strategy remains unresolved even today.

19 For the official UK nuclear policy on nuclear weapons since 2010 see UK Ministry of Defence, '2010 to 2015 Government Policy; UK Nuclear Deterrent', www.gov.uk/government/publications/2010-to-2015-government-policy-uk-nuclear-deterrent/2010-to-2015-government-policy-uk-nuclear-deterrent (retrieved 4 March 2018).

20 Willian Arkin and Hans Kristensen, 'Dangerous directions', *Bulletin of Atomic Scientists* 52, no. 2, 1998, pp. 26–31.

21 George W. Bush, 'Speech on missile defence', at the National Defense University, Washington, DC, 1 May 2001, fas.org/nuke/control/abmt/news/010501bush.html (retrieved 29 January 2018).

22 Jim Garamone, 'Rumsfeld details DoD goals, objectives in testimony', Department of Defense, Washington, DC, 12 January 2001, archive.defense.gov/news/newsarticle.aspx?id=45149 (retrieved 29 January 2018).

In summary, shifts in global order, especially the emergence of regional forms of nuclear order and hostile non-state actors, have important implications for formulating post–Cold War nuclear strategy. The pursuit of credibility emerged as an urgent task for nuclear actors with the exception of the United States (intent upon maintaining nuclear superiority). For some nuclear armed states, credibility is based not on assured destruction or even second-strike capabilities, but on rudimentary retaliatory capabilities with regional projections in mind. For France, Russia and Pakistan, certainty over the use of force is more important.

Late 2000s: delegitimising and de-emphasising the bomb

In the late 2000s, a number of global developments have, intentionally or otherwise, chipped away at the role nuclear weapons might play in future military strategy. Two will be discussed here. The first development refers to a series of high-level policy initiatives that reinvigorated the disarmament agenda and deliberately sought to delegitimise the bomb. The second development concerns discussions in military and strategic circles regarding ‘cross-domain deterrence’ and whether this formulation of deterrence might indirectly de-emphasise the role of nuclear weapons in overall military strategy.

Momentum behind the delegitimation of nuclear weapons began to build from 2009 onwards when US President Obama launched what has now become known as the ‘Prague Agenda’, a set of goals to reduce the number of nuclear weapons worldwide and restart arms control, especially with Russia.²³ Major aspects of this initiative included three important developments by April 2010: revised US nuclear ballistic missile defence and space posture reviews, a new START (Strategic Arms Reduction Treaty) between the United States and Russia, and the first global Nuclear Security Summit. Taken together, these initiatives signalled a possible return to arms control through strategic stability dialogues with Russia and China and the nuclear security summits. A second initiative, not to be confused with Obama’s Prague Agenda, also emerged in the late 2000s, one calling for a more transformative ‘nuclear weapons free

23 Obama used the term in a speech in Prague on 5 April 2009.

world', or 'Global Zero'.²⁴ Around this time, a third initiative emerged, focused on the humanitarian impacts of nuclear weapons. Initially a fact-based initiative, the Oslo Conference on Humanitarian Effects of Nuclear Weapons was held from 4 to 5 March 2013. Subsequent meetings in Mexico in February 2014 and Vienna in December 2014 have focused less on scientific studies of the humanitarian effects of these weapons and more on the pursuit of a weapons ban.

Of these initiatives, the Prague Agenda has had much wider global appeal among governmental elites in most nuclear weapons states than the campaign for a nuclear weapons-free world. The humanitarian impact agenda has become a popular venue for non-nuclear weapons states and especially non-government organisations, which have long campaigned for global disarmament. However, none of these initiatives have led to substantive change in terms of nuclear strategy; despite these efforts, nuclear deterrence remains a cornerstone of all nuclear-armed national security policies, including that of the North Atlantic Treaty Organization (NATO). Even in the United Kingdom, where domestic debate has raged around renewing its nuclear deterrent Trident, there seems to be little if any prospect of disarmament.

The second development, which has some potential to transform nuclear strategy, is cross-domain deterrence. This concept was not unheard of during the Cold War, yet it has become more evident in the post-Cold War era. Strategists worldwide have been concerned about the implications of cyber- and outer-space technologies and how they can be combined with nuclear weapons to strengthen rather than undermine deterrence.²⁵ In the United Kingdom, discussions are going on around what it terms 'full spectrum deterrence'. The idea is to have dominance over a number of domains; not just cyber, space and nuclear but also international law, diplomacy and influence over the global economy. Outside the West, China is making significant inroads in developing cross-domain deterrence. According to Brad Roberts, cyber warfare is a key element of an overall 'theory of victory' in Chinese military strategy beyond nuclear

24 George Schultz, William Perry, Henry Kissinger and Sam Nunn, 'Toward a nuclear-free world', *Wall Street Journal*, 15 January 2008, www.nti.org/media/pdfs/NSP_op-eds_final_.pdf?_=1360883065 (retrieved 29 January 2018).

25 Martin Libicki, *Cyberdeterrence and Cyberwar*, RAND Corporation, Santa Monica, 2009; on space deterrence, Robert Butterworth and John Sheldon, *Deterrence in Space: Responding to Challenges to the US in Outer Space*, George Marshall Institute, Washington, DC, November 2008.

deterrence.²⁶ Whatever China's overall strategic goal, recent changes under President Xi Jinping, such as a new military force dedicated to cyber and space (the People's Liberation Army (PLA) Strategic Support Force), suggest that it envisages scenarios in which cross-domain deterrence is in play. Ultimately, it remains unclear what this type of deterrence means for nuclear strategy. Does it render, or threaten to render, nuclear deterrence redundant, as some argue,²⁷ or simply form part of a suite of deterrence capabilities? Whatever the answers, these domains are likely to matter because they have become more prominent than they ever were during the Cold War.

Conclusion

This chapter has identified a set of distinctive features in the post-1990 environment that have directly or indirectly shaped nuclear strategy. Initially, at the end of the Cold War, the dissolution of the USSR and the threat of 'loose nukes' forced nuclear strategy to take a back seat on global nuclear agendas. The early to mid-1990s instead became a golden era for arms control and non-proliferation wherein several treaties and initiatives were established or strengthened. In academia, too, nuclear strategy lost favour, and studies turned to proliferation puzzles rather than questions of modern strategy. Even philosophers, no longer concerned about superpower nuclear war, abandoned the ethical dilemmas posed by nuclear weapons. Moreover, during this period, US conventional weapons and the so-called RMA—not nuclear weapons—were all the rage. US military capabilities on display in the 1991 Persian Gulf War and later the 1995–96 Taiwan Strait Crisis signalled a glaring gap in capabilities between the United States and other nuclear weapons states like Russia and China. More broadly, US military prowess sent a clear message for nuclear strategy: the days of MAD as a guide for strategy were over.

26 Brad Roberts, *The Case for US Nuclear Weapons in the 21st Century*, Stanford University Press, Stanford, 2016, p. 165.

27 James E. Goodby, 'The nuclear dilemma: Constants and variables in American strategic policies', in *The War That Must Never Be Fought: Dilemmas of Nuclear Deterrence*, ed. George P. Shultz and James Goodby, Hoover Institution Press, Stanford University, 2015, pp. 69–71, www.hoover.org/sites/default/files/research/docs/goodby_shultz_-_the_war_that_must_never_be_fought_-_scribd.pdf (retrieved 4 March 2018).

Nuclear strategy had returned to national security agendas by the late 1990s. Two important developments in the broader global order enabled and facilitated this process. The first development concerns 'regional forms of nuclear order'. Regional nuclear orders have emerged with their own interests and capabilities, and this is a distinctive feature of the post–Cold War environment. As a result, nuclear strategies have increasingly developed through a regional rather than global lens, as was the tendency during the Cold War. The second development relates to hostile non-state actors and rogue states. Deemed difficult to deter, they continue to pose a serious problem for modern nuclear strategy.

Eventually, the pursuit of credibility emerged as a key driver for nuclear strategy in the 1990s. Credibility has come in different forms for different nuclear-armed states. For some, such as China and India, strategies have been built around notions of restraint and minimalism, while others have moved towards more unilateral forms of deterrence. Russia, France and Pakistan increasingly rely on their nuclear arsenals; other nuclear-armed states have sought to reduce their reliance on nuclear weapons. The United States is the exception. Rather than credibility, it has focused instead on retaining superiority in its nuclear strategy since the 1990s. Despite developments in the late 2000s around Global Zero and the humanitarian impact initiative, including efforts to pursue cross-domain deterrence, credibility remains the baseline for most nuclear strategies. Ultimately, nuclear strategy has come a long way since 1990. From the back seat of global agendas and intellectual disinterest, nuclear strategy has developed in the context of regional forms of nuclear order and the pursuit of credibility.

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